



BREAST HEALTH TEACHING SHEETS

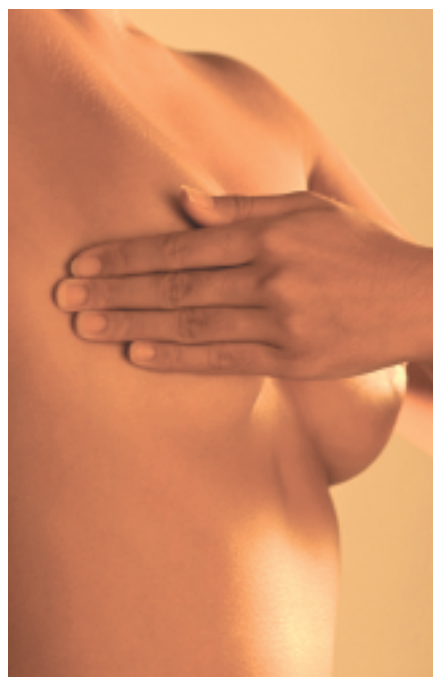
IN ENGLISH AND SPANISH

4TH EDITION

www.breasthealthcare.com



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GENERAL EDUCATION



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St. Vincent's HealthCare

St. Vincent's Breast Health Center
1800 Barrs Street
Jacksonville, Florida 32204

Antiperspirants and Breast Cancer

You may have received an e-mail or a friend may have told you "antiperspirants are the cause of breast cancer." The rumor has been circulating that the use of antiperspirant deodorants is a leading cause of breast cancer. It states, "women who apply antiperspirant right after shaving increase their risk for breast cancer further because shaving causes nicks in the skin that give the chemicals entrance into the body from the armpit area." Based on current scientific studies, this theory is not accurate.

The message also claims that antiperspirants interfere with the body's need to purge dangerous "toxins" from under the arm by stopping underarm perspiration (as opposed to regular deodorants that merely provide fragrance). Aluminum zirconium tetrachlorohydrate is the ingredient found in antiperspirants that reduces sweating. The theory claims that this ingredient causes certain toxins to become trapped inside the axillary lymph nodes leading to cell mutations and the development of breast cancer.

This link between antiperspirants and breast

cancer is **speculation** and according to present clinical data, inaccurate. The body does not, in fact, need to purge toxins from the armpits in the form of perspiration. There are no toxins to purge; sweat is made up of a combination of 99.9% water, sodium, potassium and magnesium. In fact, sweating is healthy and beneficial. During exercise, the evaporation of sweat from the skin cools the body's temperature back down to normal.

Extensive studies have been conducted on the risk factors of developing breast cancer, none of which have been linked in any way to the use of antiperspirants. The U.S. Food and Drug Administration (FDA) would not allow a product to remain on the market if proof existed that it caused breast cancer.

If you have heard or read the rumor and feel uncomfortable with what you have heard, you may wish to buy deodorants without the antiperspirant ingredient. There are many types of deodorants on the market including some natural products found in health stores and spas. Just read the label and look for one that says "deodorant" only.



Bra Fitting

A properly fitting bra is helpful in preventing some types of breast pain. You can determine your correct bra size by carefully measuring and using the following criteria for a well-fitting bra.

Determine Body Size:

Measure either way with bra on.

1. Measure rib cage under breasts and add five inches.
2. Measure chest above breast just under arms.

Cup Size:

Measure gently around high point of bust with bra on to determine cup size and compare with body size.

Same measurement	=	AA
Plus 1 inch	=	A
Plus 2 inches	=	B
Plus 3 inches	=	C
Plus 4 inches	=	D

Assessment for Fit of Bra:

- Shoulder straps should not dig into skin.
- Fits close to breastbone in center.
- All breast tissue fits into cup.
- Cup of bra does not wrinkle.
- Bra does not ride up in back.
- Can comfortably slip a finger beneath the band under the cups of the bra.
- Breast height is midway between shoulders and elbow.

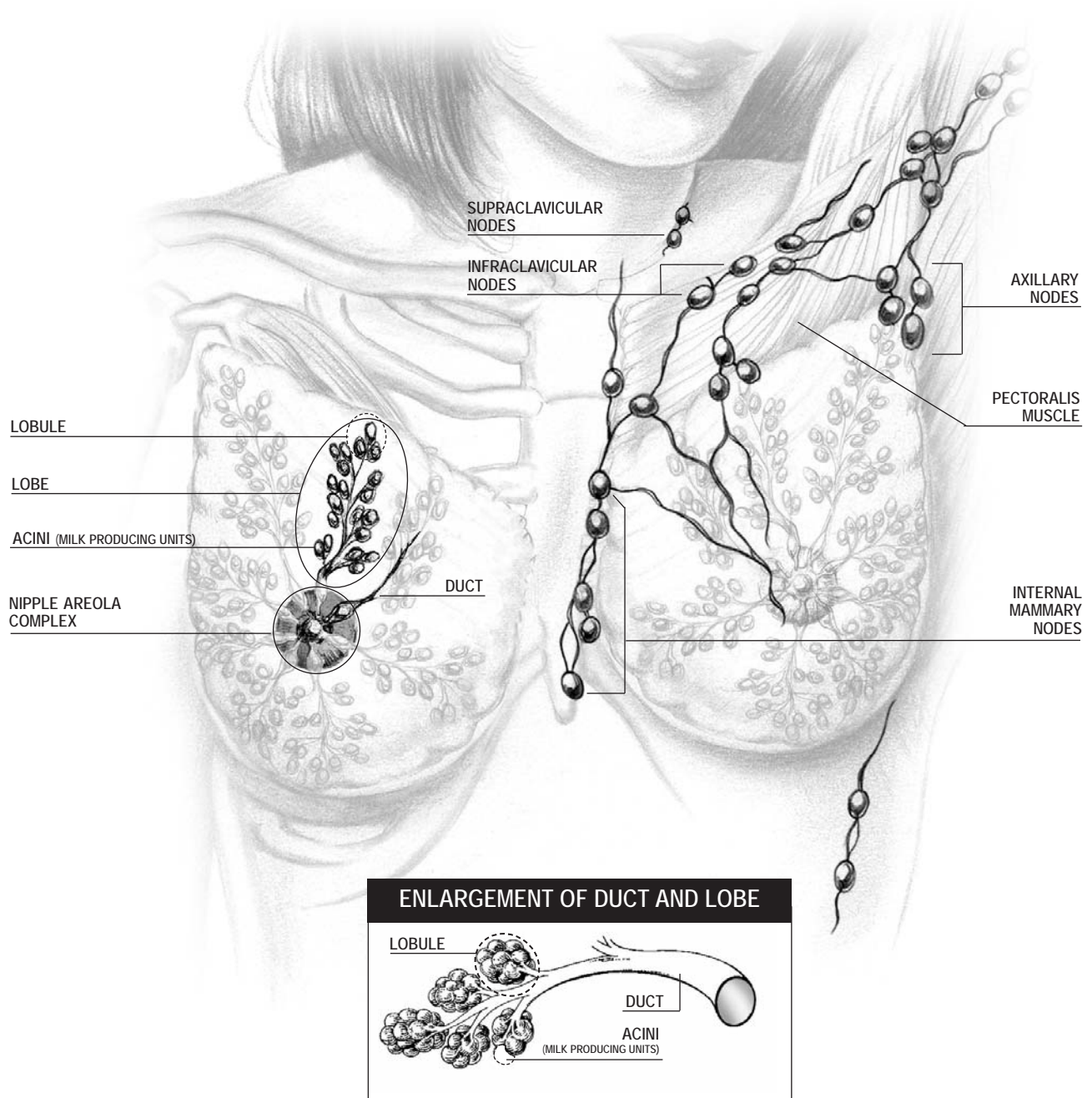


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Breast Anatomy





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Breast Cancer Facts

2006 Breast Cancer Statistics

- Breast cancer is the most frequently occurring cancer: 212,920 women will be diagnosed with invasive and 61,980 with in situ breast cancer, a total of 274,900.
- One woman is diagnosed every three minutes in the U. S.
- One woman dies every 12 minutes in the U. S.
- 41,430 women will die from breast cancer this year.
- One out of eight women will develop breast cancer in her lifetime.
- Men are also at risk for breast cancer; 1,720 men will be diagnosed.
- 460 men will die from breast cancer this year.
- Breast cancer is the leading cause of death among women 35 to 54 years of age.
- Breast cancer costs more than \$6 billion each year in medical expenses and lost productivity.
- Of women diagnosed with breast cancer, 76 percent have NO risk factors; the greatest risk is being female.
- Having a first degree family history of breast cancer increases risk two to three times; if cancer occurred in relative before menopause or occurred in both breasts, the risk is even higher.
- Family history on mother's or father's side is equally important.
- Having a first child after age 30 or having no children.
- Early menstruation (before age of 12) or late menopause (after age of 50).
- History of ovarian cancer.
- Increased alcohol intake.
- Obesity, particularly after menopause.

Our greatest weapon against breast cancer is early detection. Breast cancer found early can usually be treated successfully. Practice breast self-exam monthly. Contact a physician if any change is found in your breasts. Have a clinical breast exam by a healthcare professional. Women 40 and older should have a mammogram yearly as recommended by the American Cancer Society.



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Breast Cancer Statistics

- Breast cancer is the number one occurring cancer in women. Every three minutes a woman is diagnosed with breast cancer.
- 214,460 women and 1,720 men will be diagnosed with invasive breast cancer.
- Another 61,980 will be diagnosed with in situ breast cancer for a total of 276,620 diagnoses.
- Every 12 minutes a person dies from breast cancer. 40,580 women and 470 men will die from breast cancer in 2004.
- Breast cancer is the number one cause of death among women 35 to 54 years of age.
- In 1961, breast cancer incidence was 1 in 20 women; today it is 1 in 8.
- It is estimated that 2 million women will be diagnosed with breast cancer this decade.
- One-half million women will die of breast cancer in this decade, ten times more Americans than were killed in the Vietnam War.
- Breast cancer has the highest degree of emotional morbidity of any disease for women.
- Breast cancer utilizes more diagnostic x-rays than any disease yearly.
- Breast cancer requires more surgical operations than any other disease.
- Breast cancer requires more chemotherapy than any other cancer.
- Breast cancer utilizes more radiation therapy than any other cancer.
- Breast cancer requires more diagnostic testing (bone, liver scans).
- Breast cancer requires more hormonal therapy than any other disease.
- Breast cancer is the most costly cancer in physician and hospital bills.
- Breast cancer is the most feared of all diseases for a woman.
- Breast cancer is the most self-discovered of all cancers.

What about tomorrow? How can we change the future for many women?

Until we receive new information, early detection is the best hope for American women. Early detection—practicing regular breast self-exams and complying with screening guidelines for clinical exams and mammography on the recommended basis—is the best hope we can currently offer. It is estimated that one-third of the breast cancer deaths in America yearly could be prevented by early detection. Breast cancer detected in its early stage can usually be treated successfully. Our commitment is to education and support of the woman to learn breast self-exam skills and adhere to the screening guidelines until our future in breast cancer changes.



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Breast Self-Exam

"It is time to place your breast health in trained hands . . . your own."

The Art of Breast Self-Exam is designed to teach you how to best protect your breast health. Studies show that women find 90 percent of breast lumps that can be felt. Yet, only a small percentage of women practice regular breast self-exam, a self-care skill that requires only minutes a month and could possibly save their lives by identifying a change in the breast earlier.

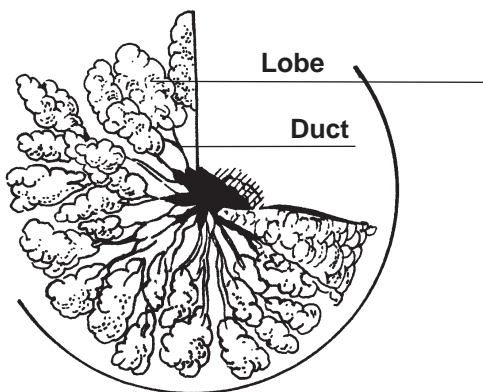
Breast cancer is the number one diagnosed female cancer, afflicting one out of eight women in their lifetime. At present, there is no effective method to predict which women will have breast cancer. Because of this, breast cancer becomes every woman's enemy, and every woman needs to learn the most effective methods to protect her breast health and future. The best protection is to be an **informed woman** who is familiar with her own breasts, practices regular breast self-exam (BSE), recognizes signs and symptoms which a physician should evaluate, and has regular mammograms. The good news is that if breast cancer is detected early, it has a far greater chance of being treated successfully. The real enemy is not breast cancer, but the late detection of it.

The **MammaCare®** method is a modification of traditional breast self-exam developed as a result of a study at the University of Florida and funded by the National Cancer Institute. These modifications are now considered state-of-the-art in breast self-exam methods.

Understanding Your Breasts:

Most women think their breasts should feel soft and spongy when examined. However, most breasts have a normal pattern of lumpiness caused by the complex glandular structure of the breasts and the effects female hormones have on these milk glands. This normal pattern of lumpiness even changes throughout the month. Before a menstrual period begins, female hormones cause the number of breast cells and the amount of fluid in the breasts to increase. The result is lumpy breasts, called **normal nodularity**. During these monthly changes, your breasts may feel swollen, tender, or even slightly painful. These symptoms are all normal. Your goal is to learn to identify your pattern of normal nodular breast tissue and report any unusual changes or a lump to your physician.

Internal Structures of the Breasts Cause Them To Feel Lumpy



Breast gland feels lumpy when pressed against your ribs

When to Check Your Breasts:

Check your breasts when they are least tender and not filled with fluid. This varies for different women:

- Menstruating women should examine their breasts the last day of the menstrual period or several days after.
- Menopausal or pregnant women should select the same day of each month.
- Women on hormonal therapies who cycle off their medication need to perform their exam the day they resume their medication. If medication is not stopped, select the same day of each month.
- Breastfeeding mothers should examine their breasts when all milk has been expressed. This sometimes requires that only one breast can be checked at a time because all the milk cannot be expressed completely from both breasts.
- Mastectomy or lumpectomy patients need to continue to carefully examine their remaining breast and surgical site, with special attention to the incisional area. Also check for lymph node enlargement above and below the collarbone.

Visually Examine your breasts in front of a mirror using the four positions illustrated below :



Bending



Arms at Side



**Hands on Hips
Pressing Down**



Raised Above Head

In each position turn from side to side and look at your breasts for changes in the following:

- Shape of the breast, nipple, and areola. Compare one breast to the other. One breast may normally be larger than the other, but sudden changes in size should not occur.
- Skin for any rash, redness, orange peel skin, dimpling (pulling in), bulging out, moles, or any type of sore.
- Nipples for any crusty material caused by a discharge, rash around the nipple, or inversion (pulling in) of the nipple.
- Vein patterns on the chest for a noticeable increase in size or number of veins compared to the other breast.

Breast Self-Exam

Position for exam: Side-lying position

- Lie on the side opposite of the breast you are to examine and pull your knees up slightly.
- Rotate the shoulder of the breast you are examining to the flat of the bed. You will examine your right breast with your left hand and your left breast with your right hand. You may place a small pillow against the middle of your back to keep you in a side-lying position. Keeping your hips rotated during the first half of the exam is important. Your nipple should point toward the ceiling. This side-lying position allows you to most effectively examine the outer half of your breast by keeping the tissues spread out evenly.
- If you are examining your right breast, place your right hand on your forehead with your palm up. This is very important.
- Keep this position as you examine your breast with the opposite hand until you reach your nipple. Then rotate your hips to the flat of the bed and complete your exam flat on your back. Remove your hand from your forehead and place it on the bed. This allows the inner part of the breast to be spread thin on the chest wall.

Hand Palm Up



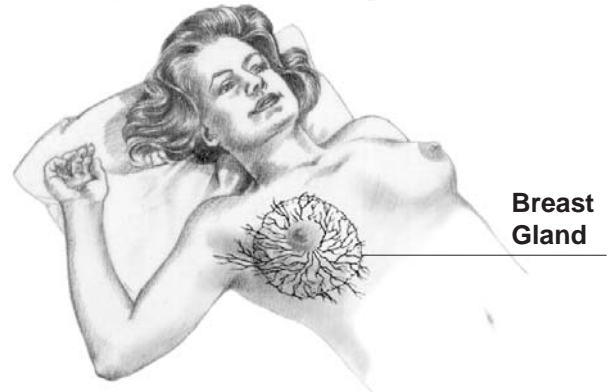
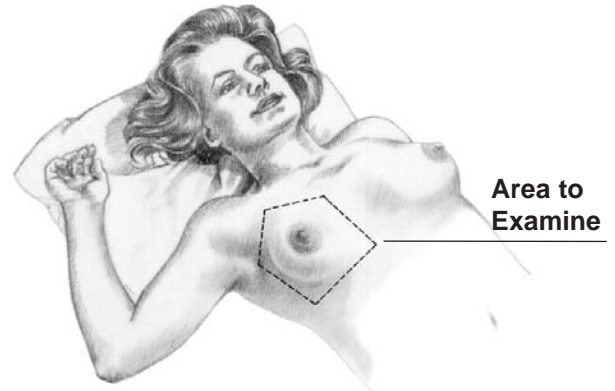
Hips Rotated 1st Half of Exam

Fifty percent of breast cancers occur in the upper, outer quarter of the breast, called the axillary tail. This side-lying position with your hand placed palm-up on your forehead allows you to examine this tissue thoroughly. Take extra time during your exam in this area.

Perimeters: Area You Examine

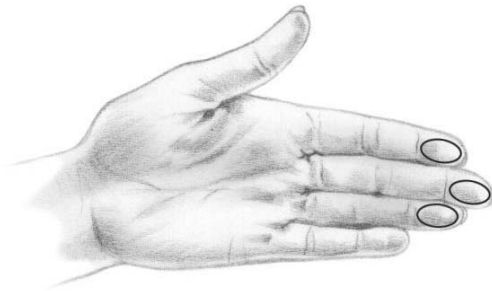
- Middle notch of the collarbone, following under the collarbone until you reach the middle of your underarm.
- Down from the middle underarm area to the bra line.
- Follow the bra line across until you reach the middle of the breastbone.
- Follow from the middle of the breastbone back up to the collarbone notch.

The reason for the large boundaries is that the breast gland is a large gland that covers most of this area, not just the breast mound.



Palpation: Finger Positions

- Use the flats of your middle three fingers, from the first joint down to the finger tips. Do not use your finger tips.



Pressure: Three Levels

Three levels of pressure will be used to make three small, dime-size circles on your breast tissue.

1. **Light Pressure** - barely moves the top layer of skin.
2. **Medium Pressure** - goes halfway through the thickness of the breast tissue.
3. **Deep Pressure** - goes to the base of the breast.

- Place your fingers in a flat, bowing position on your breast. Your smallest finger will extend upward when you have the correct, flat, bowing position for your exam.
- Do not lift your hand or release the pressure on your breast as you make the three circles. Pressure will not injure your breasts and is not usually uncomfortable. By using varying pressures, you will examine the full thickness of the breasts and reduce the possibility of displacing small lumps into fibrous tissues or the ribs.

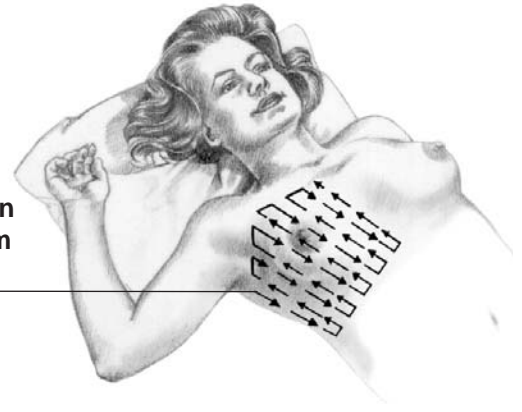
Pattern of Exam: Parallel Vertical Strips

- Begin under the arm and make rows of straight lines up and down on the breast tissue.

Practice: Examining Your Breasts

- Assume the side-lying position with hand on your forehead palm-up.
- Begin in the armpit and make straight rows of circles using three pressures in each spot, not releasing pressures as you spiral downward. Be sure not to miss any tissue.
- When you reach the nipple, roll over flat on your back, remove your hand from your forehead and place your arm on the bed.
- Do not squeeze the nipple; examine the nipple area using the same method with three levels of pressure. Report any discharge not associated with the onset of a menstrual period, hormonal medications, sexual stimulation, or excessive manipulation of the breasts. A bloody discharge or a discharge from only one breast needs to be reported promptly.
- When one side is completed, repeat the method for the opposite breast.
- Feel above and below your collarbone on both sides and under both arms for any enlarged pea-like lumps. Enlarged lymph nodes feel distinctively firmer than surrounding tissues. Report any enlargement found, but remember that any infection may cause enlarged lymph nodes.

Begin
Exam
Here



Plan of Action: What to do if you find a lump or change during your exam.

- If you feel or see a change in your breast, stop and examine the opposite breast in the same area. If you find something similar, it is probably a normal hormonal change.
- Write down what you found and where you found it.
- Wait for your next period. If the lump or change does not become softer, smaller, or disappear, contact your physician.
- If the lump found is stony hard, contact your physician immediately.
- If you see a change during your visual exam, but cannot feel a lump, contact your physician for evaluation.

Remember:

- 80 percent of lumps biopsied are not cancerous.
- 10 percent of breast cancers do not form a hard lump.
- 90 percent of breast cancers are stony hard, anchored in surrounding tissues, usually painless, and do not change in degree of hardness during a menstrual cycle.
- Any lump or change needs a physician's evaluation.

After you complete your exam each month, congratulate yourself for taking an active part in your breast health and forget it for a month. Examining your breasts frequently during various times of each monthly cycle can create confusion because of the changes the breast tissue undergoes during each cycle. A once-a-month exam is adequate.

Clinical Exams:

A yearly breast exam by a physician is necessary to supplement your monthly breast self-exam. Schedule your exam when your breasts are least tender and least filled with fluid—within several days after the end of your monthly period.

Mammogram:

A mammogram is an x-ray of the internal breast tissues. Mammograms can detect some changes two years before they can be felt. However, mammography can miss 10 to 15 percent of the lumps you can feel.

Screening guidelines for mammograms, according to the American Cancer Society, are:

- **35 - 40** –
A baseline screening mammogram.
- **40 and up** –
Every year or as recommended by your healthcare provider.
- **High risk** women's physicians may recommend mammography screening at an earlier age or more frequently.

When going for a mammogram:

- Schedule at the end of your monthly period. If taking supplemental estrogen and you cycle off, schedule the day you resume your medication when your breasts will be less tender.
- Do not wear deodorant, perfume, or powders on your upper body. They may show up as a shadow or debris on the film.
- If a past mammogram was uncomfortable, stop consuming caffeine several weeks prior to your exam or take ibuprofen for two days. Inform your technologist of your experience.
- Be prepared to give your breast history. Report to the technologist or physician any changes and ask any questions you may have about your breasts.

Every woman's best chance against breast cancer includes:

- Proficient breast self-exam performed monthly.
- Clinical exam by a healthcare professional.
- Mammography on the recommended schedule.
- Evaluation of any unusual change in breast by a physician.



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Caffeine Connection

Many women complain of sore, painful breasts often associated with fibrocystic breast changes. Some researchers have identified caffeine as a possible contributing cause. After a consultation with a physician to rule out disease, a caffeine-free diet may be recommended to reduce this pain. While some women find no relief from reduced caffeine, others have reported an improvement in the discomfort and pain after approximately two months. Some women respond more slowly and it may take up to a year.

If you decide to reduce the caffeine in your diet, you may experience headaches as you decrease your caffeine intake. This is a normal process of your body withdrawing from the caffeine. It may be helpful to gradually reduce your caffeine intake to lessen the impact. Headaches may last from one to seven days.

Most people associate caffeine with coffee consumption. However, there are many products that also contain high amounts of caffeine. These products need to be reduced or eliminated also. Listed below are products and the amount of caffeine they contain.

<u>Product</u>	<u>Caffeine Milligrams</u>
Coffee	
Drip (5 oz.)	146
Percolated (5 oz.)	110
Instant, regular (5 oz.)	53
Decaffeinated (5 oz.)	2
Tea	
Brewed (5 oz.)	25-75
Iced tea, canned (12 oz.)	22-36
Cocoa & Chocolate	
Cocoa (water mix) (6 oz.)	10
Baking Chocolate	6
Chocolate bar	10
Soft Drinks (12 oz.)	
Mountain Dew	52
Mello Yello	52
Tab	52
Coke Classic	46
Diet Coke	46
Sunkist Orange	42
Shasta Cola	42
Diet Mr. Pibb	40
Mr. Pibb	40
Dr. Pepper	38
Diet Dr. Pepper	37
Pepsi Cola	37
Royal Crown Cola	36
Diet-Rite Cola	34
Diet Pepsi	34
Diet Mello Yello	12
7-Up	0
Sprite	0
Minute Maid Orange	0
Diet 7-Up	0
Diet Sunkist Orange	0
Fanta Orange	0
Fresca	0
Hires Root Beer	0

Non-Prescription Drugs

Product	Caffeine Milligrams
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Read the labels of all products for their contents. This is just a partial listing of many commonly used products that contain caffeine.

Stimulants—standard dose:

Caffedrine capsules	200
No-Doz	200
Vivarin	200

Pain Relievers—standard dose:

Anacin	64
Excedrin	130
Midol	65
Plain aspirin (any brand)	0

Diuretics—standard dose:

Aqua-Ban	200
Permathene	200
Pre-Mens Forte	100

Cold Remedies:

Dristan	32
Coryban-D	30
Triaminicin	30

Weight Control Aids:

Dexatrim	200
Dietac	200
Prolamine	280



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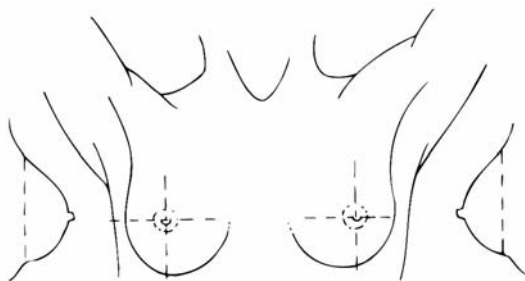
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I've Found A Lump!

A woman who finds a lump in her breast is naturally frightened. Most women immediately think of breast cancer when in reality the majority of lumps are not cancerous. However, to make a definitive evaluation of the lump

requires consulting a healthcare provider. When consulting a physician or nurse about a lump, be prepared to provide the following information:

- When did you find the lump? _____
- What size is the lump (size of pea, penny, quarter)? _____
- Describe the lump (soft, hard, movable, non-movable)? _____
- Is the lump painful? Yes No
- Do you have a breast discharge also? Yes No
- At what time in your menstrual cycle was lump found? _____
- Have you observed it through a menstrual cycle? Yes No
If yes, did it get softer or harder, smaller or larger? Yes No
- Is this the first time you have found a lump? Yes No
- How old are you? _____
- Previous mammogram? Yes No
If yes, when, where, and what were the results? _____
- Previous breast biopsy? Yes No
If yes, when, and what were the results? _____
- Family history of breast cancer? Yes No
- Mark location in breast on chart below.



Right

Left

Being prepared to answer these questions will allow your healthcare provider to effectively evaluate your breast lump or change. Remember, all lumps and changes need evaluation by a healthcare professional. This evaluation protects your good health and future.



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Misconceptions About Breast Cancer

Breast cancer occurs 85 to 90 percent of the time as a hard, stony, singular, non-mobile lump that is anchored in surrounding tissues of the breast. Usually it is a painless lump that can be felt, is found in only one breast, and occurs in women over 35 years of age. However, dangerous breast cancer signs are often ignored because they have different characteristics than the lump usually identified as cancer. Learning these common misconceptions about breast cancer could save a woman's life.

Misconception #1:

Young women (under 35) do not have breast cancer.

Breast cancer is more likely to occur in a woman older than 35, but it can occur in very young women. Any lump found at any age needs professional evaluation by a physician.

Misconception #2:

Women with high risk factors (family history, no children, etc.) are usually the ones who will have breast cancer.

76 percent of women who have breast cancer had none of the risk factors. Being female is the highest risk factor. All women are at risk.

Misconception #3:

Breast cancer is not painful; fibrocystic breast condition is what causes the pain.

Breast cancer is usually not associated with pain. However, 11 percent of women with breast cancer experienced pain as a symptom. Any breast pain needs thorough evaluation by a physician.

**All Lumps Need Evaluation By
A Healthcare Provider.**

Misconception #4:

A mammogram that is without signs of cancer ensures that no cancer is present.

Mammography is a good diagnostic tool, but it has limitations. There are some lumps that you can feel but are not seen on mammography even though mammography is able to detect lumps that are too small to be felt. Ten percent of breast cancers never form a lump that can be felt or seen on mammography. It is important to recognize the clinical signs of breast cancer that produce changes in the breast. Because mammography does not detect 10 to 15 percent of cancers, breast self-exams and clinical exams by a healthcare provider must be performed in conjunction with mammography to insure that a woman receives every method of detection available.

Misconception #5:

Breast cancer occurs as a single lump and in one breast at a time.

A very small percentage of breast cancers occur with multiple lumps (multicentric) and occur in both breasts. As always, any lump, multiple lumps in one breast, or lumps in both breasts should be fully explored by a physician.

Misconception #6:

Redness, pain, or bloody discharge are only signs of mastitis (inflammation/infection) in new mothers.

Mastitis is a common occurrence in the young mother, but if, after treatment with antibiotics, the symptoms do not improve or disappear, the patient should be evaluated further. Breast cancer in the young woman can cause the same symptoms as mastitis.



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Questions About Your Breasts

Breast Size

My breasts are so small. My breasts are so large. Why?

The size of your breasts is determined by the amount of fatty, connective and glandular tissue. This is often an inherited trait. The majority of size comes from fatty tissues.

One breast is usually larger than the other and one may sit higher on the chest wall than the other.

Breast Nipples

My breast nipples are erect and pointed. My breast nipples are flat to the skin. My breast nipples have always been inverted into my breasts. Why?

Breast nipple characteristics are individual and whether they are erect, flush with the skin or inverted, these are all normal varying characteristics. However, nipples that invert after they have been naturally everted, is something that needs to be reported to your healthcare provider, this is an abnormal change and may be from a non-cancerous or a cancerous change.

Can I breastfeed if I have inverted nipples?

Yes, naturally inverted nipples can be everted to feed a baby.

Tip: For inverted nipples insert a cotton swap dipped in alcohol followed by a dry cotton swab, once a day to keep down potential infection from moisture accumulation around the nipple.

Itchy Nipples

I have a nipple that itches, what does this mean?

An itchy nipple can be from a local source of irritation or it can be from a benign or malignant cause. The first evaluation should be; is it one or both nipples? Both nipples usually mean it is related to irritation from rubbing or contact with a substance such as soap, elastic or other material that may cause an allergic reaction. A local application of cortisone cream (over-the-counter) and removal of the irritating substance will usually relieve the symptoms. Avoid excessive rubbing of the nipples by wearing a bra during exercise or other activities. Another common source of irritation is "yeast" that may need a local application of cream for yeast infections. These interventions usually resolve the problem in a week.

If only one nipple is involved, and you apply cortisone cream and it does not clear up, contact your healthcare provider. There is one malignancy, Paget's disease, which causes nipple irritation and itching and can only be diagnosed by biopsy of the area.

Lumpy Breasts

My breast feel so lumpy, is this a sign of cancer?

Lumpy breasts, surprisingly, are normal for all women though some may have a greater degree of lumpiness than others. Most women think their breasts should feel like a bowl of jello, when in reality, they feel more like a bowl of cold, lumpy oatmeal. This lumpiness is normal during the menstrual years and is caused by hormonal stimulation of the breast tissues. The amount of the lumpiness will vary throughout the month as the hormones increase and decrease. The greatest period of lumpiness, pain, and tenderness occur right before the onset of the menstrual period. Menstruation usually reduces the degree of lumpiness. Lumpiness has nothing to do with an increased potential for cancer.

Bumps Around My Areola (Dark circle around nipple)

I have small bumps under my skin around my areola, what are these?

Small bumps under the dark skin of the areola are small oil glands that lubricate the nipple especially during breast feeding. These glands may be barely visible on some women and very prominent on others. They can also become infected and create a small cyst that may be red and painful.

Hair Around My Nipple

I have hair growing around my nipple, is this normal?

There are hair follicles around the areola. Having scattered hairs around the nipple in the areola area is normal for females. Some women may have more than other women.

Nipple Discharge

I find a discharge in my bra occasionally, is this normal?

A small amount of opaque discharge from both breasts right before your menstrual period is normal. This occurs more often in women who jog, perform aerobic exercise or after sexual stimulation of the breasts. This happens because the female hormones cause the breast to produce approximately five teaspoons of extra fluid that is stored in the breast ducts before the menstrual period. However, discharge in large amounts from both breasts or discharge from only one breast of any color should be evaluated by a healthcare professional.

Breast Pain

My breasts hurt; does this mean I have cancer?

Breast pain is most often from non-cancerous causes, and least often from cancer. If you have painful breasts the first question is, "Do both breasts hurt?" If yes, this problem is most often caused by hormonal changes or imbalances, from diet, medications or problems related to benign conditions such as your thyroid.

If the pain is from one breast and in one spot, it is most often caused by inflammation or infection of tissues, injury, referred pain from the spine, local muscles or cartilage between the ribs, and rarely from cancer. However, all pain in one breast, not associated with hormonal changes during the menstrual years, should be evaluated by your health-care provider.



MAMMOGRAPHY FORMS AND LETTERS



ST. VINCENT'S BREAST HEALTH CENTER

St. Vincent's HealthCare

St. Vincent's Breast Health Center
1800 Barrs Street
Jacksonville, Florida 32204

Abnormal Mammogram — Biopsy Recommended

The result of your mammogram performed on _____ (date) shows an area in your right/left breast that needs to be reexamined as soon as possible.

Please contact _____ (physician, facility and telephone number) to schedule an appointment as soon as possible. We have notified your physician, _____, of the results of your mammogram on _____ (date). It is important that you discuss the results of your mammogram with a physician and decide together what the next steps should be in your medical care.

If you decide to consult another doctor or healthcare provider other than the one listed here, please inform them that you had your mammogram here on _____ (date). Your mammography films are here on file and may be borrowed for your new provider to view. Please call us as soon as possible to tell us of your decision.

If you have any questions about this report and recommendation, a radiologist will be glad to speak with you. Please call:

Thank you for selecting our facility for your breast care. We are committed to your good health.



ST. VINCENT'S BREAST HEALTH CENTER

St. Vincent's HealthCare

St. Vincent's Breast Health Center
1800 Barrs Street
Jacksonville, Florida 32204

Abnormal Mammogram — Immediate Follow-up

The result of your mammogram performed on _____ (date) shows an area in your right/left breast that needs further evaluation. This is not uncommon and is not reason to be alarmed. Most changes of this type are not cancerous. We simply want to take every step possible to identify any changes.

You have an appointment with us to have your follow-up mammogram and/or ultrasound on _____ (month, date, year) at _____ (time) _____ (location). If you have a conflict and need to change the time, please notify our office. You will receive a _____ (phone call/card) from our office _____ (when) to remind you of your appointment. If for any reason you cannot keep this appointment or decide to make an appointment somewhere else, please call us at _____ (phone #).

Ultrasound is a machine that uses sound waves to identify changes in breast tissue. It is painless and is used when mammography identifies a change that may be a cyst. Cysts are not cancerous; they are fluid-filled sacs that normally occur in women. Mammography, unlike ultrasound, cannot distinguish if a lump is solid or fluid-filled.

If you change doctors or other healthcare providers before your follow-up mammogram and/or ultrasound, or if you have your mammogram elsewhere, please pass on the information that you had your mammogram here on _____ (date). Your mammography films are here on file and may be borrowed if your new provider needs to see them.

If you have any questions about this exam, a radiologist will be glad to speak with you. Please call:

Thank you for selecting our facility for your breast health needs.



ST. VINCENT'S BREAST HEALTH CENTER

St. Vincent's HealthCare

St. Vincent's Breast Health Center
1800 Barrs Street
Jacksonville, Florida 32204

Diagnostic Mammogram — Normal Results

Name _____ **Date of Birth** _____

Address _____

City _____ **State** _____ **Zip** _____

Telephone: Home _____ **Work** _____

ID Number _____

The result of your diagnostic mammogram performed on _____ (date) to examine a change in your breast appears to be normal. The results have been sent to your healthcare provider, _____ (name of healthcare provider).

You have taken a very important step in protecting your breast health by having a mammogram. However, if you have not had a clinical physical exam of your breasts by a healthcare provider, it is highly recommended to ensure that your breasts are normal and do not require additional tests. Mammography can identify approximately 90 percent of abnormalities in the breast, but some abnormalities are found only during a physical exam. Monthly breast self-exam is another valuable way to detect changes in your breasts. We recommend that you check your breasts monthly for any changes.

If you experience any changes in your breasts such as a lump, pain, discharge, thickening, or other changes in the skin or nipple, contact your healthcare provider for evaluation of the changes as soon as possible.

If you change doctors or other healthcare providers before your next mammogram, or if you have your mammogram elsewhere, please pass on the information that you had your mammogram here on _____ (date). Your mammography films are here on file and may be borrowed if your new provider needs to see them.

Your next mammogram should be performed in _____ (month and year).
You or your healthcare provider may call to make an appointment.

If you have any questions about this exam, please call:
Thank you for selecting our facility for your mammogram.



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1800 Barrs Street
Jacksonville, Florida 32204

Mammography Consent Form

Our goal is to become partners with you in protecting your breast health. To best guard your breast health, it is essential that you understand:

- Mammography is a valuable tool to find abnormal breast diseases, but does not detect all breast problems. Mammography can identify approximately 90 percent of breast problems.
- Having a physical breast exam by a physician or qualified healthcare provider is an essential part of breast screening in addition to a mammogram. Some cancer may be found by physical exam that does not show on mammography.
- Monthly breast self-exam is another valuable tool to detect abnormal changes in your breasts that may need a healthcare provider's consultation. If you feel your skills to practice breast self-exam are inadequate, ask about free classes or individual instruction in self-breast exam. Examine your breasts monthly.
- Your mammogram will be read by a radiologist with training in interpreting mammography.
- A written report of the results will be prepared by the radiologist and the results will be sent to you and your primary care physician or healthcare provider.
- You will receive the results of your mammogram in _____ days. If you do not receive the results by _____, (date) please call _____ (phone number) to notify us and receive your report.
- We are available to answer any questions about your breast health.

I have read the above recommendations and instructions about my breast screening and give my permission for _____ (facility) to perform my mammogram and to obtain my previous mammography films or pathology reports if needed.

Print Name _____

Signature _____

Date _____



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St. Vincent's HealthCare

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1800 Barrs Street
Jacksonville, Florida 32204

Mammography Scheduling Questionnaire

Name _____ Date of Birth _____

Address _____

City _____ State _____ Zip _____

Telephone: Home _____ Work _____

ID Number _____

Do you have? (If yes to any, schedule a diagnostic mammogram)

Lump	NO	YES
Discharge	NO	YES
Implants	NO	YES

History of Breast Cancer?

	NO	YES
Lumpectomy	NO	YES
Mastectomy	NO	YES

Is this a follow-up for an abnormal mammogram?

NO YES

How old are you? _____ (Refer to screening guidelines for facility if under 40)

Are you? (If under 50)

Pregnant	NO	YES
Breastfeeding	NO	YES

Do you experience breast pain any time during month?

NO YES

(Schedule when breasts are least tender)

Is your pain in one spot or one breast?

NO YES

(Refer to radiologist for evaluation)

Previous mammogram?

NO

YES

(If no, send information to patient on mammography)
(If yes, name of facility and request to bring films or sign release)

Name _____

Do you have a primary care physician?

NO

YES

(If yes, name, address, and date last seen)

Name _____

Address _____

Date _____

Do you have a written referral for a mammogram?

NO

YES

(If yes, please bring to exam; if no, ask for one)

Does your physician know you are scheduling a mammogram?

(If no, ask to inform her physician's office)

NO

YES

Do you require assistance walking or standing?

NO

YES

Do you know how to find our facility?

(If no, send directions and where to park)

NO

YES

- Do not wear deodorant, oils or body lotions on upper body for the exam.
- Wear a two-piece outfit that will allow you to undress from the waist up.
- Deodorant will be provided after your exam.
- Do you have any questions?



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Jacksonville, Florida 32204

Requesting Your Mammography Film

Previous mammography films are an essential part of your medical history. There are various reasons why you may need to obtain your films including getting a second opinion or having them transferred to another facility if you change providers or move.

Mammography films are kept on file in a facility for a period of not less than five years or, if no additional mammograms are performed, for ten years. Some states have laws that extend this time frame. Facilities are required by law to permanently transfer original mammogram films to other physicians, facilities or to the patient when requested in writing by the patient. Some facilities provide a form that can be signed at the time the films are released.

Call your mammography facility or breast center to ask about their policy for film transfer. Some

facilities will mail your film to you or to another facility; others require that you pick them up and deliver them to your new provider.

If you are requesting your films for a second opinion by another physician or facility, ask your healthcare provider to send the original, not a copy, of the films. This also requires a written request or signing a release form. When you sign the form releasing the films, the facility will not be responsible for your films until they are returned. You may want to ask that the physician or facility receiving your films for a second opinion to return them to the original facility after their evaluation.

Remember, these films are part of your vital medical history. You should make every effort to protect them while in your possession and deliver them to a qualified facility for safe record-keeping.



ST. VINCENT'S BREAST HEALTH CENTER

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St. Vincent's Breast Health Center
1800 Barrs Street
Jacksonville, Florida 32204

Screening Mammography Results

The result of your mammogram performed on _____ (date) appears to be normal. The results have been sent to your primary healthcare provider, _____ (name).

You have taken a very important step in protecting your breast health by having a mammogram. However, if you have not already had a physical exam by your physician or a qualified healthcare provider, it is highly recommended that you do so to ensure that your breasts are normal. Mammography has the ability to identify approximately 90 percent of abnormalities in the breast; but some abnormalities are found only during a physical exam. A monthly breast self-exam is another valuable way to detect changes in your breasts. We recommend that you check your breasts monthly for any changes.

If you experience any changes in your breasts such as a lump, pain, discharge, thickening, or other changes in the skin or nipple, contact your healthcare provider for evaluation of the changes as soon as possible.

If you change doctors or other healthcare providers before your next mammogram, or if you have your mammogram elsewhere, please pass on the information that you had your mammogram here on _____ (date). Your mammography films are here on file and may be borrowed if your new provider needs to see them.

Your next mammogram should be performed in _____ (month and year). You or your physician may call to make an appointment.

If you have any questions about this exam, please call:

Thank you for selecting our facility for your mammogram.



ST. VINCENT'S BREAST HEALTH CENTER

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1800 Barrs Street
Jacksonville, Florida 32204

Self-Referred — Abnormal Mammogram Follow-up

The result of your mammogram performed on _____ (date) shows an area in your right/left breast that needs to be reexamined in _____ months to make sure that it is normal. This is not uncommon. Most changes of this type are not cancerous.

You have an appointment with us to have your follow-up mammogram on _____ (month, date, year) at _____ (time) at _____ (location). If you have a conflict and need to change the time, please notify our office. You will receive a _____ (postcard/phone call) from our office _____ (when) to remind you of your appointment. If for any reason you cannot keep this appointment or decide to make an appointment somewhere else, please call us at _____ (phone).

You have taken a very important step in protecting your breast health by having a mammogram. However, if you have not already had a physical exam by a physician or a qualified healthcare provider, it is highly recommended that you do so to ensure that your breasts are normal. Mammography can identify approximately 90 percent of abnormalities in the breast, but some abnormalities are found only during a physical exam. A monthly breast self-exam is another valuable way to detect changes in your breasts. We recommend that you check your breasts monthly for any changes.

If you experience any changes in your breasts such as a lump, pain, discharge, thickening, or other changes in the skin or nipple, contact your physician for evaluation of the changes as soon as possible.

If you change doctors or other healthcare providers before your follow-up mammogram, or if you have your mammogram elsewhere, please pass on the information that you had your mammogram here on _____. Your mammography films are here on file and may be borrowed if your new provider needs to see them.

If you have any questions about this exam, a radiologist will be glad to speak with you.

Please call:

Thank you for selecting our facility for your mammogram.



ASSESSMENT

ASSESSMENT



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St. Vincent's HealthCare

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1800 Barrs Street
Jacksonville, Florida 32204

Adjusting To Loss

Complete this form and return it to your physician or nurse. This will enable them to provide you with any additional help for recovery. Answer the following questions by placing an X on the line between the numbers. One denotes not at all. Ten denotes total recovery in the area.

Example: **Not at all** 1 _____ X _____ 10 **Total Recovery**

I have returned to normal levels of functioning in most areas of my life.

1 _____ 10

I can think of my surgery and I am not overwhelmed emotionally.

1 _____ 10

My overall symptoms of grief have declined.

1 _____ 10

I can look at my new body image without feeling angry/sad.

1 _____ 10

I have accepted my loss.

1 _____ 10

I have returned to my normal sexual functioning.

1 _____ 10

I have energy and feel relaxed during the day.

1 _____ 10

I am able to rest and sleep well.

1 _____ 10

I eat well and have no digestive problems.

1 _____ 10

I feel hope and purpose in life, in spite of my loss.

1 _____ 10

I feel optimistic about plans I have for the future.

1 _____ 10

Patient's Name

Date

Surgery Date

Surgery Type

Mastectomy Lumpectomy

**Reconstructive
Surgery**

Yes No

Chemotherapy

Yes No

**Date Chemotherapy
Completed**

Radiation

Yes No



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Jacksonville, Florida 32204

Anxiety Assessment

On a scale from 0 to 3, circle the number which best describes what you are experiencing.

(0) Not At All

(1) Sometimes

(2) Often

(3) Most of the Time

Do you feel:

	<i>Not At All</i>	<i>Sometimes</i>	<i>Often</i>	<i>Most of the Time</i>
Nervous, anxious, or "on the edge"?	0	1	2	3
Events around you foggy or unreal?	0	1	2	3
Detached from all or part of your body?	0	1	2	3
Periods of panic?	0	1	2	3
A sense of dread or doom?	0	1	2	3
Worried or fearful of the future?	0	1	2	3

Do you have:

Problems concentrating?	0	1	2	3
Thoughts jumping from one to another?	0	1	2	3
Frightening dreams?	0	1	2	3
Feelings you may lose control?	0	1	2	3
Fears of "going crazy"?	0	1	2	3
Feelings or fears of passing out or fainting?	0	1	2	3
Fears of dying?	0	1	2	3
Fears of looking foolish to others?	0	1	2	3
Fears of being alone or abandoned?	0	1	2	3
Fears of being criticized?	0	1	2	3

Do you physically experience:

	Not At All	Sometimes	Often	Most of the Time
Heart racing or skipping beats?	0	1	2	3
Tightness or pain in chest?	0	1	2	3
Tingling in fingers or feet?	0	1	2	3
Nervous stomach?	0	1	2	3
Constipation or diarrhea?	0	1	2	3
Restlessness or jumpiness?	0	1	2	3
Tense muscles?	0	1	2	3
Sweating without exertion?	0	1	2	3
Lump in throat?	0	1	2	3
Trembling or shaking?	0	1	2	3
Weakness or "jelly" legs?	0	1	2	3
Dizziness, lightheadedness?	0	1	2	3
Choking sensations?	0	1	2	3
Smothering sensations?	0	1	2	3
Headaches or pains in neck or back?	0	1	2	3
Cold chills or hot flashes?	0	1	2	3

Name: _____ **Date:** _____

Add Up Your Score Total Score: _____

Review Of Score

- 0 - 4 No anxiety
- 5 - 10 Borderline anxiety
- 11 - 20 Mild anxiety
- 21 - 30 Moderate anxiety
- 31 - 50 Severe anxiety
- 51 - up Extreme anxiety

Return this sheet to your physician or nurse as requested.



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1800 Barrs Street
Jacksonville, Florida 32204

Blood Products Transfusion Evaluation

Patient's Name _____

Patient ID Number _____

Date _____

Time Started _____ Time Completed _____

Blood Bag # _____ Blood/Patient Check _____

Type: Red Blood Cells _____ Platelets _____ Other _____

Amount _____ Tubing/Filter _____ Pre-Meds _____

Infusion Site _____ Blood Return Checked _____

Infusion Rate _____ First _____ Minutes _____

Infusion Rate _____ Remainder _____ Total Infusion Time _____

Observation for Potential Symptoms

Comments

Fever/Chills	Yes	No	_____
Flushed Face	Yes	No	_____
Hives, Rash, Itching	Yes	No	_____
Difficulty Breathing	Yes	No	_____
Wheezing	Yes	No	_____
Shortness of Breath	Yes	No	_____
Pain at IV Site	Yes	No	_____
Nausea	Yes	No	_____
Vomiting	Yes	No	_____
Weakness	Yes	No	_____
Fainting	Yes	No	_____
Chest Pain	Yes	No	_____
Low Back Pain	Yes	No	_____
Hematuria	Yes	No	_____
Decreased Urination	Yes	No	_____



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Biopsy — Pre/Post Assessment

Patient Name _____

Patient ID Number _____

Date _____

Family Present in Waiting Area: Yes No

PATIENT EDUCATION	Yes	No	Comments	Initials
Written information about procedure				
Procedural steps explained				
Post-op potential: bruising, hematoma, pain				
Self-Care: activity, care of dressing				
Patient verbalized understanding				
Patient given opportunity to ask questions				
Consent signed and witnessed				

Number to contact center/physician if problems arise:

PRE-OPERATIVE EVALUATION

Vital Signs: B/P _____ Pulse _____ Temp _____

Recent Medication:

Aspirin/Ibuprofen/Coumadin: No Yes , When? _____

Allergies: No Yes , Type? _____

Pre-Op Med: _____ **Time:** _____

Emotional Status: Calm Nervous Emotionally Upset _____

Comments: _____

PROCEDURE

Physician: _____ **Technologist:** _____

Previous Film: Yes No

Breast: Left Right

Patient Positioned Time: _____

Procedure Start Time: _____

Steri Strips: Yes No **Number of Sites:** _____

Dressing: Pressure Dressing, Gauze/ Tape: Yes No

Complications: Yes No

Procedure Completed Time: _____

Patient Tolerated Procedure: Good Fair Poorly

Comment: _____

POST OPERATIVE CARE

Ice Applied To Site: No Yes

Evidence of Bleeding: No Yes, _____

Pain Verbalized: No Yes, _____

Condition at Discharge: Good Fair

Needs Assistance Other _____

Written Discharge Instructions: Yes No

Return Appointment: No Yes, **Date/Time:** _____

Time of Discharge: _____

Addressograph:

Physician/RN/Technologist Signature

Date

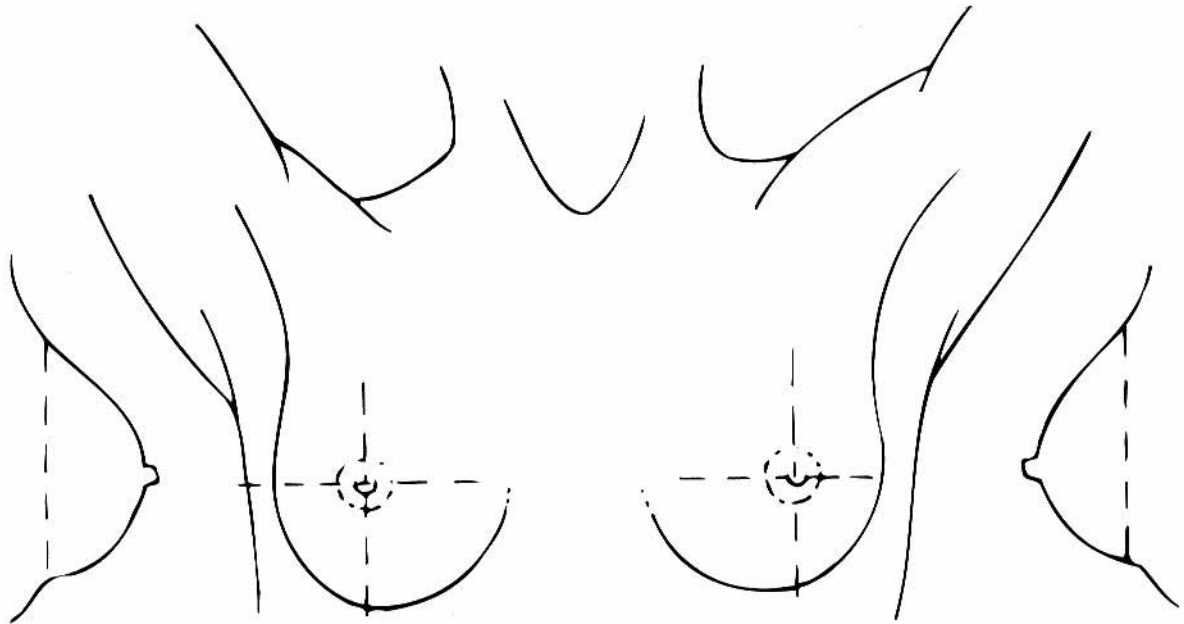


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Breast Diagram



Patient's Name _____

Patient ID Number _____

Date _____



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Breast Health History

Name _____ Age _____ Race _____

Address _____

City _____ State _____ Zip _____

Telephone: Home _____ Work _____ Fax _____

Social Security/ Facility ID Number _____

In Case of Emergency, Notify _____ Telephone _____

Employer _____

Referring Physician _____

Insurance Provider _____ ID Number _____

Personal History

Age at First Menstrual Period _____

Age at Menopause _____

Natural Surgical

Oral Contraceptives: Yes No

Type _____

Number of Years _____

Estrogen Therapy: Yes No

Type _____

Number of Years _____

Breast Cancer Personal History: Yes No

Year _____ Type _____

Age at Diagnosis _____

Surgery: Mastectomy Lumpectomy

Breast: Right Left Bilateral

Reconstruction: Yes No

Type _____

Date _____

Treatment: Chemotherapy Radiation

Hormonal None

History of Recurrence: Yes No

Date _____

Family History of Breast Cancer:

Mother Father Aunt

Daughter Son Uncle

Sister Brother

Grandmother Grandfather

Type, if known _____

Age(s) at Diagnosis _____

Number of Full Term Pregnancies _____

Age at First Pregnancy _____

Smoke: Yes No

Packs Per Week _____

Number of Years _____

Alcohol Intake:

Regular Use Occasional Use None

Medical Conditions:

Diabetes: Yes No **Insulin:** Yes No Number of Years _____

High Blood Pressure: Yes No Medication: _____ Number of Years _____

Thyroid: No Yes Hyper Hypo

Medication: _____ Number of Years _____

Heart Disease: No Yes Medication: _____ Number of Years _____

Other Cancers: Yes No Type: _____ Date: _____

Nurse/Technologist/Physician History Notes:

Mammography History

Age at First Mammogram _____ Facility _____

Date of Last Mammogram _____

Facility _____

Film on File: Yes No

Nurse/Technologist/Physician Mammography Film History Notes:

Breast Health History

	Left	Right	Treatment
Lump	<input type="checkbox"/>	<input type="checkbox"/>	_____
Pain	<input type="checkbox"/>	<input type="checkbox"/>	_____
Discharge	<input type="checkbox"/>	<input type="checkbox"/>	_____
Mastitis	<input type="checkbox"/>	<input type="checkbox"/>	_____
Abscess	<input type="checkbox"/>	<input type="checkbox"/>	_____
Naturally Inverted Nipple(s)	<input type="checkbox"/>	<input type="checkbox"/>	_____
Microcalcifications	<input type="checkbox"/>	<input type="checkbox"/>	_____
Biopsy	<input type="checkbox"/>	<input type="checkbox"/>	_____
	<input type="checkbox"/> Needle	<input type="checkbox"/> Core	<input type="checkbox"/> Incisional <input type="checkbox"/> Excisional

Date _____ Pathology _____

Reconstruction/Reduction: No Yes Date: _____ Type: _____

Other _____

Nurse/Technologist/Physician History Notes:

Breast Pain Assessment Calendar

Note: Pain Intensity, Area of Breast(s), Time of Day, Time in Cycle, Activities, Diet (especially caffeine), Medications

Name _____ Patient ID Number _____

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday



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Breast Pain Documentation

Patient Name: _____

Physician: _____

Date Chart Started: _____

Date Chart Completed: _____

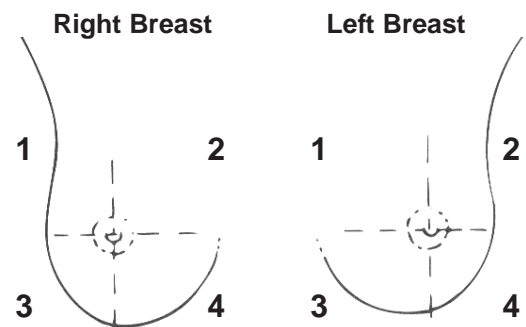
Breast Exam Date: _____

Breast Re-exam Date: _____

Each day, record your amount of breast pain on this chart. Careful recording of the pain will enable your physician to determine possible causes. Begin recording the following information on the calendar provided the day you receive this chart.

Mark the following information on your calendar:

- Chart pain on a scale, rating pain in a range from 1 (no pain) to 10 (severe pain).
- Note the area(s) in the breast where the pain occurs. See the breast diagram for numbers.
- Note time of day pain is experienced:
AM (midnight to noon),
PM (noon to midnight),
AD (all day).
- On each day pain is experienced, record unusual physical activities performed.
- Note day you begin your menstrual period and day period ends with MP1 (menstrual period day 1) and MPS (menstrual period stopped).
- Note any unusual dietary changes on days pain is experienced (more or less consumption of caffeine, etc.)
- Note any medication usage (cold pills, herbal products, prescription medications, etc.)



Example of one day's charting:

Saturday, January 1: Pain #6
Area 4 LB (left breast)
AD (all day)
Tennis
MP1 (menstrual period day 1)
1 Coffee, 2 Cokes, Herbal Tea
Cold Pills X2

**Continue to record this information for one or two months as requested by your physician.
Take the completed chart to your physician for further evaluation.**



ST. VINCENT'S BREAST HEALTH CENTER

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1800 Barrs Street
Jacksonville, Florida 32204

Breast Health Navigator — Patient Monthly Contact Record

Name _____ Month _____ Year _____

Week of _____

Week of _____

New Cancer Patients

Personal _____
Telephone _____

New Cancer Patients

Personal _____
Telephone _____

Breast Cancer Patients

Personal _____
Telephone _____

Breast Cancer Patients

Personal _____
Telephone _____

Breast Health Patients

Personal _____
Telephone _____

Breast Health Patients

Personal _____
Telephone _____

Home Visits _____

Hospital Visits _____

Educational Contacts _____

Home Visits _____

Hospital Visits _____

Educational Contacts _____

Week of _____

Week of _____

New Cancer Patients

Personal _____
Telephone _____

New Cancer Patients

Personal _____
Telephone _____

Breast Cancer Patients

Personal _____
Telephone _____

Breast Cancer Patients

Personal _____
Telephone _____

Breast Health Patients

Personal _____
Telephone _____

Breast Health Patients

Personal _____
Telephone _____

Home Visits _____

Hospital Visits _____

Educational Contacts _____

Home Visits _____

Hospital Visits _____

Educational Contacts _____

Comments

Breast Health Navigator — Patient Weekly Contact Record

Navigator _____ Week of _____

NEW Breast Cancer Patients

Name	Personal Visit	Telephone

BREAST CANCER Patients

Name	Personal Visit	Telephone

BREAST HEALTH Patients

Name	Personal Visit	Telephone



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Cancer History Assessment

How many sisters in each family:

_____ You
_____ Your Mother
_____ Your Father

How many brothers in each family:

_____ You
_____ Your Mother
_____ Your Father

Fill in this chart with your family history of any cancer.

Relative	First Name	Cancer Type	Age at Diagnosis	Comments
You				
Daughter				
Daughter				
Son				
Son				
Sister				
Sister				
Brother				
Brother				
Father				
Mother				
Aunt (Father's Side)				
Aunt (Father's Side)				
Uncle (Father's Side)				
Uncle (Father's Side)				
Aunt (Mother's Side)				
Aunt (Mother's Side)				
Uncle (Mother's Side)				
Uncle (Mother's Side)				
Grandfather (Father's Side)				
Grandmother (Father's Side)				
Grandfather (Mother's Side)				
Grandmother (Mother's Side)				
1st Cousin (Father's Side)				
1st Cousin (Father's Side)				
1st Cousin (Mother's Side)				
1st Cousin (Mother's Side)				
(Others)				



ST. VINCENT'S BREAST HEALTH CENTER

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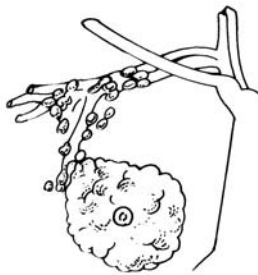
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Clinical Breast Assessment

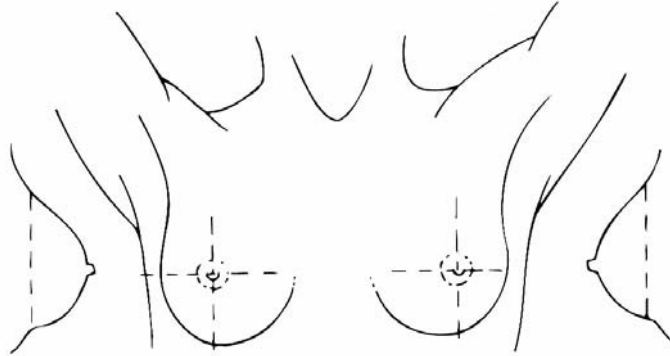
Patient Name _____

Date _____

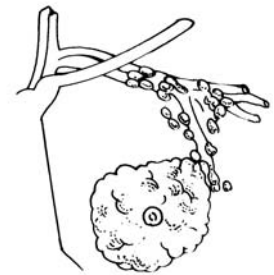
Physician/Nurse _____



**Right
Lymph Nodes**



Right Breast Left Breast



**Left
Lymph Nodes**

Breast Exam	Right	Left	Comments
Lump	<input type="checkbox"/>	<input type="checkbox"/>	_____
Thickening	<input type="checkbox"/>	<input type="checkbox"/>	_____
Dimpling	<input type="checkbox"/>	<input type="checkbox"/>	_____
Bulge	<input type="checkbox"/>	<input type="checkbox"/>	_____
Nipple Retraction	<input type="checkbox"/>	<input type="checkbox"/>	_____
Pain/Tenderness	<input type="checkbox"/>	<input type="checkbox"/>	_____
Orange Peel Skin	<input type="checkbox"/>	<input type="checkbox"/>	_____
Rash/Color Change	<input type="checkbox"/>	<input type="checkbox"/>	_____
Erythema	<input type="checkbox"/>	<input type="checkbox"/>	_____
Lymph Node	<input type="checkbox"/>	<input type="checkbox"/>	_____
Increased/Decreased Size	<input type="checkbox"/>	<input type="checkbox"/>	_____
Increased Vein Pattern	<input type="checkbox"/>	<input type="checkbox"/>	_____
Discharge	<input type="checkbox"/>	<input type="checkbox"/>	Color _____ Single/Multiple Duct _____
Other	<input type="checkbox"/>	<input type="checkbox"/>	_____

Comments: _____



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Clinical Referral Report

Patient Name _____

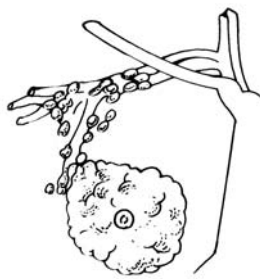
Referring Physician _____ Telephone _____

Major Clinical Problems _____

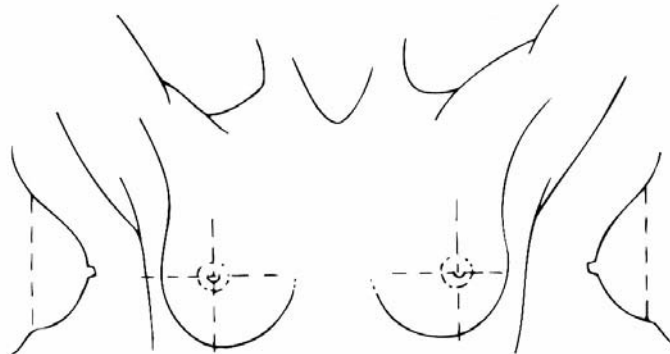
Date(s) of Patient Exam _____

Date(s) of Patient Exam _____

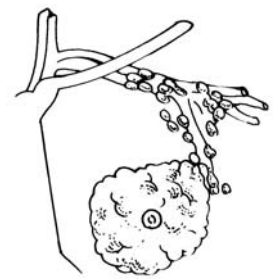
Comments _____



**Right
Lymph Nodes**



Right Breast Left Breast



**Left
Lymph Nodes**

Breast Exam	Right	Left	Comments
Lump	<input type="checkbox"/>	<input type="checkbox"/>	_____
Thickening	<input type="checkbox"/>	<input type="checkbox"/>	_____
Dimpling	<input type="checkbox"/>	<input type="checkbox"/>	_____
Bulge	<input type="checkbox"/>	<input type="checkbox"/>	_____
Nipple Retraction	<input type="checkbox"/>	<input type="checkbox"/>	_____
Pain/Tenderness	<input type="checkbox"/>	<input type="checkbox"/>	_____
Orange Peel Skin	<input type="checkbox"/>	<input type="checkbox"/>	_____
Rash/Color Change	<input type="checkbox"/>	<input type="checkbox"/>	_____
Erythema	<input type="checkbox"/>	<input type="checkbox"/>	_____
Lymph Node	<input type="checkbox"/>	<input type="checkbox"/>	_____
Increased/Decreased Size	<input type="checkbox"/>	<input type="checkbox"/>	_____
Increased Vein Pattern	<input type="checkbox"/>	<input type="checkbox"/>	_____
Discharge	<input type="checkbox"/>	<input type="checkbox"/>	Color _____ Single/Multiple Duct _____
Other	<input type="checkbox"/>	<input type="checkbox"/>	_____



Decision-Making and Support Styles

People have different ways of making important decisions. After your diagnosis of cancer, you will be talking to various staff members concerning decisions about your future health care. It is important for our staff to know your preferred method of decision-making, the level of involvement you prefer in the decisions, the amount of educational materials you find helpful, and the kind of support you desire.

Read each statement under each bold heading before deciding which to mark. Place an X in the box of the one that best describes your style under each section.

Decision Making Styles

- I would like for my physician to explain options to me, but prefer that the final decision be made by my physician from his/her expertise on the matter regardless of my opinion. I don't like a lot of medical detail, nor do I want to make decisions.
Physician decides.
- I would like for my physician to explain options to me, discuss the issues in depth with me, but prefer that they make the final decision. I want medical details and to discuss options, but the physician knows best what I need.
Physician discusses and decides.

- I would like for my physician to explain options to me, discuss the issues in depth with me, and prefer the final decision be reached together. I want medical details and to discuss options, and I want us to decide together.
Physician discusses, we decide together.
- I would like for my physician to explain options thoroughly to me and discuss the issues in depth but prefer that I make the final decision without recommendations from them. I want medical details and to discuss options, and I want to decide myself. **I make decisions.**

Educational Information

- I want only the basic information on breast cancer and recovery.
Basic Information.
- I want as much patient information on breast cancer and recovery as I can get.
Lots of patient information.
- I want as much information on breast cancer and recovery as I can get including information from textbooks, Internet sites and medical journal articles on my cancer.
Lots of patient and medical information.

Support From Staff

- I prefer a professional relationship without any additional support for the staff. **Little Support.**

- I prefer a family-like relationship with some support from the healthcare staff. **Moderate support.**

- I prefer a family-like relationship with as much support and information on support programs as I can get from all areas of the healthcare staff. **All the support available.**

Patient Name: _____

Date: _____



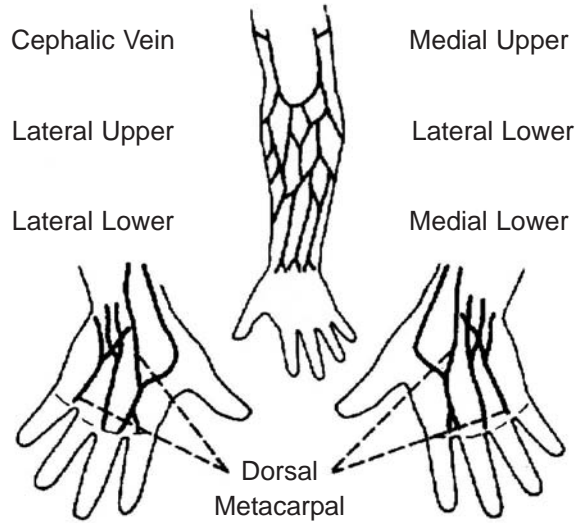
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Extravasation Diagram

(Mark size of area with different colors of ink for different dates assessed)



Patient Name: _____

Dates of Assessment: _____

Date _____

Color and Dimensions of Infiltration Site _____

Appearance of Infiltration Site _____

Date _____

Color and Dimensions of Infiltration Site _____

Appearance of Infiltration Site _____

Date _____

Color and Dimensions of Infiltration Site _____

Appearance of Infiltration Site _____

Date _____

Color and Dimensions of Infiltration Site _____

Appearance of Infiltration Site _____



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Extravasation Record

Patient Name _____

ID Number _____

Physician _____

Person Administering Drug _____

Date of Extravasation _____ Time _____

Name of Drug _____

Dose of Drug _____ Dilution Solution _____

Estimated Amount of Drug Administered Before Extravasation _____

Other Drugs Given Prior _____

Type of Needle Used _____

Condition of Veins: Soft Fragile Thin-Walled Hard Knotty Other

Location of Extravasation (describe and note on next page of assessment)

How Extravasation Was Found/Reported (nurse/patient) _____

Initial Symptoms: Pain Redness Burning Other _____

Blood Return Checked Last _____

Physician Notified _____ Time _____

Physician's Orders _____

Steps Used To Manage Extravasation _____

Photo Taken and Attached _____

Patient Teaching/Instructions _____

Planned Follow-up _____

Report Prepared By: _____

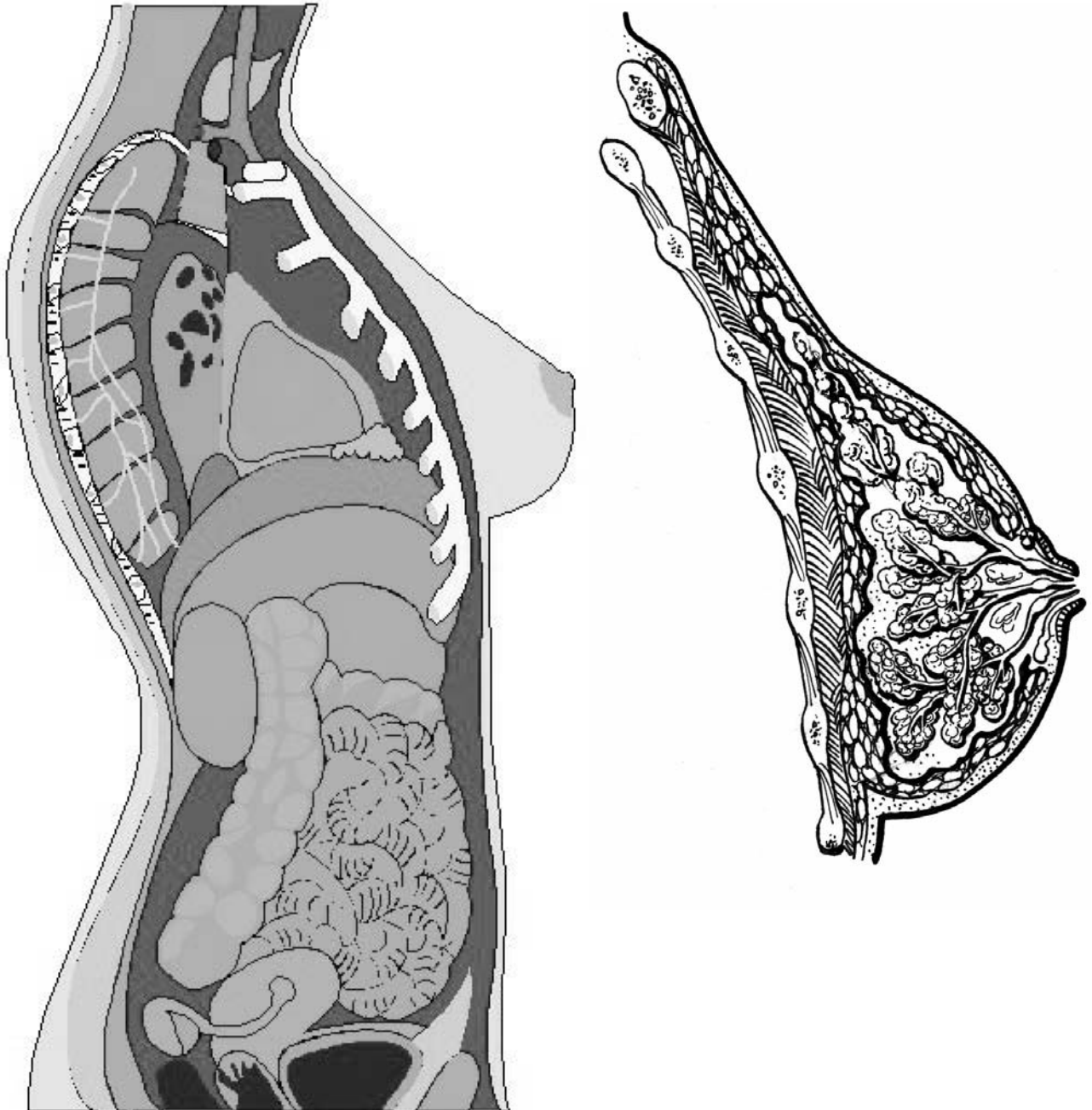


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The Female Body and Breast Diagram



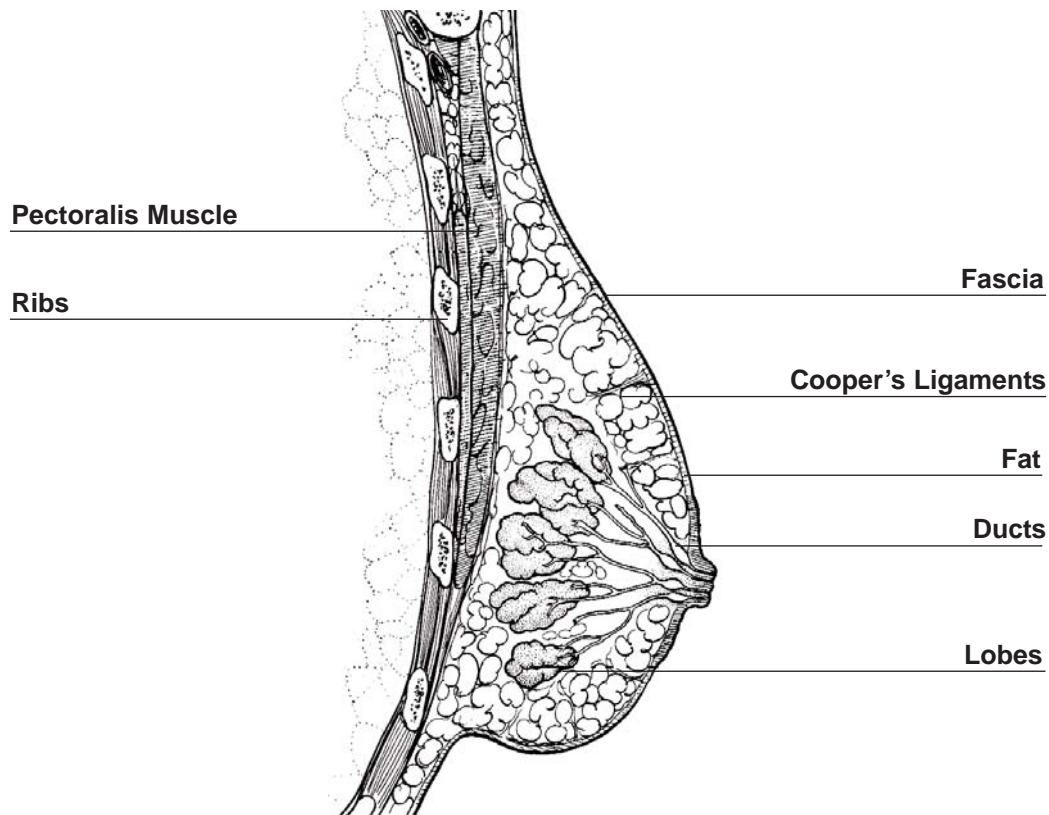
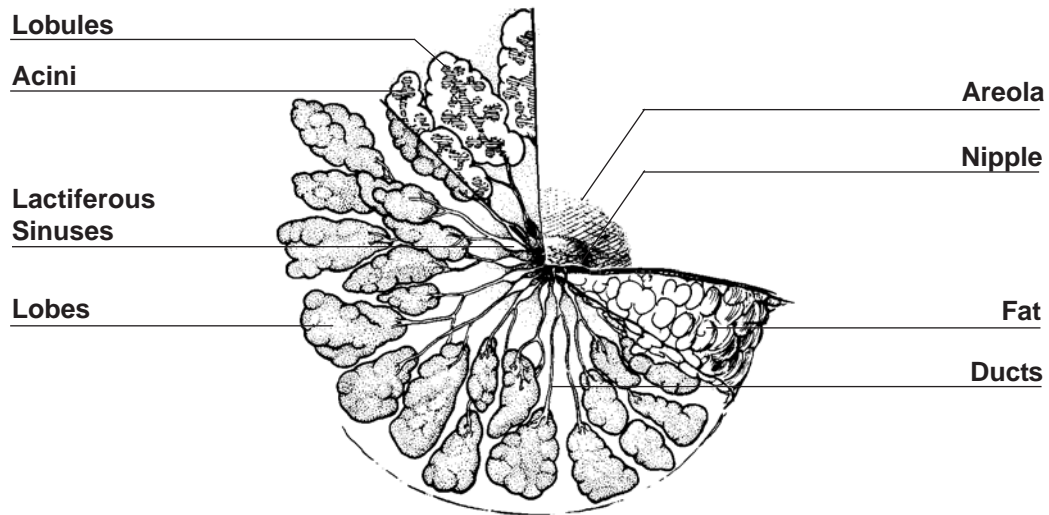


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Female Breast Diagram





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Lymphedema Assessment

Date _____

Patient Name _____

Phone Number _____

Physicians: Surgeon _____ Oncologist _____

Date of Surgery _____

Type of Surgery: Mastectomy Lumpectomy

Breast: Right Left Bilateral

Treatment: Chemotherapy Radiation Therapy

Additional History: Diabetic Heart Kidney Respiratory Thrombosis

Other _____

Allergies _____

Medications _____

Physical Assessment:

BP _____ Pulse _____ Temp _____ Respiration _____ Weight _____

Patient History of Symptoms:

Onset of Symptoms _____

Previous Treatments _____

Condition: Chronic Acute

Effectiveness of Previous Treatments _____

Notes: _____

Arm Assessment:

Pre-Surgical Arm Circumference: Left _____ Right _____

Present Arm Circumference: Left _____ Right _____

Skin: Intact Broken (description) _____

Color _____ Temperature _____

Skin Appearance: Smooth _____ Pitting Other _____

Neurological Symptoms _____

Pain (scale 1 - 10) _____ Pain Area _____

Numbness (areas): _____

Tingling Burning Other _____

Range of Motion _____

Notes _____

Patient Activity Level:

Occupation _____ Sports/Activities _____

Work/Activity Disruption Experienced: Rarely Occasional Often Constantly

Psychosocial Assessment:

Emotional Adjustment _____

Body Image Adjustment _____

Sexuality Adjustment _____

Notes _____

Patient Education Provided _____

Treatments: _____

Skin Care _____

Exercise _____

External Compressive Support _____

Manual Lymph Drainage _____

Pneumatic Compression _____

Other _____

Referrals

Follow-up _____

Notes

Nurse/Physician _____ **Date** _____



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Male Breast Health History

Name _____ Age _____ Race _____

Address _____

City _____ State _____ Zip _____

Telephone: Home _____ Work _____ Fax _____

Social Security/ Facility ID Number _____

In Case of Emergency, Notify _____ Telephone _____

Employer _____

Referring Physician _____

Insurance Provider _____ ID Number _____

Personal History

Breast Cancer Personal History: Yes No

Year _____ Type _____

Age at Diagnosis _____

Surgery: Mastectomy Lumpectomy

Breast: Right Left Bilateral

Treatment: Chemotherapy Radiation

Hormonal None

History of Recurrence: Yes No

Date _____

Family History of Breast Cancer:

Mother Father Aunt

Daughter Son Uncle

Sister Brother

Grandmother Grandfather

Type, if known _____

Age(s) at Diagnosis _____

Lifestyle:

Smoke: Yes No

Packs Per Week _____ Number of Years _____

Alcohol Intake:

Regular Use Occasional Use None

Medical History:

Have you ever had prostate or
testicular problems or disease? Yes No

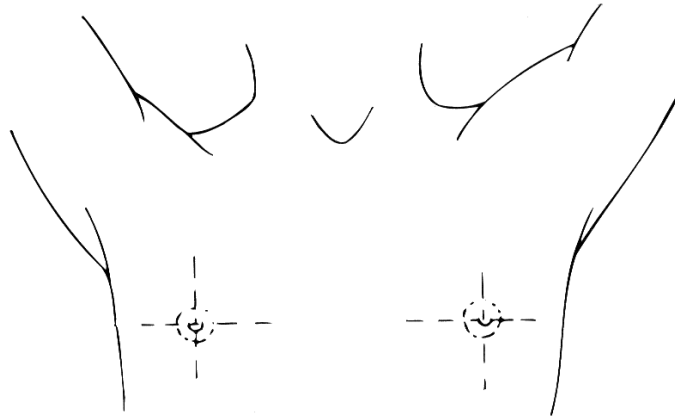
Have you ever had radiation therapy
of any type to your chest? Yes No

Current Prescription Medications: _____

Over-The-Counter Medications: _____

Breast Symptoms

	Left	Right	
Lump	<input type="checkbox"/>	<input type="checkbox"/>	Date Found: _____
Pain	<input type="checkbox"/>	<input type="checkbox"/>	Date Started: _____
Retracted Nipple	<input type="checkbox"/>	<input type="checkbox"/>	Date Noticed: _____
Nipple Discharge	<input type="checkbox"/>	<input type="checkbox"/>	Date Noticed: _____
	<input type="checkbox"/> Spontaneous <input type="checkbox"/> Squeezed		
Microcalcifications	<input type="checkbox"/>	<input type="checkbox"/>	_____
Rash/Discoloration	<input type="checkbox"/>	<input type="checkbox"/>	Date Noticed: _____



Previous Mammogram?: No Yes Date: _____ Place: _____

Exam Recommendations: Mammogram
 Ultrasound
 Biopsy
 Physician Referral: _____

Re-examine: 6 months 12 months

Healthcare Provider Signature: _____ **Date:** _____



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Mood Assessment — Post-Diagnosis

On a scale from 0 to 3 circle the number which best describes how you are feeling and functioning.

0 Not at All 1 Sometimes 2 Often 3 Most of the Time

	Not At All	Sometimes	Often	Most of the Time
I have been feeling sad or "down in the dumps."	0	1	2	3
I have felt discouraged or hopeless.	0	1	2	3
I have felt worthless lately.	0	1	2	3
I feel inadequate or inferior to others.	0	1	2	3
I blame myself for recent events.	0	1	2	3
I feel angry or resentful.	0	1	2	3
I have trouble making decisions.	0	1	2	3
I have to push myself hard to do things.	0	1	2	3
I have lost interest in my job or hobbies.	0	1	2	3
I have lost interest in my friends and family.	0	1	2	3
I have lost my appetite.	0	1	2	3
I want to overeat frequently.	0	1	2	3
I find it hard to get a good night's sleep.	0	1	2	3
I feel sleepy and tired.	0	1	2	3

	<i>Not At All</i>	<i>Sometimes</i>	<i>Often</i>	<i>Most of the Time</i>
I have lost interest in sex.	0	1	2	3
I worry about my future health	0	1	2	3
I think that life is not worth living.	0	1	2	3
I feel I would be better off dead.* * needs immediate attention of professional	0	1	2	3

Add the numbers circled for your total score. Total _____

Name _____ Date _____

For Professional Use Only

Reviewing the score:

- 0 - 5 No Depression
- 6 - 10 Borderline Depression
- 11 - 20 Mild Depression
- 21 - 30 Moderate Depression
- 31 - 45 Severe Depression

This assessment tool is to be used as a written assessment filled out by a patient. The results should be reviewed by a professional. Professional intervention should be considered if two consecutive patient reports reveal mild depression. A patient revealing moderate or severe depression should be referred to a professional psychiatrist or psychologist.



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Mood Assessment — Post-Treatment

Dear Patient:

After cancer is diagnosed, most people experience some changes in their mood. Understanding how your diagnosis is affecting your moods is essential in getting the best medical care during treatment. Please answer the following statements by **circling the number** that best describes how you felt this past week. **0** means that you have **not** experienced the feelings/moods listed; circling a **3** means that you experienced the mood most of the time.

	<i>Not At All</i>	<i>Sometimes</i>	<i>Often</i>	<i>Most of the Time</i>
1. I experience no pleasure or joy in life.	0	1	2	3
2. I am not interested in the things that once brought me pleasure.	0	1	2	3
3. I don't want to spend time with friends or family.	0	1	2	3
4. I find it hard to make simple decisions.	0	1	2	3
5. I do things slowly.	0	1	2	3
6. It takes all my energy to do simple things.	0	1	2	3
7. I feel tired.	0	1	2	3
8. I feel uptight and must keep moving.	0	1	2	3
9. I feel guilty and deserve punishment.	0	1	2	3
10. I feel like a failure.	0	1	2	3
11. I feel sad or blue.	0	1	2	3
12. I want to sleep all the time.	0	1	2	3
13. I can't sleep for long without waking up.	0	1	2	3
14. I have lost or gained weight.	0	1	2	3
15. When good things happen, I don't feel happy.	0	1	2	3
16. I feel trapped in my circumstances.	0	1	2	3
17. I feel the future is hopeless.	0	1	2	3
18. I have thought about how I might end my misery.	0	1	2	3

When completed, return to the nurse/physician. Thank you for your cooperation in helping us monitor how you are feeling. Our goal is your best health.

Patient Name _____ **Date** _____



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Pain Assessment

Patient Name _____

Age _____

Assessment Date _____

Nurse _____

Diagnosis _____

Date of Diagnosis _____

Surgery Type _____

Type of Treatment _____

Pain Scale (give number from 1 - 10)

1 No Pain – **10** Worst Pain Experienced

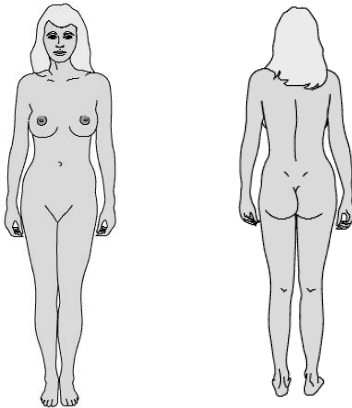
Patient Rates Present Pain # _____

Pain Worst # _____

Patient's Level Of

Acceptable Pain # _____

Pain Location: Draw arrow to location(s)



Onset, Duration, Variations

What Causes/Increases Pain?

Patient's Verbal Pain Description

(burning, stabbing, throbbing, sharp, etc.)

What Relieves Pain?



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Pain Diary

Patient Name: _____ **Date Started:** _____

Record the amount of pain you experience daily on this chart. Rate your pain on a scale from 1 to 10 with **1 = No Pain** and **10 = Worst Pain Experienced**. Note the activity you were involved in when the pain occurred. Describe the pain from the list of words on the next page. Record any medication and the amount you took. List any activity you participated in to relieve pain (meditation, music, massage, heat, others). Give this sheet(s) to your physician when you return for your appointment.

TIME	PAIN SCALE	ACTIVITY	DESCRIPTION	MEDICATION	NON-DRUG
Midnight					
1 AM					
2 AM					
3 AM					
4 AM					
5 AM					
6 AM					
7 AM					
8 AM					
9 AM					
10 AM					
11 AM					
12 NOON					
1 PM					
2 PM					
3 PM					
4 PM					
5 PM					
6 PM					
7 PM					
8 PM					
9 PM					
10 PM					
11 PM					

Pain Descriptions: Record all that apply.

Sharp	Tingling	Tender	Punishing	Piercing
Cutting	Itchy	Dull	Grueling	Tight
Flickering	Hot	Sore	Vicious	Numb
Throbbing	Burning	Achy	Killing	Drawing
Pulsating	Stinging	Splitting	Wretched	Numbing
Beating	Pinching	Sickening	Annoying	Coolness
Jumping	Pressing	Taut	Intense	Nagging
Flashing	Gnawing	Heavy	Unbearable	Nauseating
Boring	Cramping	Tiring	Troublesome	Dreadful
Drilling	Crushing	Exhausting	Blinding	Torturous
Stabbing	Pulling	Suffocating	Spreading	Spasmodic
Quivering	Scalding	Terrifying	Radiating	Fleeting
Shooting	Searing	Frightful	Penetrating	Unexplainable

Your physician is your partner to get your pain under maximum control. The goal is to relieve the pain so that you may remain active without excessive sedation. It is essential when visiting your physician to be precise in explaining your pain and the relief you experience after taking medication. Use the following guide when describing your pain to your healthcare provider.

Be specific and tell them:

1. It hurts _____ (describe where in body).
2. It radiates to _____ (describe area).
3. It feels _____ (describe with words from chart).
4. On a scale of 1 to 10 my pain averages about a _____ (pain scale #).
5. It starts _____ (when or activity) and lasts _____ (how long, chronic or intermittent).
6. When it starts I _____ (describe what you do or take).
7. After _____ (time), I have my pain reduced to _____ (give pain scale number).
8. I then feel _____ (describe the sedation you experience from sedation scale).
9. My daily quality of life from dealing with pain is _____ (select # from scale below).
10. It would be helpful if you could help me _____ (Describe what and how you would like to have your pain control improved. Example: I would like to get my pain into a range of 4 so I can sleep better or continue to work; or to have my pain controlled without feeling sleepy so I can remain mentally alert during the day.)

Pain Impact on Quality of Life

- 1 = No Change in Quality of Life
- 2 = Occasional Change in Quality of Life
- 3 = Frequent Change in Quality of Life
- 4 = Constant Change in Quality of Life

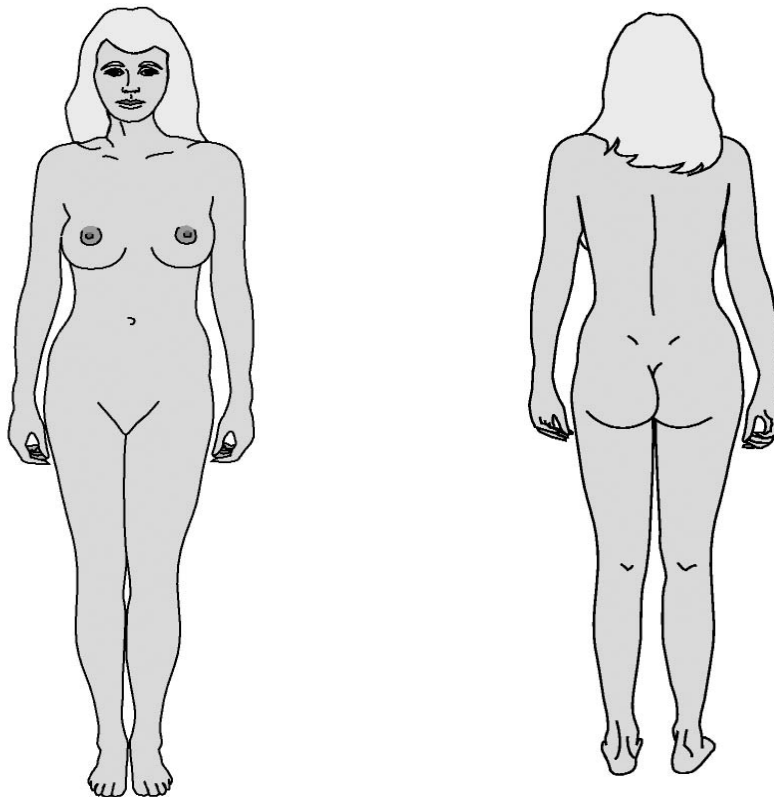
My pain level at the present time averages: _____ (fill in with a number 1 - 4)

Sedation Scale:

- 1 = Mentally Alert
- 2 = Alert but Drowsy
- 3 = Not Alert and Drowsy
- 4 = Sleep

My sedation level at the present time during the day after taking pain medication averages _____ (fill in with a number 1 - 4).

Mark the area of your pain and put an arrow(s) in the direction it radiates.





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Patient Appointment Worksheet

What I Need to Ask or Tell My Healthcare Team

Next scheduled appointment:

Date _____ Time _____

Physician _____

Questions to ask physician

Questions to ask nurse

Reminder to tell physician or nurse

It is helpful to write down questions for your nurse or physician prior to your visit.

It is also helpful to keep a list of information that needs to be relayed to your healthcare team.



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Patient Assessment

Name _____ DOB _____ Age _____ Race _____

Address _____ Zip _____ Phone _____

E-Mail _____ Occupation _____

Employer _____ Phone _____

Single Divorced Widow Married Spouse's Name _____

TREATMENTS

Date of Biopsy _____ Diagnosis _____

Date of Surgery _____ Mastectomy Lumpectomy Reconstruction _____

Surgeon _____ Primary Care Physician _____

Oncologist _____ Radiologist _____

Reconstructive Surgeon _____ Other _____

Date Chemotherapy Started _____ Drugs _____

Radiation Started _____ Number Tx _____

MEDICAL HISTORY

Medications _____

Previous Illnesses/Surgeries _____

Lump Found: Self Mammography Clinical Exam _____

SUPPORT SYSTEMS

Primary Support (Name) _____ Phone _____

Children _____

Parents _____

Religion _____ Church _____ Pastor _____

COPING/DECISION-MAKING CONCERNS

Health _____ Religion _____
Family _____ Finances _____
Work _____ Body Image _____
Self Esteem _____ Sexuality _____
Future _____ Life Philosophy/Goals _____
Hobbies _____ Other _____

PATIENT TEACHING PROVIDED

Breast Cancer _____ Surgical Options _____
Discharge _____ Chemotherapy _____
Radiation _____ Prosthesis _____
Reconstruction _____ Exercise _____
Lymphedema _____ Support Group Information _____
Sexuality _____ Other _____

REFERRALS

Reach to Recovery Visit Ordered _____ Date _____
Visitor _____ Social Work _____
Home Health _____ Chaplain _____
Nutritionist _____ Counselor _____
PT _____ Psychiatrist _____
Other _____

Date of Visits/Interventions (T = telephone, P = personal)



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Patient Information Needs

Dear Patient,

Is there any additional information or assistance you need to understand your disease and treatment? Listed below are common requests received from patients for additional information. Please review the list and place a check mark by the subjects on which you need more information. Return this sheet to the place listed at the bottom of the page. Efforts will be made to help you get the information you requested as soon as possible.

General Information:

- Type of cancer I have
- How to reach my doctor or nurse after office hours
- When I should call my doctor or nurse
- Who can answer questions about my treatment
- How I can talk to another cancer patient
- Where I can find a support group
- How to find ways to help my family
- Who I can talk to about financial help
- Who I can talk to about transportation to treatments

Diagnostic Tests or Studies:

- Blood work
- Urinalysis
- X-ray
- MRI
- CT Scan
- Bone Scan
- Ultrasound
- Liver Biopsy
- Bone Marrow Aspiration
- Other Tests:

Treatments for Cancer:

- Surgery
- Chemotherapy
- Radiation Therapy
- Hormonal Therapy
- Immunotherapy
- Stem Cell
- Bone Marrow Transplant

Side Effects of Treatment:

- Fatigue
- Diarrhea
- Constipation
- Sore Throat
- Stomach Irritation
- Hair Loss
- Appetite Loss
- Birth Control
- Sexuality Issues
- Prosthesis Selection
- Family Risk of Breast Cancer
- Dealing With Depression
- Care of Surgical Arm and Lymphedema
- Arm Exercises
- Breast Self-Exam After Breast Surgery
- Other **Information Not Listed**

Patient Name _____

Address _____

Telephone _____

Please return this sheet to:



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Questions For Your Healthcare Team

Providing answers to your questions is important to us. Because time is limited and sometimes you may forget, use this form to write down any questions you want to ask us on your next visit. Remember, there are no unimportant questions. Present this form when you arrive for your appointment. Your healthcare providers will try to answer as many questions as possible on your visit.

I Don't Understand:

Words or terms used: _____

Diagnostic tests: _____

Treatment questions: _____

Side effects of treatment questions: _____

Activities or exercise questions: _____

Diet questions: _____

Vitamins or minerals questions: _____

Complementary therapies questions: _____

Fears or anxieties questions: _____

My family wants to know: _____

Other questions: _____



Range of Motion Assessment

How you can tell if normal range of motion has been restored to your surgical arm?

If you could perform the following prior to surgery, can you now easily:

- | | |
|--|--|
| Brush and comb your hair? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Pull a tee shirt or tight-necked sweater over your head? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Close a back-fastening bra? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Completely zip a dress that has a back-long zipper? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Wash the upper part of your back in the shoulder blade area of the opposite side of surgery? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Reach over your head into a cabinet to remove an object? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Make a double bed? | <input type="checkbox"/> Yes <input type="checkbox"/> No |

Full Range of Motion Exercises

With both of your arms straight by your sides, raise both hands above your head and hold the position for several seconds. Repeat six times. This will be a difficult exercise to master and will be proof that your surgical arm has regained its full range of motion.

When you can master this exercise, congratulate yourself on the hard work you did by sticking with your dull, routine exercise program! If you have not regained your range of motion, talk with your healthcare provider about seeing a physical therapist or completing an exercise program led by a professional trained in range of motion exercises.





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Resource Needs Assessment

Dear Patient,

It is our goal to help you deal with your cancer diagnosis by assisting you in obtaining assistance in many different areas. Please fill out this form and return it to our office staff if you are experiencing problems or have needs. A social worker will review this form and determine if there is any way that we may assist you in these areas.

I am experiencing a need/problem with:

_____ 1. **Transportation for appointments and treatments**

_____ 2. **Place to stay during treatments**

- self
- family

_____ 3. **Medical expenses**

- doctor, hospital, clinic bills
- medication
- medical supplies/special foods
- household bills
- obtaining a breast prosthesis/wig

_____ 4. **Insurance**

- understanding insurance coverage
- filling out forms
- help in getting reimbursement
- keeping payments current

_____ 5. **Self-Care**

- help with child care
- help with household duties
- employment concerns
- caring for myself at home

Name _____ Date _____

Telephone _____ Physician _____



ST. VINCENT'S BREAST HEALTH CENTER

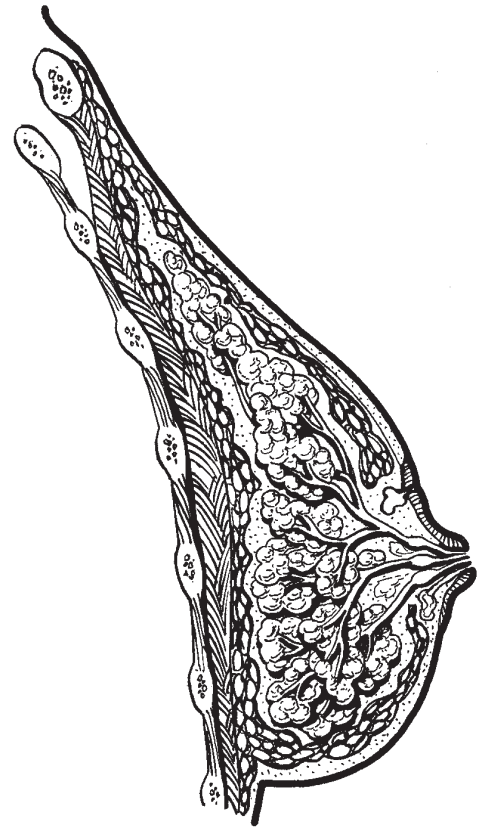
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Stages of Nodularity



Normal Breast



Pregnant Breast



Menopausal Breast



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Support Needs Assessment

Dear Patient,

We want to provide you with information and support to help you learn about your disease, treatment, and resources for recovery. Listed below are educational information and referral sources of support that we can provide for you. Please check the information or support you would like to receive.

Educational Information:

- | | |
|--|---|
| <input type="checkbox"/> Breast Cancer | <input type="checkbox"/> Reconstruction |
| <input type="checkbox"/> Surgery Options | <input type="checkbox"/> Hormonal Therapy |
| <input type="checkbox"/> Chemotherapy—Managing Side Effects | <input type="checkbox"/> Mammography |
| <input type="checkbox"/> Radiation Therapy | <input type="checkbox"/> Breast Self-exam |
| <input type="checkbox"/> Radiation Therapy—Managing Side Effects | |
| <input type="checkbox"/> Other | |

Support Information:

- | | |
|---|--|
| <input type="checkbox"/> Social Work | <input type="checkbox"/> Physical Therapy |
| <input type="checkbox"/> Chaplain | <input type="checkbox"/> Exercise Classes |
| <input type="checkbox"/> Pastoral Counseling | <input type="checkbox"/> Support Groups |
| <input type="checkbox"/> Individual Counseling | <input type="checkbox"/> Financial Counseling |
| <input type="checkbox"/> Family Counseling | <input type="checkbox"/> Insurance Assistance |
| <input type="checkbox"/> Home Health Services | <input type="checkbox"/> Bereavement/Grief Group |
| <input type="checkbox"/> Nutritional Counseling | |
| <input type="checkbox"/> Other | |

Personal questions I would like to discuss with:

Physician, concerning _____

Nurse, concerning _____

Other needs not listed _____

If you need any assistance not listed, write in your need or ask one of our staff members for help. When completed, return this form to a staff member.



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Treatment Side Effects Calendar Record

How you feel during treatment is important to us. You can help us learn symptoms you are experiencing after your treatment by filling out the following chart. Bring the chart when you come to your next appointment. If you experience any excessive discomfort with a symptom, please contact our office and report the problem.

Please rank your reactions to treatments on a scale from 0 to 5.

(0= No Symptoms, 5= Severe Symptoms)

No Symptoms 0 1 2 3 4 5 Severe Symptoms

Fever: Record highest degree **Vomiting or Diarrhea:** Record number of times per day

WEEK 1

Date Started: _____

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Fatigue							
Nausea							
Vomiting							
Fever							
Constipation							
Diarrhea							
Insomnia							
Hair Loss							
Hot Flashes							
Nervousness							
Night Sweats							
Other Symptoms							

Please rank your reactions to treatments on a scale from 0 to 5.

(0= No Symptoms, 5= Severe Symptoms)

No Symptoms 0 1 2 3 4 5 Severe Symptoms

Fever: Record highest degree **Vomiting or Diarrhea:** Record number of times per day

WEEK 2

Date Started: _____

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Fatigue							
Nausea							
Vomiting							
Fever							
Constipation							
Diarrhea							
Insomnia							
Hair Loss							
Hot Flashes							
Nervousness							
Night Sweats							
Other Symptoms							

WEEK 3

Date Started: _____

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Fatigue							
Nausea							
Vomiting							
Fever							
Constipation							
Diarrhea							
Insomnia							
Hair Loss							
Hot Flashes							
Nervousness							
Night Sweats							
Other Symptoms							

Please rank your reactions to treatments on a scale from 0 to 5.

(0= No Symptoms, 5= Severe Symptoms)

No Symptoms 0 1 2 3 4 5 Severe Symptoms

Fever: Record highest degree Vomiting or Diarrhea: Record number of times per day

WEEK 4

Date Started: _____

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Fatigue							
Nausea							
Vomiting							
Fever							
Constipation							
Diarrhea							
Insomnia							
Hair Loss							
Hot Flashes							
Nervousness							
Night Sweats							
Other Symptoms							

Patient Name: _____



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Vital Signs Record

Patient's Name _____

Patient ID Number _____

Date _____

Vital Signs	Time	Blood Pressure	Temp.	Pulse	Respirations	Comments
Baseline						
15 min.						
30 min.						
1 hour						
1 1/2 hours						
2 hours						
2 1/2 hours						
3 hours						
3 1/2 hours						
4 hours						
Post Transfusion						

Administering Nurse



DIAGNOSTIC PROCEDURES

DIAGNOSTIC PROCEDURES



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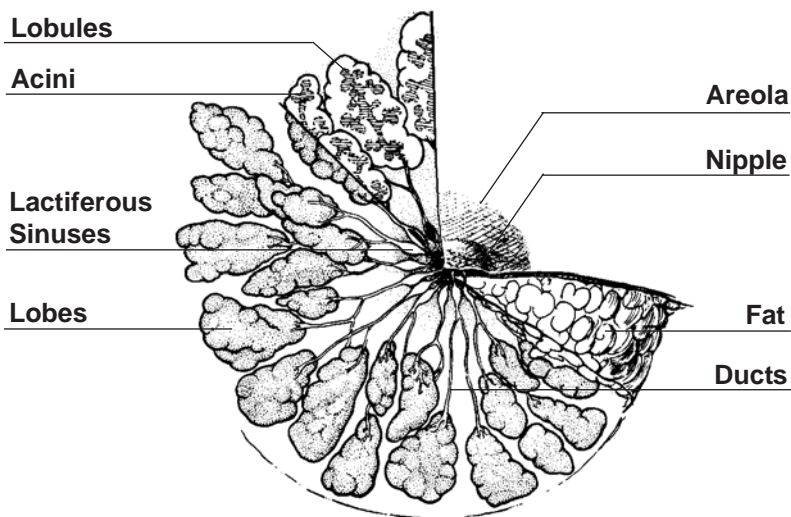
Ductal Lavage

Ductal lavage is currently an experimental procedure intended to be used for high-risk women in conjunction with mammography to detect very early cancers in the ducts. It is not intended as a general screening for all women. This new surveillance procedure is particularly helpful in young women with dense breasts whose internal structures are hard to visualize with mammography. It is projected that this technique may be able to detect early changes in the duct's cells and could eventually identify pre-malignant conditions in high-risk women.

Nearly all breast cancers start in the milk ducts. Cancers contained in the milk ducts are called in situ cancers or ductal carcinoma in situ. Mammography has the ability to detect these in situ cancers once they develop microcalcifications (small calcium deposits). However, ductal lavage procedures may make it possible to detect these cancerous cells before they develop microcalcifications visible on mammography.

Ductal lavage involves flushing the breast milk ducts to dislodge cells lining the ducts. The cells and fluid are sent to a cytopathologist (physician who specializes in study of cells) for analysis. The procedure is very similar to the Pap smear test in which cells are removed from the cervix and examined under a microscope to detect early changes that may lead to cervical cancer. If the ductal lavage cytology report reveals an early cancer or a pre-malignant disease, treatment options may include anti-cancer drugs, removing the identified diseased duct, or frequent monitoring for changes.

Ductal lavage is only offered in select centers and is still being investigated as to its effectiveness.



The breast has six to eight openings on the nipple that are connected to the ductal system of the breast. Each ductal system and nipple opening is independent and does not connect to another system.

Ductal Lavage Procedure:

- The duct's openings are discovered with gentle suctioning using a suction cup. An opening will produce fluid when suctioned.
- An anesthetic cream is then applied to the nipple to deaden it.
- A small catheter (tube) is inserted into the opening of ducts that produce fluid.
- Salt water is then squirted into the duct and washed out.
- Sample fluid is obtained.
- Fluid is sent to a cytopathologist for analysis.
- Cytology report is sent to physician identifying types of cells found in fluid.

Patients report that the procedure is not as uncomfortable as a mammogram. If the cells are pre-malignant or malignant, the patient is counseled about further testing and treatment options. An abnormal finding may also be tested with ductography (filling the duct with dye followed by an x-ray of the duct), MRI, or biopsy. Treatment options for premalignant disease may include increased surveillance, or tamoxifen or other anti-hormonal drugs. Malignant disease treatment may include either lumpectomy or mastectomy surgery.



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Galactography

Ductography or Contrast-Assisted Mammography

Galactography, also called ductography or contrast-assisted mammography, is the injection of a contrast material into the ducts of the breast to observe the internal structure of the ducts.

Each nipple has five to seven duct openings. If a discharge comes from one or possibly several ducts of the nipple, a radiologist can identify the duct and inject it with a small catheter of a radiopaque (can be seen on mammography) substance. The substance fills the duct and outlines the internal structures making them visible on a mammogram. Upon examining the mammogram, the radiologist can interpret the way the substance fills the ducts to determine if there is anything in them that could be causing the discharge. The mammography film can identify areas of blockage, small growths in the ducts or other irregularities. If an abnormality is found that needs surgical removal, the duct can then be filled with a dye to mark the site.

Galactography is performed by a radiologist and technologists in a mammography suite or breast center. There is no preparation; however, do not squeeze your nipples for several days before the procedure. It is important that the physician be able to correctly identify the discharging duct(s) for the procedure. You or the physician and/or technologist will massage the breast to promote the discharge. When the duct(s) is identified, the catheter will be inserted. The insertion of the catheter into the duct is not painful but slightly uncomfortable. You will lie flat on your back for the insertion of the catheter and will then be moved to the mammography unit for the rest of the exam.

After the exam is completed, you will have a small bandage or nursing pad placed over your nipple to absorb the contrast material as it drains from your nipple.



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Core Needle Biopsy

Other terms used to describe:

Tru-cut® needle biopsy
Large needle biopsy
Percutaneous biopsy

Definition of terms:

- Antiseptic** – An agent to remove bacteria and other microorganisms.
- Anesthetic** – Medication that causes loss of sensation for pain; may be given locally or generally.
- Biopsy** – Procedure to remove cells or tissues for study by a pathologist.
- Benign** – Not cancerous; no threat to the body.
- Core** – The center of a structure or lump.
- Hematoma** – An accumulation of blood under the skin caused by bleeding.
- Malignant** – Cancerous; a threat to the body.
- Pathology** – The study of disease processes and consequences.
- Percutaneous** – To perform through the skin.

If a lump has been found through examination, mammography, or ultrasound, a core needle biopsy may be used to diagnose the abnormality. The needle has a large center that removes a core of tissue from the lump. Core biopsies may be used with ultrasound or stereotactic equipment to guide the physician to the suspicious area. The procedure is performed in a breast center or clinic

The skin where the needle will be inserted is cleansed with an antiseptic to destroy bacteria. The area is then numbed by injecting a very small needle containing an anesthetic agent. The physician locates the lump and stabilizes it to prevent movement as the core needle is inserted. Since the needle is large, you will feel pressure as the physician inserts the instrument. The needle removes a core of tissue that is sent to the pathology lab for evaluation. The pathologist informs your physician of the results of the biopsy, whether it is benign (not cancerous) or malignant (cancerous). Ask your physician when and how you can expect to receive the biopsy results.

The procedure takes about 15 minutes. When completed, a small bandage will be placed on your breast and you can return to your normal activities. You may shower the same day as your biopsy.

If a hematoma (accumulation of fresh blood appearing as a red lump under the skin) forms from the rupture of a small vessel during the biopsy, inform your physician. This area may later show up on mammography as a change in your breast tissue. Infection is a rare occurrence with core biopsy.

Biopsy Scheduled at (facility)

Location _____

Date _____ **Time** _____

Physician _____

Special Instructions _____



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EnCapsule Biopsy

The Rubicor® EnCapsule breast biopsy is a new procedure that removes a lesion found in your breast in one piece. This minimally invasive biopsy is designed to take a single sample of the lesion in a matter of seconds. The physician makes one small nick in your breast and inserts the Rubicor® breast biopsy needle. The advantage of this type of biopsy is that it removes a larger sample of the lesion instead of multiple cores (strips) of tissue like some other biopsy methods. The specimen is enclosed in a small bag-like container. The larger biopsy sample gives a better representation of the lesion and surrounding breast tissue, helping the pathologist make a more definitive assessment.



Prior to Biopsy:

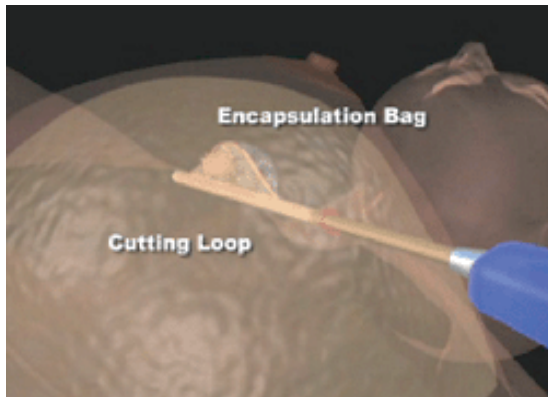
- Inform your physician of any type of prescription medication, aspirin-containing medication, Coumadin or herbal products you are presently taking.

Day of Biopsy:

- The biopsy is performed in a physician's office.

- Allow one to two hours at the physician's office for the entire procedure.
- Wear a comfortable two-piece outfit for the procedure.
- Your physician will find the lesion location in your breast using ultrasound or radiographic guidance.
- Numbing medication will be injected into the skin and breast.
- Once the area is numb, a small surgical nick will be made in the skin of your breast to allow insertion of the biopsy device. The biopsy probe is advanced to the lesion as the physician views the location of the biopsy probe on a screen.
- When the physician is assured that the device is in the right place, the EnCapsule loop and bag assembly is deployed to completely encircle the target. The handle is rotated, simultaneously cutting and collecting the breast biopsy specimen.
- During the procedure you may feel pressure, a tingling sensation or a slight burning sensation. Tell your physician if you experience pain.
- A small radiographic clip is placed in the biopsy cavity to identify the spot for future procedures.
- The biopsy probe is removed from your breast and the biopsy specimen is sent to a pathology lab.

- The surgical nick in your skin is closed with an adhesive strip or with a small adhesive bandage.
- Unless your healthcare provider instructs you otherwise, you can return to normal, non-strenuous activities the same day.



Normal Changes after a Biopsy:

- The area may be slightly sore for several days.
- You may have a mild, aching pain that can be controlled with over-the-counter medications.
- You may have a yellowish draining from the fluid in the biopsy cavity; this is normal.
- Discoloration of the breast (bluish turning to yellowish tones) may occur.

Contact Physician:

- If you have fever over 100.5.
- If you have increasing redness around incision site.
- If pain increases in the area and is not controlled by over-the-counter pain medication.
- If you have bright red bleeding from the site.

Biopsy Scheduled at (facility)

Location _____

Date _____ **Time** _____

Physician _____

Special Instructions _____



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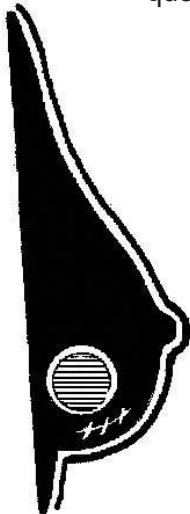
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Excisional Biopsy

Definition of terms:

- Anesthetic**— Medication that produces loss of sensation for pain; may be local or general.
- Antiseptic**— An agent to remove bacteria and other microorganisms; to disinfect.
- Biopsy**— The removal of tissue in order to study the makeup of cells.
- Benign**— Not cancerous; no threat to the body.
- Excisional**— Process of cutting out of the body.
- Hematoma**— An accumulation of blood under the tissues.
- Malignant**— Cancerous, a threat to the body.
- Pathology**— The study of disease process and consequences.



If a physician can feel a suspicious lump, it may be surgically removed from the body with an excisional biopsy. The procedure is performed in an operating room on an out-patient basis.

Several days prior to the biopsy, you will be required to have lab work performed according to your doctor's orders. An assessment and medical history will be taken to determine any conditions such as allergies or previous surgeries. Remember to write down the names of any prescription medications or herbal medications that you take on a regular basis for this assessment interview.

On the day of the surgery, you will report to the surgical unit. Local anesthetic (in the breast only) or general anesthetic (put to sleep) will be administered. The breast will be cleansed with an antiseptic cleanser to destroy bacteria on the skin. The surgeon will cut through the skin to the lump and remove the entire lump and sometimes an area of tissue around the lump referred to as the margins. Several stitches will close the incision area. You will be taken to the recovery area where you will be monitored until your vital signs are normal, you are awake, and are experiencing no vomiting, bleeding, or excessive pain. You will then be discharged.

A small bandage will cover the incision. You will be given discharge instructions on how to care for the wound. Ask your healthcare provider when you may get the incision area wet and when you can return to normal activities. A return appointment will be made with your physician to have your stitches removed and to see how the wound is healing. The biopsy tissue will be sent to the pathology lab and the results, stating whether the tissue was benign (not cancerous) or malignant (cancerous) will be made available to your physician. Ask when and how you will be informed of the results of the biopsy report.

There is potential for infection after an excisional biopsy because of the cut through the skin. Follow the instructions provided by your physician on how to care for the wound and how to change the bandage. Be sure to keep the bandage dry. Check the area for signs of increasing redness, or a drainage that has a dark yellow-greenish tint or a foul-smelling odor. Report either new, red bleeding if it should occur, or the formation of a hematoma which appears as a dark, reddened, firm area under the skin. Your physician will need to record the hematoma formation on your medical chart because this can appear as a change on a future mammogram.

Biopsy Scheduled at (facility)

Location _____

Date _____ **Time** _____

Physician _____

Special Instructions _____



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Fine Needle Aspiration

Other terms used to describe fine needle aspiration (FNA):

- fine needle aspiration cytology
- fine needle aspiration biopsy
- fine needle biopsy
- needle aspiration biopsy (NAB)
- needle biopsy
- needle aspiration cytology
- aspiration biopsy
- aspiration cytology
- aspiration biopsy cytology
- thin needle aspiration biopsy

Definition of terms:

- Anesthetic**— Medication that produces loss of sensation for pain. May be local or general.
- Antiseptic**— An agent to remove bacteria and other microorganisms; to disinfect.
- Aspiration**— The process of suctioning cells or fluid from an area through a needle into an empty syringe.
- Benign**— Not cancerous; no threat to the body.
- Biopsy**— The removal of tissue in order to study the cells' makeup.
- Cyst**— A fluid-filled sac.
- Fine Needle**— Refers to use of an 18-22 gauge needle (size of most injection needles).

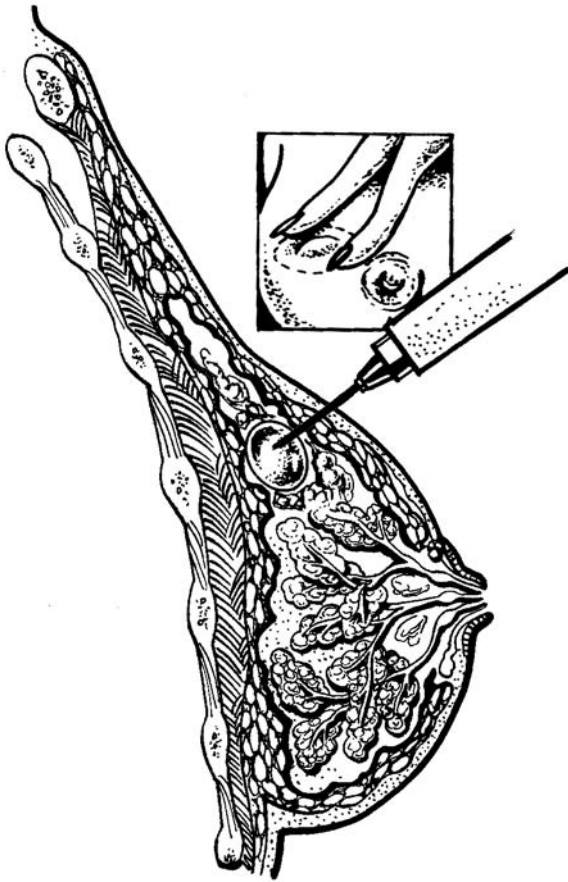
Malignant— Cancerous; a threat to the body.

Pathology— The study of disease processes and consequences.

Fine needle aspiration is a biopsy procedure that is performed on lumps that can be felt or identified on mammography. If the physician can feel the area, this procedure can be performed in an outpatient setting.

The area is cleansed with an antiseptic solution to destroy surface bacteria. The area may or may not be numbed with an anesthetic. Some physicians prefer not to use an anesthetic because the amount of pain is minimal, similar to having your blood withdrawn. Others will use a very small needle to deaden the tissue in the biopsy area. Your physician will inform you of the preferred method prior to the procedure. The physician inserts a needle with an empty syringe into the lump. The needle is gently and slowly moved back and forth in the mass while the syringe pulls out cells or fluid to be examined.

If the lump is determined to be a cyst, fluid ranging from light yellow to a dark yellow-greenish color may be withdrawn. This fluid is characteristic of normal breast fluid. Occasionally, there may be signs of old blood (resembling chocolate milk) or fresh blood (which will be bright red). Your physician will discuss with you any further tests or follow-up evaluations if this occurs. After the cyst is aspirated, you should not be able to feel the lump.



Biopsy Scheduled at (facility)

Location _____

Date _____ **Time** _____

Physician _____

Special Instructions _____

Cells removed from a solid lump are sent to the pathology lab for study. The pathology report will be sent to your physician stating if the results are malignant or benign. Ask when the results of this report will be available to you and how you will be notified, whether by letter, by phone, or in person.

The entire procedure will take five to ten minutes. A bandage will be placed on your breast and regular activities can be resumed. You may remove the bandage and shower the same day. Occasionally, a small hematoma (collection of fresh blood appearing as a red lump under the skin) may occur if a small vessel is ruptured by the insertion of the needle. Tell your physician if this occurs so it can be recorded on your medical chart. Where the hematoma occurred may later show up on mammography as a change in your breast tissue.



Fine Needle Aspiration (FNA) of a Cyst

Other terms used to describe fine needle aspiration (FNA):

- fine needle aspiration cytology
- fine needle aspiration biopsy
- fine needle biopsy
- needle aspiration biopsy (NAB)
- needle biopsy
- needle aspiration cytology
- aspiration biopsy
- aspiration cytology
- aspiration biopsy cytology
- thin needle aspiration biopsy

Definition of terms:

- Anesthetic**— Medication that produces loss of sensation for pain. May be local or general.
- Antiseptic**— An agent to remove bacteria and other microorganisms; to disinfect.
- Aspiration**— The process of suctioning cells or fluid from an area through a needle into an empty syringe.
- Benign**— Not cancerous; no threat to the body.
- Biopsy**— The removal of tissue in order to study the cells' makeup.
- Cyst**— Sac formation filled with fluid or cells.

Fine Needle— Refers to an 18-22 gauge needle (size of most injection needles).

Hematoma— An accumulation of blood under the tissues from bleeding.

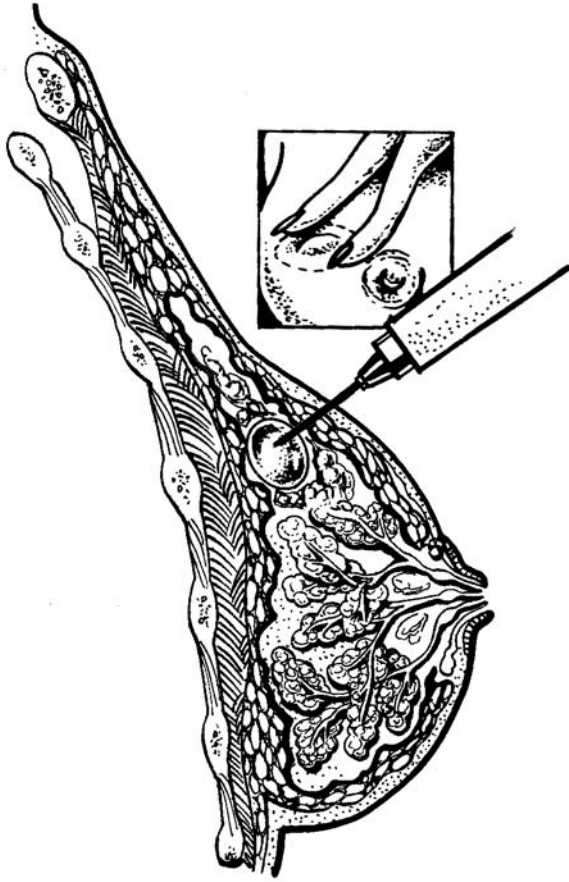
Malignant— Cancerous; a threat to the body.

Pathology— The study of disease processes and consequences.

Fine needle aspiration is a biopsy procedure performed on lumps that can be felt or identified on mammography or ultrasound. If the area can be felt, this procedure can be performed as the physician stabilizes the area with his hand for the procedure. If the area cannot be felt, the procedure may be performed using ultrasound or stereotactic guidance.

The area is cleansed with an antiseptic solution. The area may or may not be numbed with an anesthetic. Some physicians prefer not to use an anesthetic because the pain is minimal. It is similar to having your blood withdrawn. Others use a very small needle to deaden the tissue in the biopsy area. Your physician will inform you of the preferred method prior to the procedure.

The physician inserts the needle with an empty syringe into the lump. The needle is gently and slowly moved back and forth in the mass while the syringe is pulling out cells or fluid to remove a sample. The procedure is not painful. There is no scar left on your breast.



If the lump is a cyst, fluid ranging from light yellow to dark yellow-greenish may be withdrawn. These are normal breast fluid colors. Occasionally, there may be signs of old blood (resembling chocolate milk) or fresh blood (which will be bright red). Your physician will discuss with you any further tests or follow-up evaluations if this occurs. After an aspiration, you should not be able to feel the lump if it is a cyst.

Cyst fluid is usually not sent for cytology unless it contains blood. The cells removed from a solid lump are sent to the pathology lab for study. The pathology report is sent to your physician stating if the results are malignant or benign. Ask when the results of this report will be available to you and how you will be notified, whether by letter, by phone or in person.

The entire procedure takes five to ten minutes. A bandage is placed on your breast and regular activities can be resumed. You may remove the bandage and shower the same day. Occasionally, a small hematoma (collection of fresh blood appearing as a red lump under the skin) may occur if a small vessel is ruptured by the insertion of the needle. Tell your physician if this occurs so it can be recorded.



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Incisional Biopsy

Definition of terms:

- Anesthetic**— Medication that produces loss of sensation for pain. May be local or general.
- Biopsy**— Procedure to remove cells or tissues for study by a pathologist.
- Benign**— Not cancerous; no threat to the body.
- Hematoma**— An accumulation of blood under the tissues from bleeding.
- Incisional**— A cut made with a knife into the body.
- Malignant**— Cancerous; a threat to the body.

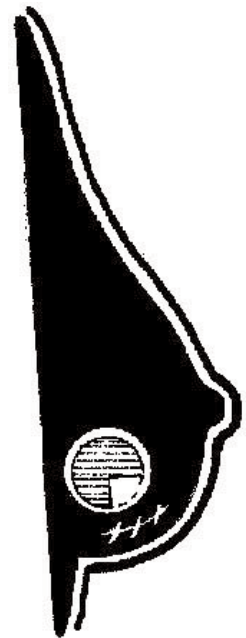
If a surgeon can feel a suspicious lump, an incisional biopsy may be performed (using a surgical knife in an operating room) to remove a portion of the suspicious lump, rather than the entire lump. An incisional biopsy is usually performed when the lump is large and a preliminary diagnosis is needed. This is routinely performed in a clinic or in a hospital on an outpatient basis.

Several days prior to the biopsy, you will be required to have lab work performed according to your doctor's orders. An assessment and medical history will be taken to determine any conditions such as allergies and previous surgeries. Remember to write down the names of any medications or herbal medications that you take on a regular basis to report during your assessment.

On the day of the surgery you will report to the surgical unit. Local anesthetic (in the breast only) or general anesthetic (putting you to sleep) will be administered. The breast will be cleansed with an antiseptic to destroy bacteria on the skin. The surgeon will cut through the skin to the area of the lump and remove a small portion of the lump. Several stitches will close the area. You will be taken to an outpatient recovery room where you will be monitored until your vital signs are normal. You will be discharged if you are not experiencing vomiting, bleeding, or excessive pain. A small bandage will cover the incision and you will be given discharge instructions on how to care for the wound.

Ask your doctor when you may get the area wet and when you may return to your normal activities. A return appointment with your physician will be made to have the stitches removed and to see how the wound is healing.

The biopsy tissue will be sent to the pathology lab and the results, stating whether the tissue is benign (not cancer) or malignant (cancerous), will be made available to your physician. Ask your physician when and how you will be informed of the results of the biopsy report.



There is potential for infection after an incisional biopsy because of the cut through the skin. Follow the instructions provided by your physician on how to care for the wound. Be sure to keep the bandage dry. Check the area for signs of increasing redness or a drainage that has a dark yellow-greenish tint or has a foul-smelling odor. Report any new, red bleeding if it should occur, or the formation of a hematoma, which will appear as a dark-red, firm area under the skin. Your physician will need to record the hematoma information on your medical chart because this can appear as a change on a future mammogram.

Biopsy Scheduled at (facility)

Location _____

Date _____ **Time** _____

Physician _____

Special Instructions _____



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Intact™ Biopsy

The Intact™ breast biopsy is a new minimally invasive procedure that removes abnormal tissue. This biopsy is designed to take a single sample of the lesion in a matter of seconds. The physician makes one small nick in your breast and inserts the Intact™ biopsy needle. The advantage of this type of biopsy is that it removes a larger sample of the lesion instead of multiple cores (strips) of tissue like some other biopsy methods. The larger biopsy sample gives a better representation of the lesion and surrounding breast tissue, helping the pathologist make a more definitive decision.

Prior to Biopsy:

- Inform your physician of any type of prescription medication, aspirin-containing medication, Coumadin or herbal products you are presently taking.
- The biopsy is performed in a physician's office.
- Allow from one to two hours for the procedure.

Day of Biopsy:

- Wear a comfortable two-piece outfit for the procedure.
- Your physician will locate the lesion location in your breast using ultrasound or radiographic guidance.
- Numbing medication will be injected into the skin and breast.
- After the area is numb, a small surgical nick will be made in the skin of your

breast to allow insertion of the biopsy device. The biopsy probe is advanced to the lesion as the physician views the location of the biopsy probe on a screen.

- When the physician is assured that the device is in the right place, a special cutting tool is activated that cuts the lesion from the surrounding breast tissue.
- During the procedure you may feel pressure, a tingling sensation or a slight burning sensation. Tell your physician if you experience pain.
- The biopsy probe is removed from your breast along with the lesion, and the biopsy specimen is sent to a pathology lab.
- A small radiographic clip is placed in the biopsy cavity to identify the spot for future procedures.
- The surgical nick in your skin is closed with an adhesive strip or with a small adhesive bandage.
- Unless your healthcare provider instructs you otherwise, you can return to normal, non-strenuous activities the same day.

Normal Changes after a Biopsy:

- The area may be slightly sore for several days.
- You may have a mild, aching pain that can be controlled with over-the-counter medications.

- You may have a yellowish draining from the fluid in the biopsy cavity; this is normal.
- Discoloration of the breast (bluish turning to yellowish tones) may occur.

Contact Physician:

- If you have fever over 100.5.
- If you have increasing redness around incision site.
- If pain increases in the area and is not controlled by over-the-counter pain medication.
- If you have bright red bleeding from the site.

Biopsy Scheduled at (facility)

Location _____

Date _____ **Time** _____

Physician _____

Special Instructions _____

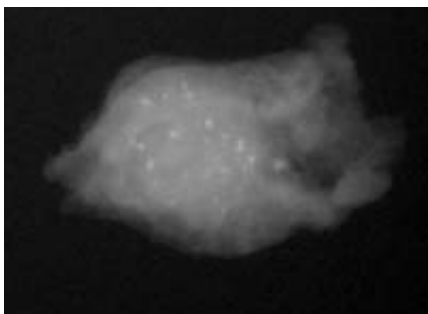


Intact™ samples



Other type of biopsy samples

Sample of two sizes (10 mm and 15 mm) of biopsies from Intact™ compared to cores from another type of biopsy. Your physician will determine if you need a 10 mm or a 15 mm biopsy specimen.



Specimen with microcalcifications as seen on mammogram



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Large Core Biopsy — ABBI®

A large core breast biopsy (ABBI®, a brand name that stands for **A**dvanced **B**reast **B**iopsy **I**nstrumentation) is a surgical biopsy technique that can remove an entire breast lesion (abnormality) using guided imagery. The ABBI biopsy procedure tends to be less invasive than the traditional open surgical biopsy.

The patient lies face down on a biopsy table with the breast hanging through an opening of the table. Stereotactic mammography imaging equipment locates the lesion for the physician from two different angles using computers. The physician then uses the computer coordinates to guide the large core-sampling device to the correct area of the breast. The large core biopsy (ABBI®) can remove 5 millimeters (mm) to 20 mm of breast tissue; often the size of the entire lesion.

Preparing for a Large Core Biopsy

- Inform your healthcare provider if you are unable to lie on your stomach for approximately an hour.
- Avoid using aspirin, ibuprofen, or any other medication that prolongs bleeding for five to seven days prior to the biopsy.
- If using blood thinners, ask the physicians if you should discontinue use of these medications prior to the biopsy.
- Wear a comfortable two-piece garment for the biopsy procedure.
- Do not wear talcum powder, deodorant, lotion, or perfume under your arms or on your breasts on the day of the biopsy.

How a Large Core Biopsy is Performed

- The breast is first cleaned with an antiseptic.
- The breast is then compressed and injected with a local anesthetic to numb.
- A wire is inserted into the breast lesion guided by stereotactic mammography.
- A narrow tube with a cutting device (the large core needle) is inserted into the breast, using the wire as a guide to the affected area.
- The core specimen of the breast tissue is then removed with a looped wire.
- The abnormality is taken to the pathology laboratory for diagnosis.
- Additional mammograms of the breast and the removed specimen are performed after the procedure.
- Stitches are usually required due to the large size of biopsy.

Large core biopsy (ABBI®) takes approximately one hour, followed by several hours of recovery. Tylenol or other pain relievers may be taken for discomfort if needed. Some bruising of the breast area is expected during the first five to seven days after the large core biopsy (or longer if initial bleeding during biopsy was greater than usual.)

Questions to Ask Upon Discharge:

- What activities can I perform?
- How and when do I change my dressing?
- When can I shower or take a tub bath?
- When do I need to return for a follow-up appointment?
- When will the final results of the biopsy report be available and when will I be told of the results?

Contact your healthcare provider if you experience any excessive swelling, bleeding, drainage, redness, or heat in the area of the biopsy or breast.



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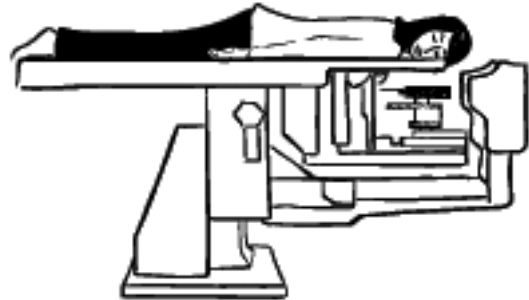
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Mammotome® Breast Biopsy

A Mammotome® breast biopsy refers to the type of biopsy probe used to obtain tissue samples for diagnosis. This procedure is performed in a breast center or in a physician's office. The biopsy requires only a 1/4" skin incision in the breast for insertion of the biopsy probe. Mammotome® Breast Biopsy System is a minimally invasive biopsy procedure that uses stereotactic or ultrasound images to guide the biopsy probe. Mammotome® biopsy can be performed in less than one hour under a local anesthetic, minimizing discomfort.

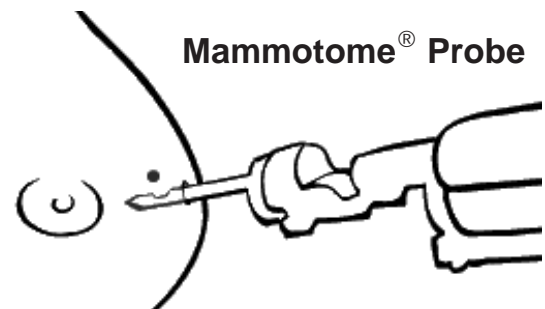
The advantage of the Mammotome® biopsy is that it is capable of sampling a variety of breast abnormalities such as microcalcifications, asymmetric (unusual shaped) densities (thickenings), solid masses, or nodules. It can obtain multiple tissue samples with one insertion where other methods require multiple insertions of the biopsy device.

If the procedure is being guided with ultrasound, the patient lies on her back or possibly her side. In stereotactic procedures, the patient lies face down on a biopsy table with the breast protruding through a hole. The breast is lightly compressed to immobilize it. This table is similar to the mammogram table that allows the physician to get a clear mammographic image of the area to be sampled. The table is connected to a computer that processes digital images. Placement of the sampling device is guided by a computerized system using x-rays.

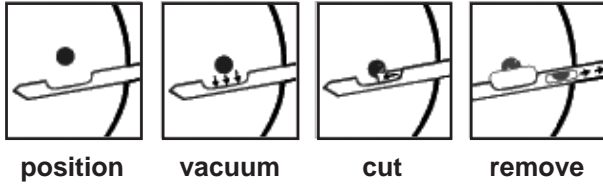


stereotactic table

While the physician looks at the images under stereotactic or ultrasound, he inserts the Mammotome® biopsy probe into the breast and aligns it with the breast abnormality. The probe has a vacuum system that when activated draws (suctions) the tissue into the probe. A rotating cutting device captures the breast tissue and the sample is carried through the probe to a tissue collection area outside the breast. The physician then rotates the probe to the next position to collect additional samples without having to remove and reinsert the probe. The sequence is repeated until all desired areas have been sampled.



Mammotome® Probe



When the physician has taken the needed biopsy samples, a small stainless steel tissue marker may be placed in the biopsy site for future monitoring of the exact location. This small marker is undetectable to the patient and allows more accurate follow-up on future mammograms. The biopsy probe is removed from the breast, pressure is applied and then a small bandage is placed over the biopsy area. The tissue samples are sent to a laboratory for analysis by a pathologist. The pathology report is sent to your physician.

Your healthcare provider will tell you when you can change your bandage and the activities that you can participate in during the next few days.

Questions you may wish to ask:

- Will you place the stainless steel marker in the biopsy site?
- What signs and symptoms should I report after I return home?
- What type of discomfort should I expect?
- What medications should I take to manage pain if needed?
- When should I change my bandage?
- What type of bandage should I reapply?
- When can I shower or take a tub bath?
- Are there any activities I should avoid over the next few days?
- When will my pathology report be ready?
- How will I receive the results of this report?

Other questions you may wish to ask:

***Mammotome® Biopsy Scheduled at
(facility)***

Location _____

Date _____ **Time** _____

Physician _____

Special Instructions _____



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Magnetic Resonance Breast Imaging (MRI) — Breast Biopsy

Your physician has recommended a Magnetic Resonance Breast Imaging (MRI) biopsy of an abnormality found in your breast. MRI locates the abnormality by creating images using a large, powerful magnet instead of x-ray.

Preparation for the exam:

- Inform your physician if you have problems lying on your stomach.
- Inform your physician if you have any allergies.
- Tell your physician about any prescription or over-the-counter medications you are taking to evaluate the potential to increase bleeding.
- Inform your physician if you are claustrophobic (fear of small places).

Day of your exam:

- You will be asked to sign an informed consent for the exam.
- You will have an IV inserted into your arm.
- You will lie flat on a table. The breasts are allowed to fall through a cushioned opening, where they are visualized by a special coil that encircles the breast.
- The breast being biopsied will be placed in a compression device that has a grid (small openings) on the outside of the breast.
- You will enter into a cylinder-shaped machine where you will hear tapping sounds caused by the images being taken.

- You will then receive a contrast material (Gadolinium DTPA) through your IV site to improve quality of contrast between the tissues, highlighting the abnormality for the physician.
- Your images will be reviewed to determine the entrance site and lesion depth for placement of the biopsy needle.
- The skin is cleansed with an antiseptic at the site for the needle entrance.
- The area is then numbed with an injection.
- The biopsy needle guide is then inserted through the grid on the compression device in the area of the breast abnormality. After the correct positioning is confirmed, the biopsy needle is then inserted, and samples of the lesion are taken to be sent to a pathology laboratory for evaluation. A small biopsy marker is placed in the area for future identification during imaging.
- When the biopsy is completed, you will have compression of the area (like an ace bandage) along with an ice pack to reduce potential for bleeding.
- No pain is involved other than the needle stick for the IV and the injection of the anesthesia to numb the breast. You will feel slight compression of the breast from the compression device to stabilize the breast and some pressure as the biopsy needle enters.

- When the anesthesia wears off, you may have local discomfort, and there may be discoloration of the breast from the procedure.
- The biopsy procedure usually takes less than an hour, unless there are complications.

Report to your physician following your biopsy:

- Any pain that is sudden or severe
- Bleeding that soaks through your bandage
- Appearance of a hard lump at the biopsy area (caused from internal bleeding)
- Signs of infection at biopsy site, such as fever over 100, redness of biopsy area or a colored drainage (infection is rare)

Instructions for your breast biopsy:

Date _____

Time _____

Place _____

Address _____

Physician _____

Telephone Number _____

Special Instructions _____



Magnetic Resonance Breast Imaging (MRI) — Needle Localization

Your physician has recommended a Magnetic Resonance Breast Imaging (MRI) for further needle localization of an abnormality found in your breast to guide the surgeon in removing it. MRI locates the abnormality by creating images using a large, powerful magnet instead of x-ray.

Preparation for the exam:

- You should inform your physician if you have problems lying on your stomach.
- You should inform your physician if you have any allergies.
- You should inform your physician if you are claustrophobic (fear of small places)

Day of your exam:

- Asked to sign an informed consent for the exam.
- Have an IV inserted into your arm.
- You will lie flat on a table. The breasts are allowed to fall through a cushioned opening, where they are visualized by a special coil that encircles the breast.
- The breast being localized will be placed in a compression device that has a grid (small openings) on the outside of the breast.
- You will enter into a cylinder-shaped machine where you will hear tapping sounds, which come from the images being taken.

- A contrast material (Gadolinium DTPA) will be given through your IV site to improve quality of contrast between the tissues, highlighting the abnormality for the physician.
- Your images will be reviewed to determine the entrance site and lesion depth to place the needle.
- Skin is cleansed with an antiseptic at the site for the needle entrance.
- Area is numbed with an injection of lidocaine.
- The needle is inserted in the area of the breast abnormality, and a wire is placed to mark the area for the surgeon.
- There is no pain involved other than the needle stick for the IV and the injection of the anesthesia to numb the breast. You will feel slight compression of the breast, but not as much as a regular mammogram.
- The needle localization procedure takes approximately 30 minutes.
- The wire-marked area will be removed by the surgeon at a later place and time as listed below.

Instructions for your needle localization procedure:

Date _____

Time _____

Place _____

Telephone Number _____

Special Instructions _____

Instructions for your surgical removal procedure:

Date _____

Time _____

Place _____

Surgeon _____

Special instructions prior to surgical removal:



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Needle Localization — Breast Lumps

When a suspicious area is found on a mammogram or ultrasound but cannot be felt and requires further evaluation by a surgeon, needle localization may be recommended. The procedure is performed under mammography or ultrasound visualization by a radiologist prior to a scheduled surgical biopsy. The radiologist marks the area to be biopsied by the surgeon with a needle and wire. The wire is used later to guide the surgeon to the abnormal marked area for removal.

Prior to your surgery, the radiologist will position the wire in your breast. Since you must be alert, sedation is usually not recommended. The technologist will take a mammogram x-ray of your breast and leave the room to develop the film. Your breast will remain compressed, and you will be asked to remain very still so that the position of the breast does not move between the compression paddles. Small holes in the paddles allow the technologist to cleanse the area with alcohol prior to the radiologist placing a needle into the breast. Numbing medication may or may not be used because the compression of the breast decreases the sensation of the needle. The procedure is mildly uncomfortable.

Second pictures will confirm if the needle is located in the suspicious area. If the tip of the needle is not accurately placed, it will be repositioned and another picture taken. When the film confirms correct placement, the pressure paddles will be released and another picture at a different angle will be taken. This

picture confirms the depth of the needle and its accurate placement and may also determine if an adjustment in placement of the needle is needed.

Mammography localization differs from ultrasound placement in that compression of the breast is not needed with ultrasound. Needle placement uses the same method.

When it is confirmed that the needle is positioned in the correct area, the radiologist will slide the wire out of the tip of the needle into your breast and then remove the needle, leaving the wire in place. The wire has a hooked tip that holds it in the area. Two final pictures are made to confirm the accuracy of the wire placement. The wire is taped to the outside of your breast. You will be able to feel the wire being inserted, but after the placement it is not painful. Copies of your films will be sent with you to surgery to enable the surgeon to locate the tip of the wire during the surgery.

In the surgery room, you will be given anesthesia. The surgeon will make an incision into the breast to remove the area marked by the tip of the wire. When the tissue is removed, it is sent back to the radiology department to be x-rayed so that the surgeon is assured it is the suspicious area that was seen on the mammogram. The pathology lab then analyzes the biopsy specimen to determine what types of cells are present. Pathology reports are sent to your physician when the results are complete.

The localization procedure may take 30 minutes or longer. The surgery will take from 30 minutes to one hour. You will be allowed to leave the outpatient surgery recovery area when your vital signs are normal. This is usually several hours, depending on the type of anesthesia you receive. You will be given instructions on how to care for the wound before you are discharged. Your doctor will have you return to the office to remove the stitches.

Needle Localization Scheduled at:

Facility _____

Location _____

Date _____ **Time** _____

Physician _____

Special Instructions _____



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Needle Localization — Patient Instructions

You have been scheduled for a needle localization just before your planned breast surgery. This procedure is necessary because the surgeon cannot feel the identified change in your breast. This change, however, can be seen on ultrasound or mammography. Needle localization will mark the problem area for your surgeon.

When you come for your surgery, a small wire will be placed into your breast to locate the correct area that will be surgically removed. The wire is very thin and the procedure is only slightly uncomfortable. The procedure should take about an hour. After the procedure, you will go to the surgical suite for removal of the marked area by the surgeon.

On the day of your localization, we suggest the following:

- Wear separates—pants or a skirt. You will remove only your top for this procedure.
- Wear a blouse that opens in the front. Do not wear a pullover sweater or shirt. You will not wear your bra after placement of the wire. A dark, thick blouse will conceal the wire if you have to be transported to the surgical suite.

- Do not take any medications before this procedure that would make you sleepy. We will need your alert cooperation.
- If your surgery is located away from this center after your needle localization, plan to have someone drive you to the hospital or clinic for your surgery. You will be asked not to perform any activities after placement of the wire.
- Plan to arrive at our center fifteen minutes before your scheduled localization. Your appointment for surgical removal makes it imperative that we stay on time performing the localization for the surgery.
- If you have additional questions, please call our office.

Thank you for selecting our center for your breast health care. We are committed to making this procedure as stress-free as possible for you. You can help by following these suggestions.



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Overview of Biopsy Types

Biopsy Type	Selection Criteria	Size of Biopsy Specimen	Anesthetic Required	Advantages	Disadvantages
Fine Needle Aspiration (FNA)	Cyst or palpable solid lesion Lesions seen on ultrasound	22-25 gauge needle 2-6 sections of solid lesion sampled	None with simple cyst Local with solid lesion	Quickest diagnosis No stitches or scar	Small sample Requires cytopathologist to read sample Skill of provider can be a limitation
Core Needle (No image guidance)	Solid lesion	10-14 gauge coring needle	Local	Larger sample No stitches or minimal scar	Multiple needle insertions Potential to sample wrong area without imaging
Core Needle (Image guidance using ultrasound or Stereotactic)	Solid lesions Calcifications	10-14 gauge coring needle 1/4" skin incision for instrument insertion (optional)	Local	Larger sample No stitches or minimal scar Imaging increases accuracy	Multiple insertions of needle
Vacuum Assisted Core Biopsy (Mammotome® or MIBB)	Solid lesions Calcifications	11-14 gauge needle 1/4" skin incision for instrument insertion (optional)	Local	Can remove calcifications One insertion of biopsy instrument to collect multiple solid core samples	Clinician skill dependent Location of lesion in breast (not near chest wall or in very small breast)
Vacuum Assisted Architecturally Intact Specimen (Intact™ or EnCapsule)	Solid lesions Calcifications	10mm, 12mm, 15mm, 20mm biopsy basket 1/2" skin incision for probe insertion	Local	Provides large intact biopsy sample similar to surgical biopsy through small surgical nick in the skin	Clinician skill dependent Location of lesion in breast (not near chest wall or in very small breast)
Large Core (ABBI)	Solid lesions Calcifications	5-20 mm of solid breast tissue (size of wine cork)	Local	Provides large sample similar to surgical biopsy	Removes healthy tissue between skin and lesion - Stitches and scar Potential hematoma increase Increased recovery time
Surgical Biopsy	Solid lesions Calcifications (wire localized) Lesions close to chest wall	Requires 1-2" incisions or larger	Heavy Sedation General Anesthesia	Largest tissue sample	Longer recovery Stitches and scar Complications from anesthesia Future mammography interpretation



Risks of Biopsy

Risks of minimally invasive biopsies include:

- Bruising
- Potential for hematoma (collection of blood in site)
- Potential for infection
- Scarring is rare unless the procedure requires stitches to close the area

Requirements and risks of surgical biopsies include:

- Requires procedure be performed in a surgical suite
- Requires intravenous sedation and/or anesthesia
- Requires stitches and leaves a scar on the breast
- May change the appearance of the breast if a large amount of tissue is removed
- May require wire localization to mark the area for the surgeon (performed under mammography or ultrasound to locate lesion) prior to surgery
- Increased risk of bleeding and infection
- Risk of hematoma (collection of blood) or seroma (collection of fluid in area)
- Increased pain from more extensive procedure and longer recovery time

TYPE OF BIOPSY	RISK SCALE <i>1 (least) - 5 (greatest)</i>
Fine Needle Aspiration Biopsy	1
Core Needle Biopsy	2
Vacuum-Assisted Biopsy (Mammotome, Intact™ or EnCapsule)	3
Large Core Biopsy (ABBI)	4
Open Surgical Biopsy	5



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Stereotactic Breast Biopsy

Definition of terms:

- Anesthetic**— Medication that produces loss of sensation for pain. May be local or general.
- Aspiration**— Removal of fluid or cells by suctioning.
- Cyst**— A fluid-filled sac.
- Biopsy**— The removal of body tissues for study of how cells are made up.
- Benign**— Not cancerous; no threat to the body.
- Hematoma**— An accumulation of blood under the skin from a ruptured vessel.
- Malignant**— Cancerous; a threat to the body.
- Mammogram**— X-ray pictures of breasts using special mammography equipment.
- Pathology**— The study of disease processes and consequences.

If a suspicious area that cannot be felt or is very small is seen on a mammogram, stereotactic breast biopsy may be used to biopsy the area. This biopsy procedure is performed using a mammography table or an add-on unit to the mammography machine, a biopsy needle, and the guidance of a computer. This test, an alternative to surgical biopsy, is done without the discomfort, risk,

disfigurement or the expense of surgery. The procedure takes approximately 45 minutes to perform, and most patients return to their normal activities within a few hours.

Your breast will be compressed with a special mammography machine while stereo x-ray pictures are taken at angles. After the suspicious area has been identified, the radiologist enters information into a computer that calculates where the needle should be injected. The area of the breast to be biopsied is deadened with a local anesthetic. An instrument moves the biopsy needle in position and, at a rapid rate of speed, removes a sample of the suspicious tissue. If the suspicious area is a cyst and needs aspiration, the needle will be placed into the area and confirmed with x-rays that it is in the correct location before the aspiration begins. Because stereotactic biopsy uses a needle, damage to nearby tissue is minimal—unlike surgery that may cause scarring to the breast. When the biopsy is completed, a small bandage will be placed over the biopsy site and you may return to your normal activities. You may shower the same day you have the biopsy.

The biopsy sample will be sent to the pathology lab for evaluation. The pathologist will send the referring physician a report stating if the biopsy was malignant or benign. Consult your physician regarding how and when you can expect to receive the biopsy results.

Infection is rare with stereotactic biopsy. However, there is a small possibility a hematoma may develop. If this occurs, inform your physician so this information can be recorded in your medical records. This area may later show up on mammography as a change in your breast tissues.

Stereotactic Breast Biopsy Scheduled at:

Facility _____

Location _____

Date _____ **Time** _____

Physician _____

Special Instructions _____



Ultrasound Guided Breast Biopsy

Definition of terms:

- Antiseptic**— An agent to disinfect or to remove bacteria and other microorganisms.
- Anesthetic**— Medication that produces loss of sensation for pain; local or general.
- Benign**— Not cancerous; of no danger to the body.
- Biopsy**— The removal of tissue from the body to study the cells' make-up.
- Chest Wall**— Deep in the breast, near the muscle of the chest.
- Cyst**— A fluid-filled sac.
- Hematoma**— An accumulation of blood under the skin.
- Malignant**— Cancerous; a threat to the body.
- Pathology**— The study of disease processes and consequences.
- Ultrasound**— The use of sound waves delivered by a machine to produce pictures of area, using no radiation.

If a lump has been found that is relatively small, close to the chest wall, or has been observed through mammography screening but cannot be felt by a physician, an ultrasound guided needle biopsy, core biopsy or vacuum assisted core biopsy (Mammotome®) will allow a physician to accurately biopsy the area. Using ultrasound to observe the area during the biopsy is necessary because a small lump may be missed. If the lump is near the chest wall, there is a danger of puncturing the lungs; and if the lump cannot be felt, the physician is unable to stabilize the area for biopsy.

This procedure is performed in a breast center, physician's office or wherever the ultrasound equipment is located. The area is cleansed with an antiseptic to remove surface bacteria. An anesthetic to numb the area may or may not be used. A gel substance is placed on the breast and a transducer, which resembles a microphone, is passed over the breast to obtain images or pictures of it. The ultrasound machine locates the lump. As the physician looks at the area on a monitor, the needle is inserted into the suspicious area or lump to obtain the tissue sample. The lump is a normal cyst if the fluid removed ranges from light yellow to dark yellow or green. The ultrasound picture will allow the physician to see the cyst area disappear as the fluid is withdrawn. A bloody fluid that resembles chocolate milk or fresh blood will require the

physician to conduct further tests and evaluations of the area. If a biopsy is obtained from a solid lump, the physician is assured the biopsy is from the suspicious area.

The biopsy tissue is sent to the pathology lab for evaluation. Results will be sent to your doctor. You will need to ask when and how the results will be made available to you.

The procedure will take approximately 15 minutes. When it is completed a small bandage will be placed over the needle biopsy site and you can return to your regular activities. You may shower the same day. If a hematoma forms after you leave the office, inform the physician so the information may be recorded on your medical chart. The area of the hematoma formation can show up on mammograms later as an area of change. Infection from needle biopsy is rare.

**Ultrasound Guided Breast Biopsy
Scheduled at:**

Facility _____

Location _____

Date _____ **Time** _____

Physician _____

Special Instructions _____



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Additional Mammography Views — Spot Compression and Magnification

A screening mammogram usually involves taking two views of each breast from different angles. When the radiologist reads the screening mammogram films and sees an area that is questionable, unclear, abnormal, or varies from your previous film, you will be asked to return for additional views or further evaluation of the area. This does not mean that you have cancer; rather, it means that the radiologist needs additional information to be more confident that the suspicious area is clearly a normal finding.

Evaluation of Questionable Area:

- Additional views of the area may be taken at different angles.
- Breast ultrasound may be used to further define what the radiologist is questioning.
- Special mammography views may include magnification views of the area or focal/spot compression views. Both techniques are used to make a small area of breast tissue easier to see on the mammography film.

Spot Compression

Spot compression, also called a compression mammogram, spot view, cone view, or focal compression view, applies the compression to a smaller area of tissue using a small compression plate or cone. By compressing only a specific area of the breast, there is better visualization of the small area in question and its borders (margins) than on the standard mammography views. Abnormalities usually appear more prominent. Areas that may look unusual on the screening mammogram are often shown to be normal tissue on the spot views.

Please remember that women who are recalled for additional or special views should not be alarmed. Your radiologist is simply being thorough and carefully scrutinizing any questionable finding.

Magnification Views

Magnification views bring the breast closer to the x-ray source and further away from the film plate. The technologist “zooms in” to take images two times larger in size than that of the area. Magnification views provide a clearer assessment of the borders and the tissue structures of a suspicious area or a mass. This technique is often used to evaluate microcalcifications (tiny specks of calcium in the breast that may indicate a small cancer).



Calcifications — Microcalcifications

Calcifications (calcium deposits) or microcalcifications (small calcium deposits) are the smallest particles visible on a mammogram. Calcifications are a normal occurrence in aging breast tissues which have gone through changes that cause death of cells, such as cysts, injuries, or mastitis (infection). However, they can also be a sign that cancer may be present. Because of the potential for a malignancy, radiologists closely study microcalcifications found during mammography.

A finding that would point toward further evaluation would be clustered microcalcifications—four or more close together. A radiologist would examine the shape and placement of the calcifications or clustered calcium deposits that follow the path of a duct. Special close-up mammography views—compression or magnifications—will be taken to give the radiologist the best possible diagnostic picture. Calcifications associated with a malignancy have a pattern that appears to branch, with irregularly shaped edges and an asymmetrical (do not look alike) shape. Often there will be a pattern of density (thickness of tissue) surrounding the calcifications that may show up on the mammogram. Sometimes the calcifications will take the shape of a duct that will alert the radiologist to a possibility of intraductal disease.

After close study, looking for evidence that would give the slightest suspicion of problems, the radiologist will make a recommendation

regarding treatment. If the findings do not have the characteristics of malignancy, the calcifications and findings will be noted on the report. If the calcifications are questionable but not suspicious, the physician may choose to wait for several months and re-examine them with mammography to see if there are any changes in the area. Then, a biopsy using needle localization or stereotactic biopsy can be performed to evaluate the microcalcifications.

Mammography has given us great advantage in finding many cancers long before they are detectable by palpation (feeling). Mammography is one reason that many cancers are found in the earliest stages. Cancer that is still in the ducts is considered curable with proper treatment. Before mammography, there was no way to find cancer at such an early stage. Most calcifications found on mammography are not associated with cancer. Therefore, it is essential when a calcification finding is mentioned in a mammography report that the patient understands the condition to avoid any unnecessary anxiety. Talking with the radiologist or surgeon may be helpful.

Remember: do not wear any deodorant, powder, or perfume on or near your breasts when you go for your mammogram. These may cause spots or shadows resembling microcalcifications to appear on your mammogram.



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Compression During Mammography

You may have felt slightly uncomfortable during your mammogram because of breast compression. We apologize if you were uncomfortable. We wanted the most accurate pictures possible of your breast tissue.

You may be wondering why such compression of the breasts is necessary during a mammogram. Compression of the breasts, while briefly uncomfortable for you, helps us take clearer pictures of your breasts with less radiation. Flattening of the tissues is necessary for you to have the best exam possible.

Compression is not dangerous to the breasts and does not produce long-term discomfort. If you notice that the compression has caused some temporary discoloration of one or both of your breasts, do not be alarmed. Your breasts may also be sore and tender for several days. If your breasts ache, you can take Tylenol®, ibuprofen, or aspirin for the discomfort.

If you experience any other problems or have any questions about your mammogram, please call our office. We appreciate the opportunity to serve as your breast health provider.



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Digital Mammography

Digital mammography is the most recent advancement in mammography technology. Digital mammography is similar to traditional mammography, but utilizes a special computer attached to the x-ray machine that receives the images and immediately converts them into a digital picture on the screen. Traditional mammograms use an x-ray film cassette to record the images. The cassette is then developed into film and hung on a light box for the radiologist to view and evaluate.

Digital mammography images are transmitted to the computer screen where they can be viewed immediately by the technologist and radiologist. The digital mammogram is then stored on a computer, rather than in large film envelopes. With digital mammography, the magnification of an area, brightness, and/or contrast of the film may be adjusted after the exam is completed enabling the radiologist to see certain areas more clearly.

Digital mammography may provide many benefits over standard mammography equipment. These benefits include:

- Ability for radiologist to improve contrast between dense and non-dense breast
- Ability to take images in a shorter period of time
- Reduced exam time for patient
- Reduced need for patients to return after screening mammography for additional film studies

- Reduced time for staff to prepare images for reading by radiologists
- Quicker results for patients
- Easier image storage and quicker retrieval of film when needed
- Physician manipulation of breast images for more accurate detection of breast cancer
- Ability to transmit film over a phone line to another physician's computer for a second opinion

Currently, digital mammography equipment is much more expensive than standard mammography, costing four to five times more.



Mammography Exam — Patient Overview

Why have a mammogram?

Breast cancer is the most commonly occurring cancer in women. One in eight women will be diagnosed with it in their lifetimes. At this time, we do not know how to prevent the disease, but we do know how to monitor the breasts so that if cancer should occur, it will be found in the earliest stages. Monitoring the breasts is a partnership between you and your healthcare provider. Practicing monthly breast self-exam, going for a clinical breast exam and having your mammograms on the recommended basis are the best tools available to help fight the battle against breast cancer. The earlier breast cancer is found, the more treatment choices are available, the less deforming surgery can be, and the better chances are for survival. Mammography has the ability to detect some lumps years before they can be felt and is the best diagnostic tool we have for early detection of these lumps.

When do you get a mammogram?

- American Cancer Society recommends that women age 40 and older should have a screening mammogram yearly.
- Some healthcare providers recommend a baseline screening mammogram at an earlier age, between 35 and 40, so changes in later screenings may be more evident.
- If you have a first-degree relative who has had breast cancer, your first mammogram and regular mammography screening may be started at a younger age.

- Finding a lump or an abnormality at any age may necessitate your healthcare provider ordering a diagnostic mammogram to help diagnose the finding.
- Inform your healthcare provider if you have a family history of breast cancer on either your mother or father's side.

What is a mammogram?

A mammogram is a low-dose x-ray of the internal structures of the breasts. The procedure involves compressing the breast with a mammography machine paddle to flatten the breast tissue, which gives a more accurate picture while using the lowest amount of radiation possible. A radiation technologist will position your breast carefully under the paddle and take two views, one from the side and one from the top of the breast. Compression of the breast will last only a few seconds and may be slightly uncomfortable, but should not be painful.

A routine or screening mammogram requires two views of each breast. A healthcare provider may order a diagnostic mammogram if a change has been detected in your breasts or if some type of abnormality is seen on a screening mammogram. Problems such as a lump, thickening, swelling, pain, nipple discharge, retraction, or bulging of the skin require a diagnostic rather than a screening mammogram. The diagnostic mammogram involves additional views that focus on the

suspicious area. Compression or magnification views are close-up pictures of a suspicious area. An ultrasound may be needed to clarify the findings of a mammogram to distinguish if a lesion is solid or fluid-filled. A radiologist—a physician with special training in reading x-rays—will interpret your mammogram and send a written report to your physician.

Remember, mammograms are needed for two reasons:

- 1. To check apparently normal breasts for an abnormality**
- 2. To help diagnose a change, discharge, thickening, or lump in the breast**

Where to obtain a good mammogram

A mammogram is only as good as the equipment, the person who positions you under the machine, and the physician who reads the pictures. The quality of mammography varies. A facility that has received the MQSA (Mammography Quality Standards Act) or American College of Radiology accreditation has gone through extensive equipment testing to ensure that the radiation dose is low and accurate and the radiation technologist and the radiologist have the required skills to give you a quality mammogram. These accreditations should be posted in the facility. If you do not see one, ask the staff about accreditation standings.

Preparing for your mammogram

It is best to schedule your mammogram at the end of your monthly period when the breasts are least filled with fluid and are not tender. Compression will be less uncomfortable. If you have had a mammogram that was very uncomfortable, you may wish to cut out caffeine for several days prior to your mammogram or consult your physician about taking ibuprofen several days prior to the exam.

On the day of your mammogram do not wear any deodorant, body powders or perfume. These may contain small metal particles that can appear on your films as small spots or shadows and may look like an abnormality. Take your deodorant in your purse and apply it after the exam.

It is helpful if you wear comfortable clothing, possibly a skirt or pants, that will allow you to undress from the waist up.

The technologist will instruct you to hold your breath and remain still for a few seconds. Motion, even breathing, can blur the image and make it necessary to repeat the picture. The radiologist may preview your films before you are dressed. You may be asked to have additional pictures taken because of movement or inaccurate positioning.

Results of mammogram

A radiologist, usually one that specializes in breast cancer detection, will interpret your films. The results are sent to you and your healthcare provider.

Mammography Misconceptions

MYTH: A mammogram that does not show an abnormality means that cancer is absent.

Mammography is an excellent diagnostic tool, but it has limitations. It can find cancer sometimes years before it can be felt. However, it can miss 10 to 15 percent of cancers. Breast self-exam and clinical exam by a physician must be combined with mammography in order to detect the cancer. You cannot rely on mammography alone.

MYTH: If you do not have a family history or other risk factors for breast cancer you do not need a mammogram.

Approximately 76 percent of all breast cancers occur in women with no risk factors. All women are at risk. All women need regular mammograms.

MYTH: If you have implants, you do not need a mammogram.

Women who have had their breasts enlarged with implants over or under their breast tissue can have breast cancer and need to have regular mammograms. The technologist should be trained in how to position the patient to ensure that the implants are properly displaced to visualize the normal breast tissue.

MYTH: Radiation from a mammogram is dangerous.

The amount of radiation used in today's mammography is a fraction of the amount used 20 years ago. Machines are carefully monitored and the amount of radiation is minimal, delivering less than 0.05 rads, compared to 5.0 rads per exposure in the 1960s. The benefits of mammography are far greater than any of the risks.

Mammogram Scheduled:

Date _____

Place _____

Time _____

Special Instructions _____



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Implants and Mammography

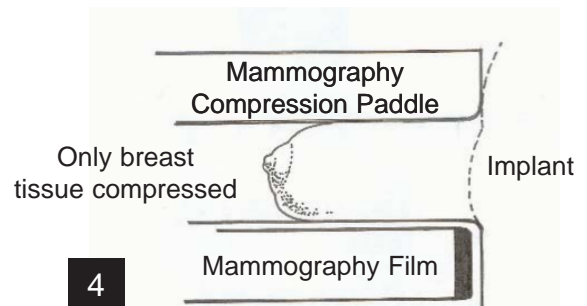
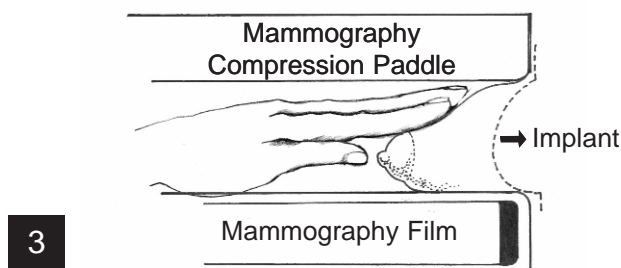
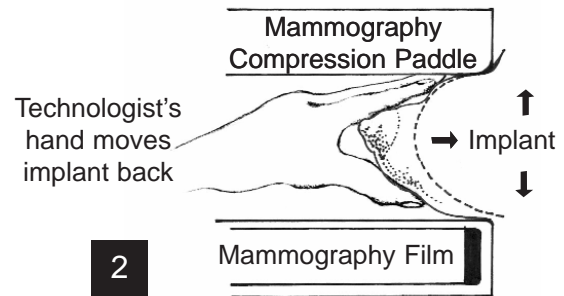
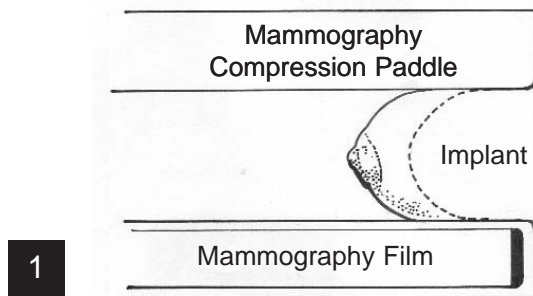
Many women have had their breasts augmented with breast implants. Some women have implants after surgery for breast cancer. The common questions are: Do I still get a mammogram? How do they take pictures? Is it safe?

Mammography is still needed for women who have implants. The risk for having breast cancer has not changed. However, women with implants should discuss the mammography center's experience with implants with their healthcare providers. Most centers have technologists who are trained to perform mammograms on women with implants. Silicone implants are dense on x-rays and can block the view of tissues behind them. The breast needs to be positioned in certain ways to detect any abnormalities. Special techniques of

positioning allow the tissues to be visualized without damaging the implants. A radiologist trained in breast implant images should read the mammography film.

If you have implants after surgery for breast cancer, ask your physician if you will need to have a mammogram on the side of the implant. Some physicians may recommend continuing mammography on the reconstructed side because about 5 percent of breast tissue is left on the chest wall after mastectomy. Special positioning techniques will be used during your mammogram to view the remaining tissues that need evaluation.

Discuss your technologist's skills in breast implant imaging with her. Mammography performed by trained technologists is a safe and needed screening tool for women with implants.





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Obtaining the Optimal Mammogram

Getting the best mammogram possible is a combination of several factors. Breast size, shape, and tissue density are different for every woman. Therefore, achieving an optimal mammogram requires skilled mammography technologists and radiologists with a commitment to evaluate your breast health based on your individual characteristics. Getting a mammogram may seem routine; however, with each mammogram the technologist and patient together determine if the mammogram will be of optimal quality.

It is helpful for you to understand each step of the process to get the best mammogram possible. Ask your technologist any questions you may have about the process or your breast health. Share any concerns, symptoms, family or personal history, or problems you may have had since your last mammogram. Mammography technologists specialize in women's breast health. However, if there are questions she is not able to answer, she will refer your question to the radiologist or other healthcare professional.

Correct patient positioning

During your exam, the technologist will ask you to move in various positions to capture different angles of your breast on the mammography films. It is vital that the entire breast be seen in the x-ray and that nothing, such as jewelry, hair, or the other breast, block the view. The position may seem awkward and uncomfortable, but her goal is to get all the breast tissue in the correct position for the best image.

Compression of the breast

Compressing the breast between the paddles on the machine flattens the breast to increase the quality of the pictures. Each breast is compressed two to four times for several seconds. Breast compression may cause some slight discomfort, but it only lasts for a brief time. You should feel firm pressure as the paddles compress your breast tissue, but **not significant pain. If compression causes you pain, inform the technologist.**

Why compress the breast?

- When the breast is flattened, there is better visualization of the anatomy and any potential abnormality. Tiny calcium deposits, known as microcalcifications, that may be an early sign of cancer are better visualized when the breast is compressed.
- Compression allows the use of a lower x-ray dose because it creates a thinner amount of breast tissue to be imaged.
- Compression immobilizes the breast tissue in order to eliminate blurring caused by movement and prevents having to repeat a film.

If you experience pain during compression, you may want to schedule your next mammogram at the end of your menstrual period when the breasts are least filled with fluid and least painful during a cycle. You may also plan to take Motrin or ibuprofen several days prior to your exam, if you have no restrictions on taking these drugs.

Holding your breath

You will be asked to hold your breath when the films are being taken using x-ray exposure. This prevents the image from becoming blurred due to breast movement. If blurring occurs, the film will need to be repeated. You will need to hold your breath for only a few seconds while the x-ray image is taken.

Remember:

Getting the optimal mammogram is a partnership among your technologist, radiologist and you. Ask any questions you may have about your breast health and report any changes you may experience between exams. A yearly mammogram is just one part of protecting your breast health. You must also have regular clinical exams by a healthcare professional and perform breast self-exam on a monthly basis.



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Mammography Report From Radiologist

A mammogram report is written by the radiologist who reads your films. It may indicate whether a breast abnormality is present and, if so, what characteristics are present. The report is forwarded to your physician and possibly the breast health coordinator or educator in your breast center. It is not the same report that you are required by law to receive within 30 days of your mammogram informing you of your results. Reports will vary as some radiologists document every finding and others only document those that may need further examination. Therefore, this listing should only be used as a reference as to what is indicated on an official radiology report. Refer to the glossary of Mammography Report Terminology below.

- Patient Information:** Patient's name, age, and the reason for the mammogram (annual screening or diagnostic mammogram referred by a physician or healthcare provider and why physician requested mammogram).
- Patient History:** Medical and family history of breast cancer. Personal history of previous breast problems and current problems you may be experiencing. Medications you are presently taking, including hormone replacement or oral contraceptives. History may also include smoking or alcohol use.
- Procedure(s):** Types of views taken during your exam including magnification views (close up) and spot compressions (pressure applied).
- Findings:** Description of what was found on the mammogram. Size, location, and characteristics of breast abnormalities may be noted. Primary signs of breast cancer may include spiculated masses or clustered pleomorphic microcalcifications. Secondary signs of breast cancer may include asymmetrical tissue density, skin thickening or retraction, or focal distortion of tissue. May also include description about breast density and distribution of the breast tissue.
- Impression:** The radiologist's overall assessment of the findings. Often includes a classification of the mammogram using the BI-RADS system developed by the American College of Radiology (ACR).
- Recommendations:** Some radiologists may give specific instructions on what action should be taken next. Recommendations may include: 1) no action necessary, 2) a six-month follow-up mammogram, 3) spot views, 4) breast ultrasound, or 4) biopsy.

Mammogram Report Terminology

- Asymmetry:** An area of breast tissue that does not look identical in both breasts. May be a normal or abnormal finding.
- Bilateral:** Occurring in both breasts.
- Cyst or Cystic:** A fluid-filled area in the breast. Simple cysts are non-cancerous. Ultrasound is often used to confirm the area identified on a mammogram as a cyst. Sometimes, cysts are drained with a fine needle aspiration biopsy.
- Dense or Density:** Breast tissue that has many glands close together. Appears as a white area on a mammogram film. Very common in younger women and women on hormone replacement therapy. Dense breasts make microcalcifications and any other abnormality in the breast more difficult to detect.
- Lesion:** Breast tumors are often referred to as lesions.
- Magnification views:** The process of “zooming in” to take images 2 times larger than normal of the area of the breast during mammography. Magnification views provide clearer assessment of a suspicious area or a mass and are often used to evaluate microcalcifications.
- Mass, Lump, or Nodule:** An abnormality that can be felt when the breast is examined. Most masses require further evaluation with mammography and/or other breast imaging tests.
- Microcalcifications:** The residue or “ashes” left when cells die in the breasts. Tiny calcium deposits less than 1/50 of an inch in size. When several microcalcifications cluster in one area, this may indicate a small cancer. About half of the cancers detected by mammography appear as a cluster of microcalcifications. Microcalcifications are the most common mammographic sign of ductal carcinoma in situ (DCIS). Most cases of DCIS are associated with microcalcifications and are identified before a lump can be felt.
- Macrocalcifications:** Large, coarse calcium deposits most often related to non-cancerous growths such as fibroadenomas or with changes in the breasts due to aging of the breast arteries, old injuries, or inflammation. Macrocalcifications are usually associated with benign conditions and may not require a biopsy. They are found in one out of two women over the age of 50.
- Monomorphic:** Describes abnormalities that are the same shape. Monomorphic often describes microcalcifications that are uniform in shape and density and usually benign.

Multiform: Having irregular, various, or many shapes. Often describes microcalcifications that can indicate ductal carcinoma in situ (DCIS), an early stage breast cancer.

Palpable: A breast lump that can be felt by hand.

Parenchyma: The functional tissue of an organ. In the breast, it is the ducts and glands as opposed to fatty or connective tissues.

Pleomorphic or Polymorphic: Having irregular, various, or many shapes. Often describes microcalcifications that can indicate ductal carcinoma in situ (DCIS), an early stage breast cancer.

Radiodense or Radiopaque: Effective in blocking x-rays. Breast tissue in younger women is usually more “radiodense” than the fattier tissue in older women.

Spiculated: Seen on a mammogram as dense regions with radiating lines that suggest a breast mass. The term is used to describe highly suspicious masses that may indicate cancer. However, some post-operative scars or old injuries may be quite spiculated and resemble cancer.

Spot view: A spot view is also called a compression mammogram, cone view, or focal compression view. Applying the compression to a smaller area of tissue using a small compression plate or cone helps compress a specific area of the breast for better visualization. This results in better tissue separation and allows better visualization of the small area in question. Spot compression views show the borders of an abnormality area better than standard mammography views. Some areas that look unusual on standard mammography images are often shown to be normal tissue on spot views. True abnormalities usually appear more prominent. The margins/borders of the abnormality can be better seen on compression views.

Suspicious: A breast abnormality that has mammographic features that may indicate breast cancer. These abnormalities may be lesions such as spiculated masses or pleomorphic microcalcifications.

Unilateral: Occurring in only one breast.



Mammography Report Terminology

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- Unilateral:** Occurring in only one breast.



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Radiation Exposure Concerns

Many women are concerned about the amount of radiation exposure received during their mammogram. This is a legitimate concern as excessive radiation has been implicated as a possible cause of some types of cancer.

The federal government has set standards for safe levels of radiation emitted from a mammography machine. The safe limit standard according to federal law is one-tenth (1/10) of a rad per two views for one breast. The mammography machines in most facilities deliver an even lower dose. However, the amount depends on several factors including the density of your breast. Very dense breast tissue will require an increase in radiation to get a clear image, but this will still be a safe dose, within the limits of the law. The Mammography Quality Standards Act (MQSA), a division of the Food and Drug Administration (FDA), enforces the law through inspection of mammography facilities. Facilities who do not meet the rigorous standards are not allowed to operate.

MQSA inspection teams not only check the radiation levels but also every aspect of quality from the equipment, skills of the technologists who position you for your mammogram and the skills of the radiologist who reads your film.

You can be assured that your facility has passed these radiation standards if they have a MQSA certificate displayed in their center. The American College of Radiology also has standards of care for mammography centers and offers certification to facilities who meet those standards. Look for these certificates in the facility or ask your provider.

You can be assured that efforts are in effect to assure that mammography is a safe and effective diagnostic tool.

Your radiologist or technologist will be happy to answer any other questions you may have about the safety of your mammogram.



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Methylene Blue Dye Localization

Methylene blue dye localization is a procedure that may be required when the physician cannot feel a suspicious area found on a mammogram. A radiologist will locate the area in your breast under mammography visualization. The radiologist then uses needle localization biopsy or methylene blue dye localization procedure to help the surgeon locate the suspicious area later during surgery. Using x-ray as a guide, the radiologist injects the dye with a needle. The dye colors the area to aid the surgeon when the surgery is performed. During surgery, the surgeon removes the tissue stained by the dye. The tissue is sent to pathology for analysis.

Localization Scheduled at:

Facility _____

Location _____

Date _____ **Time** _____

Physician _____

Special Instructions _____



Magnetic Resonance Breast Imaging (MRI) of the Breast

The FDA approved breast MRI in 1991 as a supplemental tool (additional test) to mammography to help diagnose breast cancer. Radiologists often use a dedicated MRI machine to further investigate breast concerns first detected with mammography or during a physical exam to clarify or verify recommendations concerning abnormalities. MRI is also an excellent breast cancer screening tool for women who have implants for augmentation (enlargement) because it can show breast tissues surrounding the implant, which might be obscured with mammography. MRI also helps to determine what stage the breast cancer is by imaging the nodes between the ribs and below the clavicle (collarbone). It is now being investigated as a screening tool in high-risk younger women identified by a strong family risk or by their carrying a mutated BRCA1 and BRCA2 (BR=breast, CA=cancer) gene.

Advantages of MRI:

- Compression of the breasts, as in a mammogram, is not required
- Evaluates breast implants for ruptures or leaks and images the breast tissues behind implants Effective in imaging dense breasts and young high-risk women's breasts
- Evaluation of inverted nipples for evidence of cancer
- Evaluation to determine if lumpectomy or mastectomy is the best surgical choice. May detect areas not seen by mammography and ultrasound.

- Evaluation for recurrence of breast lumps in lumpectomy breast
- Effective in locating primary tumors not seen on mammography if positive lymph nodes are present

Disadvantages of MRI:

- Costs much more than mammography
- Takes approximately four times longer to image the breasts
- Cannot identify microcalcifications (small calcium deposits in breasts)
- Requires injection of contrast agent into a vein before exam

Preparation for the exam:

- Inform your physician if you have problems lying on your stomach.
- Inform your physician if you have any allergies.
- Tell your physician about any prescription or over-the-counter medications you are taking to evaluate the potential to increase bleeding.
- Inform your physician if you are claustrophobic (fear of small places).

Day of your exam:

- You will have an IV inserted into your arm.

- You will lie on your stomach on a table. The breasts are allowed to fall through a cushioned opening, where they are visualized by a special coil that encircles the breast.

- You will then receive a contrast material (Gadolinium DTPA) through your IV site to improve quality of contrast between the tissues

- You will enter into a cylinder-shaped machine where you will hear tapping sounds as the images are being taken.

- Your images will be evaluated by a physician. You will be informed when and how you will receive your MRI report.

Instructions for your MRI Exam:

Date _____

Time _____

Place _____

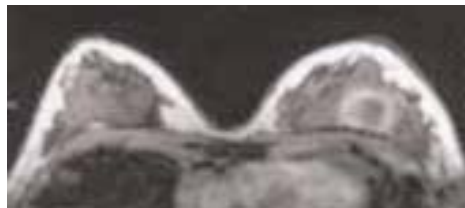
Address _____

Physician _____

Telephone Number _____

Special Instructions _____

Breast MRI image





Understanding Your Pathology Report

If an abnormality or suspicious area is identified, the tissue is removed from the suspicious mass or lesion for microscopic examination. The tissue is then sent to a pathology laboratory where a pathologist (a physician who specializes in diagnosing disease from tissue specimens) analyzes it and prepares a pathology report. The analysis reveals whether the tissue is benign (noncancerous) or malignant (cancerous) and helps the surgeon determine if additional surgery is needed. If a malignancy is diagnosed, the pathology report provides physicians with the information needed to develop a treatment plan based on the findings.

Because of the importance of the pathology analysis, many controls and guidelines are in place to promote accuracy. When the physician removes the biopsied specimen, it is placed in a container with your name, hospital number, date, and biopsy identification number. The surgeon or radiologist who performed the biopsy also includes specific details about the specimen. In the lab, the pathologist performs a **gross exam**, which includes a visual and descriptive report on weight, dimensions, contour, shape, texture, and any other visual findings. The pathologist then cuts or sections the lump that will be viewed under the microscope. Tissue may be prepared for examination by either frozen section or permanent section.

A **frozen section** is sometimes used for a quick analysis of the tissue. A frozen section is usually obtained during surgery and prepared

within minutes. The pathologist quickly freezes the tissue by applying a chemical to instantly harden or "fix" the biopsy. The pathologist can review this tissue, and in a few minutes offer an opinion as to whether it is benign or malignant. Frozen section analysis is usually as accurate as a permanent section, but the pathologist only views a small portion of the tumor. The problem occurs when there are no cancer cells present. The diagnosis cannot be definitive until all the tissues are carefully examined. Thus, the results of the permanent section are more comprehensive.

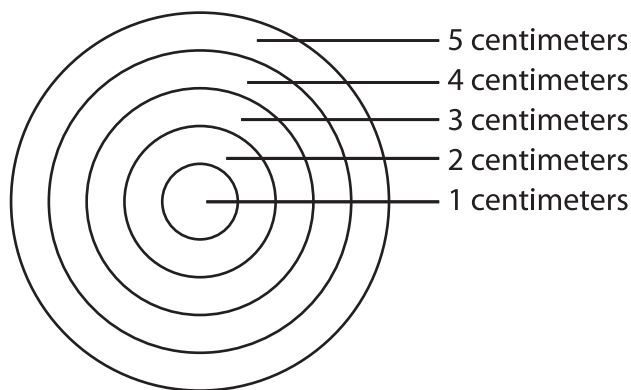
A **permanent section** is prepared by placing the remaining specimen in a chemical (formalin) solution that fixes the tissue, similar to boiling an egg. When the permanent section is firm, in approximately 24 hours, the tissue is cut into small sheets (thinner than tissue paper), and mounted on glass slides. The pathologist then reads the slides under the microscope and issues a report on what is seen. The slides are carefully stored so they may be reviewed in the future if necessary. A permanent section gives the most comprehensive answer because it studies all the tissues removed by the biopsy.

What Does the Pathologist Look For?

Cancer occurs when cells undergo change. Many different types of cells are located in the breasts, creating a potential for one of approximately 15 different malignancies to occur.

These different types of cancer have their own characteristics and are often treated quite differently. In reviewing the tissue, the pathologist prepares a pathology report to give information on different aspects of the tumor that may include:

- **Tumor size**—Measures size of tumor; largest dimension is reported in centimeters or millimeters (10 millimeters equal one centimeter. One centimeter equals 3/8 inch. One inch equals approximately 2.5 centimeters.)



- **Margins**—Describe the area of tissue surrounding a tumor, if the entire tumor was removed, and how it relates to the tumor. If the surgical surface of the surrounding tissue has no evidence of cancer, the report will state the information with terms such as “clear,” “clean,” or “uninvolved.” If cancer was found, the terms used may be “involved” or “residual cancer.” If the pathologist is unable to make a definite statement, the term “indeterminate” may be used. When clear margins are not obtained the potential for local disease recurrence is increased and the treatment plan will take this into consideration.

- **Tumor Shape**—States the shape of the tumor using a wide variety of descriptive terms: round or spherical (well circumscribed); or irregular contour (stellate,

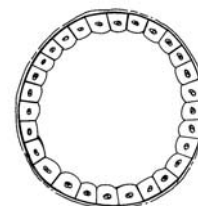
poorly circumscribed). The more irregular the shape of a tumor is, the higher the potential to become aggressive.

■ **Type of Cancer:**

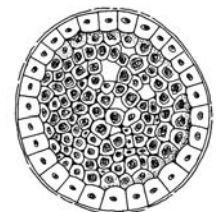
In situ cancers—Normal ducts and lobules are lined with one or two layers of cells that are in an orderly pattern. When cancer develops and grows, it does not break through the walls but remains in the duct or lobule where it began (good prognosis).

Invasive cancers—The cancer has broken through the wall of the duct or lobule and has begun to grow into the surrounding tissue.

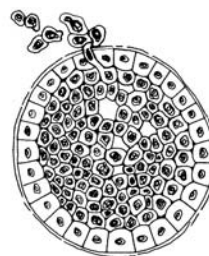
Normal Cells



In Situ Cancer Cells



Invasive Cancer Cells



- **Node Status**—If surgery included lymph node removal, the pathology report will include how many were removed, a description of the area from which they came, and how many tested positive for cancer cells.

■ Grading of Tumor

General Grading of Cells: A microscopic examination of the cells and the type of cell arrangement will show the degree of change from the parent cell from which the tumor came. How much the cells resemble the original cell is observed. The type of cell and the cellular arrangement determine the tumor grade. The more unlike the parent cell the tumor is, the more aggressive and likely to recur. Tumors are classified as:

■ Grade 1: Well differentiated tumors

Less than 25% of cells are abnormal. 75% or more of the cells are very similar in appearance to the parent cell from which they evolved. They look similar, like sisters. Usually least aggressive.

■ Grade 2: Moderately differentiated tumors

25 - 50% of cells are abnormal. Between 50 - 75 % of cells still resemble the parent cell. They are like first cousins. This term is used to describe cells between the well and poorly differentiated stages.

■ Grade 3: Poorly differentiated cells

50 - 75% of cells are abnormal. 25 - 50% of cells still resemble the parent cell. Similar to third cousins. Usually aggressive.

■ Grade 4: Undifferentiated cells

75% or more of the cells are abnormal. Only 25% or less of the cells in the tumor are normal. Usually most aggressive.

Scarff/Bloom/Richardson Tumor and the Elston Grading Scales

Some pathologists use the **Scarff/Bloom/Richardson** scale or a slight modification called the "Elston Grade" for grading invasive tumors. These grading systems give a number from 1 to 3 according to aggressiveness of three different characteristics: (1) tubular formation, (2) nuclear size and shape, (3) mitotic count (how fast the cells are growing). The numbers from each characteristic are then totaled to determine the aggressiveness

of a tumor. The higher the number, the more aggressive the characteristics of the tumor.

Characteristics Evaluated in Scarff/Bloom/Richardson and Elston Grading:

Tubular formation: Cell arrangements show characteristics resembling a small tube.

Majority >75%	1
Moderate degree 10 - 74%	2
Little or none 0 - 9%	3

Nuclear Pleomorphism: Size and shape variation of cells and internal part (nucleus) of cells.

Uniform nuclear shapes	1
Moderate increase in varying shapes	2
Marked variation (often large nucleus)	3

Mitotic Counts: How many cells are visible in the stage of dividing in an area of tumor.

Low (0 - 5)	1
Moderate (6 - 10)	2
High (>11)	3

***Mitotic Counts:** How many cells are visible in the stage of dividing in an area of tumor.

Low (0 - 9)	1
Moderate (10 - 19)	2
High (>20)	3

* These numbers vary according to the Elston Grading Scale

Final Score Totals: (Summing of the numbers in the above three areas of evaluation:

Grade 1 , well differentiated
3 - 5 points total
Grade II , moderately differentiated
6 - 7 points total
Grade III , poorly differentiated
8 - 9 points total

The higher the final score, the more aggressive a tumor will be.

Prognostic Indicators Other Than Grade:

- **Necrosis (cell death)**—A result of the lack of necessary oxygen and nutrients to parts of a tumor causing the cell to die. This signifies a more aggressive cancer. Often, necrosis is related to a comedo (type of aggressive cell) component.
- **Blood Vessel (Vascular) or Lymphatic Invasion**—A microscopic examination of the tumor will show if the surrounding vessels or lymphatics have been invaded by the tumor. No invasion offers a better prognosis.

Prognostic Tests

There are many diagnostic tests being used to appraise tumors. Your physician will discuss with you the tests selected to evaluate your tumor. Each of these tests help collect pieces of the puzzle needed for your physicians to determine your best treatment plan. The following various tests may be ordered to look at specific characteristics of the tumor cells.

■ **DNA Status:**

A test that looks at the genetic material found in the DNA (blueprint for cell reproduction) of a cell. Normal DNA of a cell appears with two sets of chromosomes. DNA ploidy determines DNA composition of cells. Tumors may be:

- **Diploid** means having two sets of chromosomes, which is normal.
- **Aneuploid** refers to the characteristic of having either fewer than or more than two sets of chromosomes; this is abnormal, suggesting aggression.
- **DNA index** is the ratio of aneuploid DNA compared to diploid DNA.
- **Proliferation Markers** - Increase in any proliferation markers suggests an aggressive tumor.
- **S Phase Fraction** - Flow cytometry reveals number of dividing cells and corresponds to the growth rate of a tumor.

- **Mitotic Rate** - Microscopic observation of number of cells that are dividing.
- **Ki67 Stain** - Microscopic observation of all dividing cells.

■ **Hormone Receptor Assay**

A chemical or observation test that measures the presence of estrogen and progesterone receptors in the tumor cells is called a hormone receptor assay. It reveals whether the tumor was stimulated to grow by female hormones and is, therefore, very important in determining the type of treatment. If a tumor is positive, it was stimulated by estrogen or progesterone and usually carries a slight increase in a positive prognosis. Positive receptor tumors may be treated with anti-hormonal medications (tamoxifen) for control. Final pathology results for the hormone receptor assay may take longer.

Tumors may be:

ER+ (positive) and PR+ (positive)
ER- (negative) and PR+ (positive)
ER+ (positive) and PR- (negative)
ER- (negative) and PR- (negative).

■ **HER-2/neu (c-erbB-2) Oncogene Screening**

This oncogene (substances in cells that promote tumor development) is found amplified and over-expressed in about 20 to 30 percent of breast cancers. Recently it has been demonstrated that HER-2/neu over-expression can predict the response to Adriamycin-based chemotherapy, as well as resistance to tamoxifen. Furthermore, the recent introduction of immunotherapy with a “humanized” monoclonal antibody, Herceptin[®] (trastuzumab) directed at the HER-2/neu protein, has required further screening of breast cancers for HER-2/neu over-expression to determine if these types of drugs may be effective.

Pathology Report

The pathologist prepares a written report that is sent to your physician. If the hospital or cancer center conducts multidisciplinary conferences, the pathologist presents the findings there. Time varies as to when the final report will be available. Many pathologists have a commitment to within 24 hours after receiving the specimen. Ask your physician how long before you can expect to receive your pathology report. If the diagnosis reveals cancer, the pathologist's findings will help the physicians determine what further treatments will be needed. Additional diagnostic tests, such as a bone scan, liver scan, chest x-ray, CT scan, or an MRI (magnetic resonance imaging), may be ordered. When all the results are received from the tests, your cancer will be staged on a scale from zero (in situ cancer) to four (a cancer with distant metastasis). A stage zero cancer is the least aggressive and has the best prognosis.

When you discuss the findings of your pathology report with your physician, you may want to ask and write down the answers to the following questions. Some doctors will provide a copy of your pathology report for your records.

Questions to ask about your pathology report:

- What is the name of the type of cancer I have?
- Was my tumor in situ (inside ducts) or infiltrating (grown through the walls)?
- What size was my tumor? (The size is in centimeters or millimeters (10 millimeters equal one centimeter, one centimeter equals 3/8 inch, and one inch equals approximately 2.5 centimeters.)
- Was the cancer found anywhere else in my breast tissue? (The term multicentric means more than one place.)
- How many lymph nodes were removed? How many levels of lymph nodes did you sample or remove? (You have three levels of nodes.)
- Were any nodes positive with cancer cells?
- Was my tumor estrogen or progesterone receptor positive?
- Was my cancer diploid (like the original cell) or aneuploid?
- What was my S-phase or mitotic index or Ki176? (How fast cancer was growing)
- Is there anything else that I need to know about my cancer?

After the Pathology Report:

Obviously you have no control over the findings described in your pathology report. However, you can become an active participant with your physicians to help defeat the disease.

Remember:

- Breast cancer is a treatable disease. It certainly is not an illness you would choose, but it is an illness with many proven treatments.
- Acquire an understanding of the treatment options. This will allow you to communicate with your healthcare team and become an active participant in decisions. Understanding will alleviate many irrational fears and restore a sense of control to your life.
- Employ the best of all medicines—your attitude. The most productive approach that you can bring, and one which the physician cannot provide, is a positive, cooperative attitude. Determination, combined with optimism, creates a healing environment that only you can provide.



BENIGN BREAST CONDITIONS

BENIGN
BREAST CONDITIONS



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Atypical Hyperplasia

Definition of terms:

- Atypical**— Cells that are not like normal cells (abnormal)
- Benign**— Not cancerous; no threat to the body
- Biopsy**— Procedure to remove cells or tissue for study by a pathologist
- Cyst**— A fluid-filled sac
- Hyperplasia**— Excessive growth of normal cells in normal tissue
- Malignant**— Cancerous; a threat to the body
- Pathologist**— Physician that studies biopsy specimens to determine if disease is present

Atypical hyperplasia is a term that describes a change in the cells that line the ducts or lobules of the breast. The diagnosis is usually made after surgery for another condition, such as a cyst, and is found and identified by the pathologist while looking for something else. Cells have experienced excessive growth, and some of the new cells have changed their features. This change in features of the new cells is not considered a malignant change but is recognized as abnormal. Some pathologists call this condition a “borderline” change. Thus, the term “atypical” is applied to the new cellular growth. Some pathologists further define the abnormality by describing

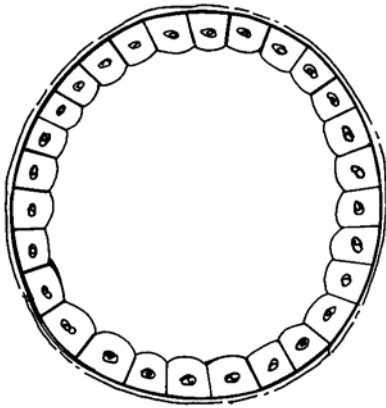
exactly where the change has occurred: atypical ductal hyperplasia—ADH (found in ducts), and atypical lobular hyperplasia—ALH (found in lobules).

Atypical hyperplasia is not cancerous, but is considered a precancerous condition. Therefore, women diagnosed with it are at a slightly higher risk for developing breast cancer. When no family history of breast cancer is present, the estimated increase in risk is around 5 percent. A family history of breast cancer increases this risk to approximately 11 percent.

It is estimated that many women have atypical hyperplasia. Yet many never know because it does not show up on mammography and cannot be felt during self-exams. Many women with atypical hyperplasia never develop breast cancer. Autopsies performed on people without breast cancer show that as many as 30 percent of these women had some type of hyperplasia.

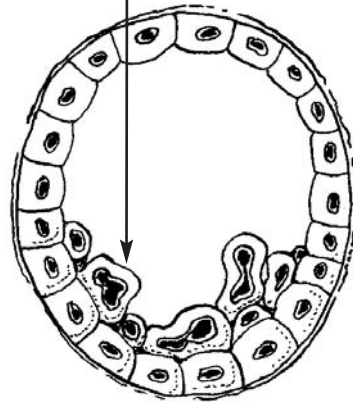
If you have atypical hyperplasia, you should discuss your surveillance plan with your health-care provider. Some healthcare providers recommend a clinical exam and a mammogram more than once a year.

Normal Cells



**Normal Cell Wall Lined With
1-2 Layers of Cells That All Look Alike**

Atypical Cells



**Atypical Hyperplasia Means
Extra Layer of Abnormal Cells
Do Not Look Like Normal Cells
But Are Not Cancerous**



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Breast Abscess

A breast abscess is a localized collection of infection (pus) in the breast. The abscess develops in a blocked duct of the breast when bacteria enter and begin to grow in the fluid. The most common bacteria are staphylococcus aureus; less frequent are staphylococcus epidermidis and beta hemolytic streptococcus.

A breast abscess may occur after mastitis that was not treated quickly enough with appropriate antibiotics. The infection increases and results in an abscess. Abscesses are most common in lactating (milk-producing) mothers, but can be found in women who are not lactating, usually from a blocked duct under the areola and nipple complex.

Signs and symptoms of a breast abscess:

- Breast which becomes swollen, tender and warm
- Fever over 101° F
- Flu-like symptoms with extreme fatigue
- Breast pain which is increasing
- Area which has localized pain and usually a lump

If you think you have a breast abscess, notify your physician immediately.

Your physician will:

- Examine your breast
- Culture any fluid or infection
- Order antibiotics
- Determine if breast feeding needs to be stopped
- Determine if the abscess needs surgical removal



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Breast Cellulitis

Cellulitis is an infection of the skin or connective tissues of the breast. It can occur when lymphatic drainage has been reduced by lymph node removal from surgery or radiation therapy. It can occur in the surgical arm, chest wall or breast. Women who have had lumpectomies have a potential to have cellulitis in the breast any time after surgery. The same is true for women who have had a mastectomy; the chest wall is subject to infection. This condition is also common in diabetics and immunosuppressed individuals.

Signs and Symptoms

Infection starts in one area of the breast or chest wall, causing it to become tender, swollen, red, painful and warm to the touch. If left untreated, the infection can spread quickly. Fever and flu-like symptoms may occur.

Treatment

Cellulitis needs immediate treatment with an antibiotic. If you experience any symptoms, report them to your healthcare provider immediately. After medication is started, symptoms usually improve in two to three days. However, all medication should be taken as prescribed. A well-fitted bra will help stabilize the breast and prevent pain caused by movement.

Cellulitis can be recurrent and require treatment multiple times. Some physicians give women with a previous history of infection a standing prescription to carry with them so an antibiotic can be started at the first sign of recurrence. Some infections require intravenous (IV) antibiotics because of their severity.



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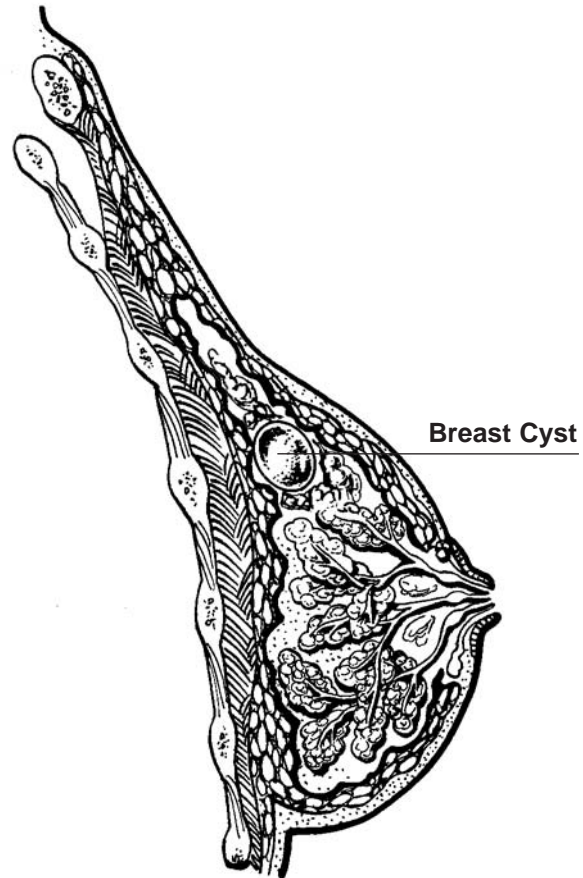
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Breast Cysts

Definition of terms:

- Aspiration** – To withdraw fluid or cells with a needle
- Benign** – Not cancerous; no threat to the body
- Cyst** – A fluid-filled sac
- Gross cyst** – A large cyst
- Intraductal papilloma** – Noncancerous, wart-like growths inside ducts
- Malignant** – Cancerous; a threat to the body
- Macrocyst** – Large cyst that can be felt with fingers
- Microcyst** – Small cyst that can only be seen with mammography

Breast cysts are a common benign breast disorder found in women 35 to 50 years of age. Cysts are most likely to occur during the years right before menopause. A year or two following menopause, cyst formation usually stops, unless estrogen supplements or estrogen-like substances, such as digitalis, are prescribed. The cysts may vary in size, ranging from microscopic (microcyst) to large (macrocyst). Cysts tend to occur in both breasts, with more than one cyst appearing in each breast and with a combination of both microcysts and macrocysts. Studies show that the left breast tends to have more cysts than the right.



Most cysts originate in the lobules, the end points of the ducts. The cysts fill with fluid because of the lack of elasticity in the area of the lobules or from a blockage higher in the duct. Often, they develop quickly into very large, palpable (one you can feel) lumps. They range from spongy-soft to firm in consistency. The pressure of the fluid in the sac determines how firm they feel. If the cyst has been in the breast for a long time, the wall of the cyst may become thicker and feel very firm. The outside surface feels smooth and is usually round or oval in shape. When feeling the cyst, it will move freely in the breast, as if it could slip from under your fingers.

When cysts are identified by palpation (touch) or mammography, they are often confirmed with ultrasound. Your healthcare provider may attempt to aspirate the fluid from the cyst. An anesthetic (numbing medication) may or may not be given to aspirate the cyst. The aspiration procedure is uncomfortable but not very painful. A small needle with an empty syringe is placed into the cyst. The healthcare provider stabilizes the cyst with the other hand to prevent movement. The plunger of the syringe is retracted and the fluid in the cyst is drawn into the empty syringe. An older cyst may have developed a very thick wall, making aspiration difficult. You should not be able to feel a lump after aspiration.

Cyst fluid is normal breast fluid containing dead cells from the lining of the lobule in which it develops. If cultured, it is sterile (no infection). The fluid taken from the cyst will range from light yellow to dark yellow, or to a greenish-yellow. Cysts that have been in the body for longer periods of time will have darker and thicker fluids. Occasionally, the fluid will show some evidence of bright red blood, which probably means that a small vessel was pricked when the needle was inserted. If the wall of the cyst collapses and cannot be felt, the healthcare provider will probably schedule you to return to check the area or perform a mammogram. If the cyst produced a dark, chocolate milk colored fluid, old blood is probably involved. Again, a return visit may be necessary to evaluate the area, perform a mammogram, or perform a biopsy. Intraductal papilloma (benign) can sometimes develop in a cyst and cause the bloody appearance. However, because cancer may also have blood as a symptom, further evaluation is necessary.



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Breast Pain

Definition of terms:

Abscess— A collection of pus from an infection

Antibiotic— A medicine used to destroy bacteria in the body

Cyclic— Occurs in cycles; fluctuates during the menstrual cycle

Cyst— A fluid-filled sac

Duct Ectasia— Ducts of the breast filled with cellular material, creating tenderness and discharge that may or may not be infected with bacteria

Hormones— Chemicals made by the body that affect function of cells. The most common female hormones are estrogen, progesterone and prolactin

Fibroadenoma— Benign fibrous tumor

Mastalgia— Pain in the breast

Mastitis— Pain and tenderness of the breast; caused by inflammation

Mastodynia— Pain in the breast

Musculoskeletal— Pertaining to the muscles and bones of the body

Noncyclic— Does not occur in cycles

Ovulation— Middle of menstrual cycle when egg is released

Pain in the breast is referred to as mastalgia or mastodynia. Pain may be characterized as cyclic or noncyclic. A healthcare provider's examination and a mammogram can most often determine the cause of the pain. Breast pain may be uncomfortable and annoying, but it is usually not unbearable. What seems unbearable is the fear that it may be cancer. In studies of women diagnosed with breast cancer less than 10 percent had any pain involved. Pain with breast cancer is not common. Most pain is due to hormonal or benign breast conditions. However, all breast pain needs evaluation to determine its cause. To assist your physician, it will be helpful if you understand the different kinds and characteristics of breast pain.

Cyclic pain appears to be related to the female hormones estrogen, progesterone and prolactin. Their effect on breast tissue varies at different times of the monthly and life cycles. Pain related to hormonal changes usually begins at ovulation and increases until the menstrual period begins. After menstruation, the pain decreases. Both breasts are usually involved, but occasionally, one breast will experience a greater degree of pain. Often, the pain is greatest in the upper-outer quadrants (from the nipple back toward the armpit) and sometimes radiates to the armpit and arm. The discomfort is felt throughout the area and is often described as a dull, aching pain, as if the breast were filled with milk. Pre-menopausal women experience this pain. Menopause relieves the symptoms unless a woman takes hormone replacement therapy.

Pain and the Drug Connection

The most common causes and promoters of breast pain are prescription medications, over-the-counter medications, and herbal products. These can greatly increase cyclic pain and be mistaken for breast disease. Because drugs can produce different responses in different women, some may experience breast pain as a side effect while others may not. The most common drug categories are hormonal, blood pressure, heart, pain relievers, antidepressants, and gastrointestinal medications. Additionally, some herbal products can cause breast pain such as Ginseng or Dong Quai (recommended for premenstrual syndrome and menopausal side effects). Ma Huang (Ephedra Sinica or Chinese Ephedra) is a botanical source of ephedrine and pseudoephedrine that is found in many weight loss products and will cause breast tenderness and pain. Guarana or kola nut, found in many energy and weight control products, is actually a type of caffeine. A complete list of over 400 drugs with known side effects of promoting breast pain are listed in *Solving the Mystery of Breast Pain*, from EduCare Inc.

Do not stop any prescription drug without consulting your healthcare provider. Instead, bring to their attention the drug you are taking and the potential relationship to promoting your pain. If you are taking over-the-counter herbal supplements, you can stop them for several weeks to see if they are causing your breast pain.

Cyclic Pain Interventions

The first intervention should be wearing a well-fitting bra that holds your breast to the chest wall. Sleeping in a sports bra is also helpful. This keeps the breasts from moving freely and decreases pain.

Dietary changes have also helped some women. Refraining from or greatly reducing the amount of caffeine (coffee, tea, colas, chocolate) consumed and eating a low-salt diet may provide relief for some women. Supplements, including vitamin E and B-complex, are occasionally recommended by physicians as helpful. Ask your healthcare provider for recommendations in dietary changes and supplements.

Drug Therapy for Cyclic Pain

For some women, low-dose birth control pills may relieve cyclic pain. Birth control pills cause the hormones in the body to remain more consistent and balanced by reducing wide hormonal fluctuations some women experience. However, birth control pills may stimulate breast pain for some women. If pain starts after birth control pills are prescribed and continues for several months, inform your healthcare provider. The dosage may need to be changed.

Danazol®, a male hormone drug, may be prescribed for highly painful mastalgia not relieved by other methods of treatment. It is effective in altering the balance of female hormones. Some women avoid taking the drug because it is expensive and because it can cause unwanted masculine side effects, such as the growth of facial hair.

Bromocriptine, a drug that blocks the hormone prolactin (stimulates breast milk production), may also reduce breast pain. Progesterone, one of the major premenopausal female hormones, is also being used to reduce pain. When estrogen levels are too high and out of balance with progesterone (called estrogen dominance), pain may occur. Progesterone cream, sublingual lozenge (under the tongue), or pills can correct the deficiency in progesterone. Natural progesterone prepared by a compounding pharmacist appears to be the most effective. Many women report reduction in breast pain with progesterone.

Noncyclic Pain

Noncyclic pain differs from cyclic pain in that it has no relationship to the menstrual cycle and the changes in hormonal levels during the month. This pain can be continuous or may only occur from time to time. The pain is usually localized to a specific area in one breast (unilateral). It is often described as a sharp, stabbing, or burning sensation in the breast. This pain has been linked to fluid-filled cysts, fibroadenomas, duct ectasia, mastitis, injury, and breast abscesses. Treatment may include withdrawing the cyst fluid, surgically removing the fibroadenoma, prescribing antibiotics for duct ectasia, mastitis or abscesses.

Some noncyclic pain is also related to musculoskeletal causes. The most common is pain that comes from a pinched nerve in the back or cervical (neck) region causing radiculitis (inflammation with pain). Often, a history of back injury, scoliosis, arthritis, or osteoporosis is involved. The pain radiates to one breast, causing pain.

If the second intercostal nerve is involved, the pain and tenderness will appear in the upper, outer breast, under the arm and will extend down the arm often causing numbness and tingling of the fingers. If the pressure is coming from the third nerve in this area, there will be pain and tenderness along the nipple line.

To check for this pain, a healthcare provider will ask the patient to elevate her arm on the painful side over her head. The physician, standing behind the patient, lifts the painful breast toward her breastbone and applies pressure in the mid-underarm area. If the pain is coming from a pinched nerve, this will cause a very tender area(s) to radiate pain into the breast. Pressure applied to the mid-axillary line causes pain.

Another cause of breast pain originates in the area of the breastbone and ribs and is known as Tietze's syndrome. It is commonly called painful costochondritis (inflammation of the cartilage of the ribs). This pain is localized in the medial half (closest to breastbone) and is tender when pressure is placed on the breastbone, when the rib cage is moved, or when a deep breath is taken. This pain often occurs after doing heavy lifting or activities that stretch the upper body. If the pain is from costochondritis, ibuprofen or aspirin taken for several days on a regular basis will usually reduce the pain.

Other causes for breast pain may be from phlebitis (an inflamed vein), called Mondor's syndrome. Even infected teeth have been shown to cause referred breast pain.

Identifying Your Pain

If you cannot determine if your pain is cyclic or noncyclic, keep a record of the pain you experience daily and its time in your cycle. After two months, your healthcare provider will be able to tell if the pain is associated with the fluctuating hormones of your menstrual cycle or bears no relationship to hormonal changes and is possibly coming from breast disease or conditions.

Cyclic pain has no relation to cancer and noncyclic pain is rarely a sign of cancer. However, all pain should be checked out. Most often, breast cancer pain is localized in the breast (one place hurts), continuous (not changing with different times in the menstrual cycle), and usually occurs in only one breast.

If you have breast pain, schedule a breast exam with a healthcare provider. It is important to inform your healthcare provider of any new prescription or over-the-counter medications you are taking, including herbal supplements. After a complete history and breast exam, a mammogram will probably be ordered (if over 35) to search for any cause not apparent on the exam. Following mammography, an ultrasound may or may not be needed. If the exam and the imaging procedures are negative (no suspicious findings), a search to determine what type

of pain and how to relieve your pain should be started. If an area or concern is found during testing, a biopsy may be needed to determine the cause or to rule out cancer.

The majority of breast pain is not related to cancer, but all pain needs a thorough evaluation by a healthcare provider.

Comparison of Cyclic, Non Cyclic and Musculoskeletal Pain

Feature	Cyclic	Non Cyclic	Musculoskeletal
Age of Onset	30's	30 - 40's	Any Age
Location	Bilateral Upper Outer Area	Unilateral One Area	Usually Unilateral Near Breastbone
Area	Spread Out	One Spot	Different Parts of Breast
Type of Pain	Dull, Aching	Sharp, Stabbing	Burning, Aching
Status	Pre-Menopausal	Pre/Post Menopausal	Any Age
Hormone Therapy	Responds Well	Minimal Response	No Response
Ibuprofen/Aspirin	Some Help	Some Help	Very Helpful



Duct Ectasia — Periductal Mastitis

Mammary Duct Ectasia (Plasma Cell Mastitis or Periductal Mastitis)

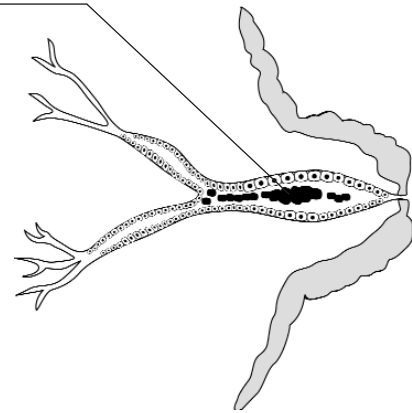
Normal ducts are lined with one or two layers of cells. Mammary duct ectasia is a condition that occurs most frequently in women immediately before and after menopause. It may occur in one, several or all of the ducts on one or both breasts.

Ducts located beneath the nipple become filled and dilated with the cells that line the ducts. This occurs because of stagnation, and not because of a blockage. This accumulated debris appears as a thick, white to greenish-gray to blackish discharge from one, several or all of the nipple openings. The discharge can cause the nipple to itch and become irritated.

The internal accumulation of debris in the duct can also cause a break in the cell walls (called mucosal ulceration) that can cause a bloody discharge. This ulceration causes the tissues around the ducts to swell from a chemical inflammatory reaction to the leaking fluid from inside the ducts. During this inflammatory progression of the condition, pain varies from mild to severe.

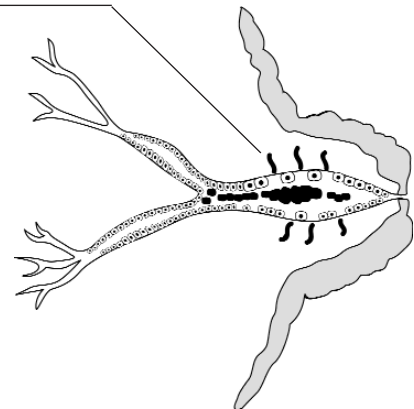
Duct Ectasia

Old cells collect in the duct and stagnate



Internal Accumulation

Fluid seeps through into surrounding tissues

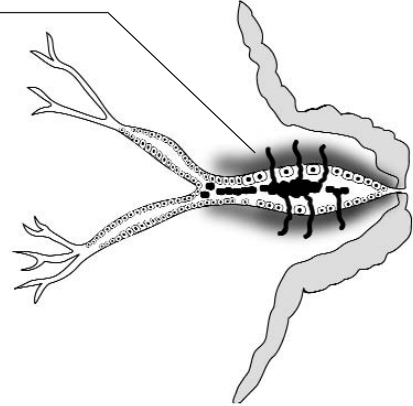


The inflammation causes the tissues around the ducts to become fibrosed (thickened and hardened). During this time pain may be intense. The inflammation can develop into an infection (mastitis) and may even develop into an abscess (a localized collection of pus). Antibiotics will usually resolve the infection, but, occasionally, surgery is required to remove the abscessed duct(s).

Late stage progression of the disease will often cause nipple inversion. Mammary duct ectasia is not a cancerous condition. Smoking greatly increases the percentage of duct ectasia conditions that develop into chronic infections and abscesses. Duct ectasia can become a chronic problem with periods of remission and then exacerbations.

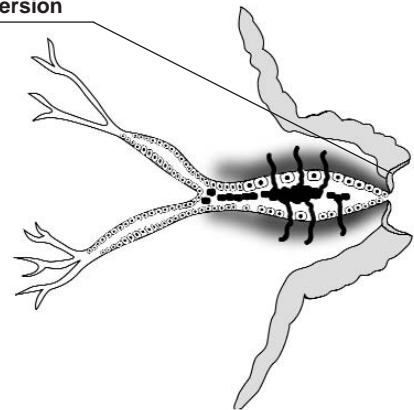
Inflammation

Tissues around duct become inflamed, painful and will eventually harden



Nipple Inversion

Late stage disease often causes nipple inversion





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Fat Necrosis Tumor

Definition of terms:

Benign— Not cancerous; no threat to the body

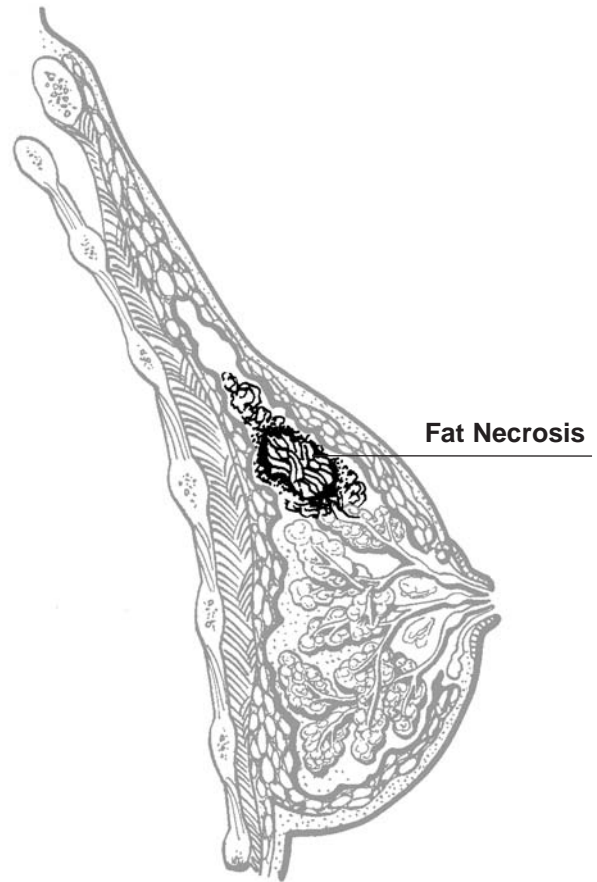
Hematoma— Accumulation of blood under skin from internal bleeding

Necrosis— Death of cells due to injury or disease

Microcalcifications— Small areas of calcium deposits seen on mammography; may be related to a malignant or benign condition

Fat necrosis is a benign change in the breast caused by an injury. It is often difficult to distinguish from cancer because of how the lesion feels and its appearance on mammography. The lesion may feel very hard and firm. A biopsy is usually required. On a mammogram the area may have scattered microcalcifications. Evaluation is required to rule out cancer.

An injury to the breast that causes a hematoma will often cause numerous changes in the cells in the affected area of the breast. Over time a round, firm area forms from the damaged cells. Usually no pain is involved. Occasionally, skin retraction or puckering may occur in the skin over the area. Fat necrosis is not cancerous and does not increase the risk of breast cancer. Surgery is usually recommended to remove the lesion because it can hide other changes in the breast.





Fibroadenoma

Definition of terms:

Benign— Not cancerous; no threat to the body

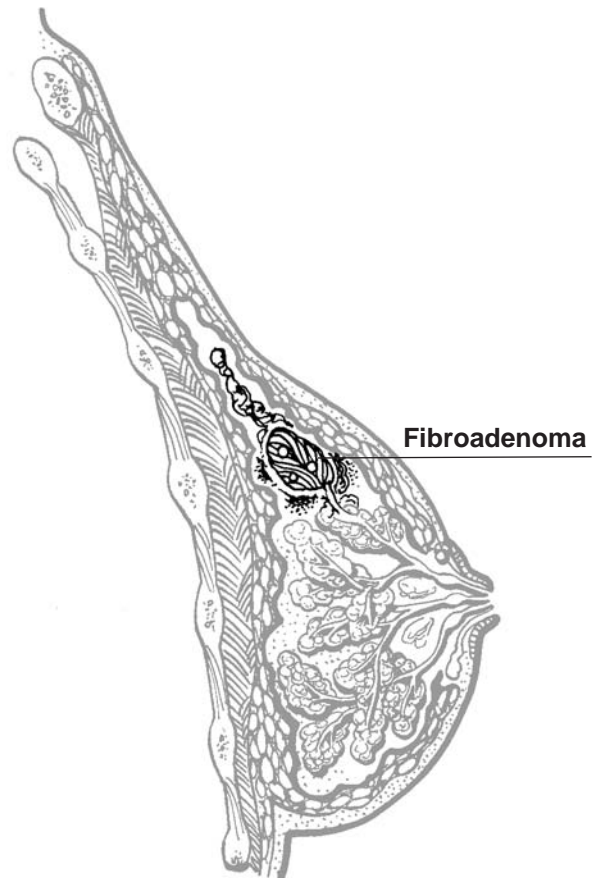
Fibroadenoma— **Fibro**, fibrous tissue; **adeno**, pertaining to gland; **oma**, tumor

Malignant— Cancerous; a threat to the body

Fibroadenomas are solid, benign (non-cancerous) tumors composed of fibrous and glandular tissues that are movable and not anchored in the surrounding breast tissues. They are the second most commonly occurring type of benign breast lump. Fibroadenomas occur most commonly between the ages of 20 and 40, but they can occur in even younger women. The lump is most often painless. It feels rubbery and firm because the outer rim has a dense collagen layer. Size may vary from a very small pea to a large lemon. There may be more than one lump in a single breast, or lumps may occur in both breasts. The hardness of the lump does not change during the menstrual cycle.

A fibroadenoma may be seen on a mammogram or ultrasound with characteristics that help identify it (smooth borders, round or lobulated). If mammography and ultrasound identify the characteristics of a fibroadenoma, a follow-up after six months may be recommended by some physicians. Other physicians prefer to perform a core biopsy for absolute confirmation and then observe the area for

changes. Some studies have shown that approximately 50 percent of fibroadenomas disappear in several years. Others prefer to remove them surgically to prevent concealing any other change that could occur in the breast, or because the patient would rather have them removed.





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Fibrocystic Changes

Other terms used to describe:

- Chronic cystic mastitis
- Cystic mastitis
- Fibrocystic disease
- Mammary dysplasia

Definition of terms:

Chronic— Lasting a long period of time

Cystic— Pertaining to a closed sac with a definite wall that contains fluid

Dysplasia— Abnormal development of tissue

Hormones— Chemicals made by the body that affect the function of cells; the most common female hormones are estrogen, progesterone and prolactin

Fibrocystic— Cystic formations containing either fluid or solid material that cause a change in the breast that can be felt or seen on x-ray

Mammary— Referring to the breast

Mastitis— Inflammation (pain, warmth, redness) of the breast

Microscopic— Too small to be seen by the eye; only visible with a microscope

Fibrocystic changes, a term used by physicians, including pathologists, describe a number of non-cancerous conditions occurring in the breast. These conditions are found in the breasts as lumps or masses that occur and change with the menstrual cycle and may be accompanied by pain and tenderness. Previously, the term "fibrocystic disease" was used to describe the process and was falsely implicated as a risk factor for cancer. However, at least 50 percent of all women have irregular feeling, lumpy breasts. Furthermore, studies have shown that as many as 90 percent of women have microscopic, fibrocystic changes.

These changes are a normal response to the hormonal stimulation of the breast tissue and **do not represent a "disease" process**. Thus, the term "fibrocystic disease" is not an accurate description of the changes. The process is now more appropriately called **fibrocystic changes** and they do not increase the risk for cancer. The term is commonly applied to any change that is not cancerous. Because there is no exact clinical definition, ask your physician precisely what types of changes have been found in your breast tissue if you receive the diagnosis of fibrocystic changes.

Breast Lumpiness

The breasts are very complex glandular organs that consist of 15 to 20 lobes that radiate from the nipples. These lobes further divide into 20 to 40 lobules that contain 10 to 100 alveoli where the milk or fluid is produced in the breast. This whole glandular structure is changing constantly because of the stimulation of estrogen and progesterone hormones on the breast tissue. When the stimulation begins after the menstrual period, the breasts respond by beginning to fill with fluid. Each breast will produce and store 15 to 30 ccs (3 to 6 teaspoons) of fluid in the ducts during the month. This causes a feeling of lumpiness, especially right before a menstrual period. The hormonal influence also causes extra layers of cells to be produced in the ducts. The combination of the two causes an increase in the size of the breasts and possibly tenderness or pain.

Some drugs routinely prescribed by a physician can cause some women to experience lumpiness, fullness, and tenderness in the breast tissues. This type of lump feels very similar to those produced by hormonal changes in the body. The changes are not harmful but the causes may confuse you or your physician. Examples are:

Blood pressure medications

Aldactone® (a diuretic)
Aldomet®

Heart medications

Digoxin®
Lanoxin®(digitalis)
Inderal®
Lopressor®
Tenormin®
Visken®

Antipsychotic medications

SSRI medications

Paxil
Prozac
Zoloft
Celexa
Cipramil
Serostat
Cipram

Antianxiety medications

Ativan
Valium
Xanax

Antinausea medications

Compazine®

Gastrointestinal medications

Tagamet®

Checking Your Breasts

When you check your breasts before your menstrual period, they will feel different than at the end of your period. Therefore, it is very important to examine your breasts on a regular basis at the same time of the month; the best time is at the end of the cycle. The increase in cells and fluid in the breast will often cause them to feel lumpy. If you find a lump in a breast, feel the opposite breast in the same area for a similar change. If one is found, you probably have discovered a normal hormonal change. It is safe to wait and go through a menstrual period and re-check the same area. If the area is smaller or softer at your second self-exam, then it has been stimulated by hormonal changes that are normal. If the lump has not become softer or smaller, a physician will need to evaluate the area. Every woman has a normal pattern of lumpiness and bumpiness in her breast tissue. Only through regular self-exams can a woman get to know this pattern of lumpiness in her own breasts. A physician examining the breasts once a year will not be able to learn the individual patterns of breast lumpiness.

Breast Pain

The term “mastalgia” (“mast” is Latin for breast, and “algia” for pain) is used by many physicians. Most women experience increased tenderness in their breasts before their period. Again, this is from fluid accumulation in the breasts. Some women experience greater pain prior to the beginning of the period. This pain usually decreases at the end of the period. This type of pain is associated with fluid and the stimulation of the breast tissues by the hormones estrogen and progesterone. If pain is not associated with the menstrual cycle or hormonal menopausal medication, consult your physician.

Some women report less pain when caffeine is decreased or eliminated from their diets. Caffeine-containing substances include coffee, tea, colas, and chocolate. Other women are not affected by eliminating caffeine from their diets. Reducing sodium intake has also been effective in reducing pain for some women. Some physicians have found their patients benefit from using vitamin E and other vitamin

supplements to reduce pain. Herbal supplements such as Ginseng, Dong Quai, kola nut and Ma Huang (ephedra) may actually increase breast tenderness, pain, and/or discharge, promoting fibrocystic changes. Check your supplements to see if they contain any of these herbs if you are having problems. Contact your physician for recommendations.

Breast Discharge

Some women experience a clear to milky color discharge from their breasts right before the start of their monthly cycle or at the beginning of their menstrual period. This type of discharge is not unusual. It may also be noticed after sexual stimulation or when women begin taking estrogen supplements. The medications listed above have also caused some women to experience breast discharge. An occasional small amount of discharge from both breasts is not abnormal. However, if this discharge continues throughout the month, comes from only one breast, or has any evidence of blood, contact your physician.



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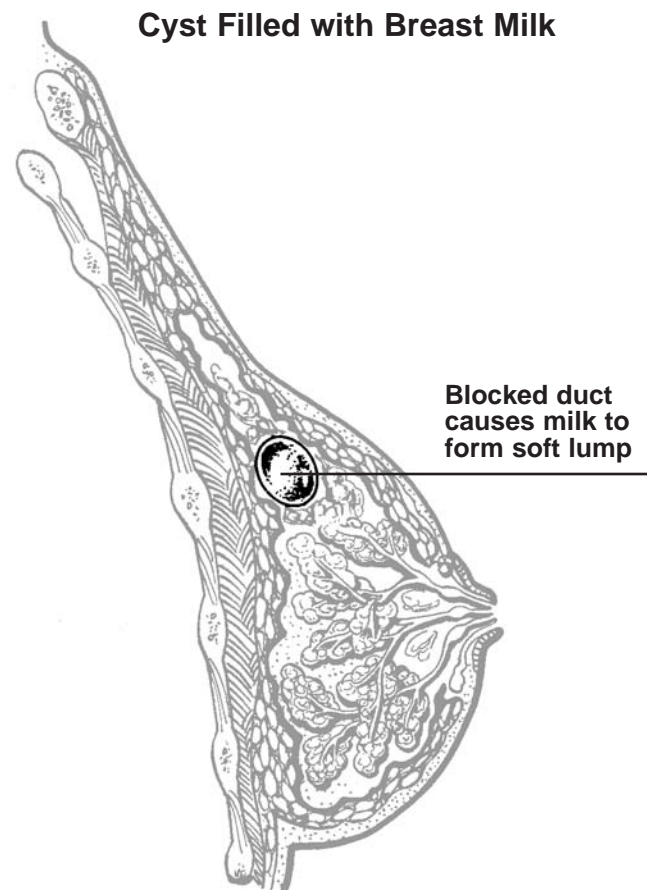
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Galactocele

A galactocele is a non-cancerous (benign) cyst of milk-like fluid that may occur while a woman is pregnant as well as during or after breast-feeding. Galactoceles are often found by a woman who touches her breast and discovers a lump by accident or during a breast exam. The lump is most often painless and its texture may range from spongy to very firm. Galactoceles range from 2 - 5 cm in size. There may be one or multiple galactoceles in the breast. Women who have a chronic condition of excessive milk production when not pregnant caused by high levels of the hormone prolactin are also at risk for galactocele formation.

A galactocele is diagnosed by identifying its characteristics by mammography or ultrasound. Mammography shows a round lump containing a high fat-fluid level. Ultrasound shows a round, fluid-filled lump. Galactoceles are often hard to distinguish from other benign breast cysts. Recent pregnancy and breastfeeding are the most common factors that distinguish a galactocele from a breast cyst.

Treatment usually consists of aspiration by a fine needle for fluid analysis. If the fluid aspirated appears normal to the physician, no other treatment is required. If the galactocele has been in the breast for a long period of time, the fluid may be thicker and darker. Galactoceles may require repeated needle aspirations, but surgery is rarely needed. Like other breast cysts, galactoceles are harmless.





Gynecomastia — Male

Gynecomastia is a benign (noncancerous) enlargement of the male breast. It may occur in one or both breasts from birth to old age.

Infant Gynecomastia

At birth, male babies may have enlarged breasts that produce a small amount of milky discharge. This period of gynecomastia comes from the high levels of the mother's hormones that the baby receives before birth. The condition may last for weeks and may even extend to months for those babies who are breast-fed. This is a normal condition. The gynecomastia gradually resolves itself and the male child's breasts return to normal.

Adolescent Gynecomastia

Gynecomastia often occurs at puberty. Gynecomastia may result when the hormones begin to fluctuate between the ages of 11 and 17. The exact hormonal change that causes gynecomastia is not well understood. This type of gynecomastia, called **pubertal gynecomastia**, affects both breasts in about 75 percent of cases; the remaining cases involve one breast. The glandular tissues under the nipple and areola enlarge, feel rubbery and may be tender. The condition is transient, usually passing unnoticed or resolving in several months. However, for a few young males, the condition may persist for two years or longer. Occasionally, the condition will require surgery. Surgery consists of removing only the glandular tissue, leaving the nipple and areola intact.

Adult Gynecomastia

Gynecomastia may also occur in the later stages of life between 50 and 70 years. The breasts may become enlarged under the nipple, feel rubbery and tender. The condition is usually in both breasts. However, the enlargement may start in one breast and then include the other. Bilateral (both breasts) is usually the symptom of a hormonal imbalance, medications or underlying disease but is not related to cancer of the breast. Cancer of the breast usually is associated with a hard, stony mass in one breast or, occasionally, a nipple discharge from one breast.

Causes of Gynecomastia

1. **Hormonal** (both breasts 75% of the time)
 - Normal fluctuation of hormones
 - Underlying disease causing hormonal change
 - Klinefelter's syndrome
2. **Secondary to other diseases** (usually both breasts)
 - Cirrhosis of the liver
 - Chronic liver disease
 - Thyroid disease
 - Infectious hepatitis
 - Tumor of the liver
 - Starvation
 - Chronic lung disease
 - Pituitary tumor

3. Drug Related (both breasts)

■ Antacids

Cimetidine
Ranitidine

■ Antibiotics

Isoniazid
Metronidazole

■ Anti-hypertensive (Blood Pressure)

Guanabenz
Methyldopa
Reserpine

■ Anti-nausea

Prochlorperazine
Thiethylperazine

■ Anti-Neoplastic (Cancer)

Busulfan
Methotrexate
Procarbazine
Vincristine

■ Cardiac (Heart)

Calcium channel blocker
Digoxin
Propranolol

■ Diuretics (Fluid Control)

Amiloride
Spironolactone
Thiazide

■ Hormones/Hormone-like

Clomiphene
Diethylstilbestrol
Estramustine
Estrogen
Flutamide
Leuprolide
Tamoxifen

■ Narcotics

Heroin
Methadone

■ Tranquilizers

Chlorpromazine
Fluphenazine
Perphenazine
Thioridazine
Trifluoperazine

■ Other

Auranofin
Amphetamines
Anabolic steroids
Diazepam
D-Penicillamine
Ergotamine tartrate
Ketoconazole
Marijuana
Neuroleptic drugs
Phenothiazines
Sulindac
Theophylline
Tricyclics

4. Cause Not Known (usually one breast)

Diagnosing Gynecomastia

Bilateral (both breasts) gynecomastia usually is time-limited and resolves within months. When it is persistent, physicians will look at medications or for an underlying disease. The hormone levels of the body (estrogen, testosterone, prolactin, luteinizing hormone, and follicle-stimulating hormone) can determine if there is a hormonal imbalance. If the gynecomastia is unilateral (one breast), a physician will closely evaluate the area by feeling for signs of a lump or thickening and may recommend a mammogram in order to rule out cancer.

Treatments for Gynecomastia:

Puberty

Gynecomastia during puberty is not treated because it usually diminishes over several months. However, if it extends over a longer period of time, an underlying cause will be investigated and, occasionally, surgical removal of the glandular tissues may be considered. An incision is made around the edge of the areola and the enlarged breast tissues are removed, leaving the nipple and areola intact with no noticeable visible evidence of a surgical scar.

Adult

Adult gynecomastia, like pubertal, can occur as a result of hormonal fluctuations and usually disappears in several months. Observation is usually the first line of treatment if no hard mass is present. Because adult-onset gynecomastia may result from

medications, the intake of all medications (over-the-counter and prescription) should be considered. If a medication is the cause of the enlargement, a physician can review the drug for an alternate one that does not have the same side effect. Remember: gynecomastia does not increase the risk for cancer and the concern is cosmetic. If the condition continues, physicians will look for an underlying disease and, if found, the disease will be treated. If the condition is hormonally related, hormones may be given. Occasionally, surgery may also be needed for persistent gynecomastia.

The greatest concern is when one breast experiences enlargement. Since cancer usually occurs in one breast and has a firm distinct lump, any singular breast enlargement needs close examination by a physician.



Itching Breasts

My breast itches! I have a rash on my breast! What is causing it?

If your breast itches or you have a rash on your breast, you may be concerned as to what is causing it. The first step that a healthcare provider will take is to observe your breast to determine:

- Are one or both breasts involved?
- Is there a rash on one or both breasts?
- Does the rash cover the entire breast or is it only in one localized area?
- Is the nipple involved?
- If there is a rash, what does the rash look like?
- Are there blisters?
- Is there evidence of infection?
- How long has the breast(s) been itching?

Contact Dermatitis

Most causes of breast itching are from contact with materials or chemicals that irritate the skin in the area of contact. The area may only itch or it may become red and even have small blisters. If the itching or rash has recently begun, check to see if you are using any new soaps, body lotions or powders, laundry detergents, or fabric softeners. Most contact dermatitis occurs several days after the irritation comes into contact with the skin (2 to 5 days). Spandex (elastic) is also another cause of itching for some women. If you have come into contact with any of these products, stop

using them. Purchase a tube of cortisone cream from your pharmacy and apply several times a day directly to the irritated or itching area. You may also take 25 to 50 mg of Benadryl (over-the-counter antihistamine) if the itching is extreme. If the cause is contact dermatitis, you should notice a reduction in irritation and itching after applying the cortisone cream and discontinuing use of the irritant product within three to four days.

Cancerous Breast Conditions

There are some cancerous breast diseases that have symptoms including itching and skin irritation.

Paget's disease of the nipple, a type of breast cancer, often starts with itching of the nipple. Paget's disease usually occurs on only one nipple and may also include:

- Persistent crustiness, scaliness, or redness of the nipple
- Itching or burning of the nipple and surrounding areola
- Bleeding or oozing from the nipple and areola

Often Paget's disease is confused with breast eczema, a highly treatable condition. However, the signs of Paget's disease do not typically disappear with routine treatment for eczema or infection and usually only affect one nipple. If you have experienced any of these symptoms on your breast(s), treat it with cortisone cream for several days; if it does not improve, contact your healthcare provider.

Another cancer, **inflammatory breast cancer**, may also start with itching of one breast. Signs and symptoms of inflammatory breast cancer include:

- Breast size may increase rapidly; sometimes a cup size in a few days
- Itching may be unrelenting and unaffected by medicated creams or oral medications
- Pink, red, or dark colored area may appear on the skin
- Discoloration appears to be a bruise that does not go away
- Orange-peel skin (pin-point dimpling) may occur (called peau d'orange)
- Ridges and thickened areas of the skin may appear
- Breast is warm to the touch
- Color and texture changes of areola may occur

- Discoloration ranges from a reddish-pink or reddish-purple to reddish-brown
- Swollen axillary lymph nodes or supraclavicular nodes may be felt
- Rarely, a lump may appear that can grow very rapidly (normally there is no evidence of a lump with IBC)
- Nipple flattening or retraction
- Nipple discharge occurs occasionally
- Breast pain may be constant or stabbing
- Discomfort ranges from tender to painful

Most itching and breast irritations are highly treatable. However, if after treatment the itching or rash does not go away, contact a healthcare provider as soon as possible to diagnose the cause of your discomfort.



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Lipomas

Lipomas are noncancerous tumors composed of fat cells. They may appear in various parts of the body including the breast. They may be found in the breast as a spongy lump with relatively smooth borders and are moveable. Lipomas cause no pain and vary in size.

The cause of lipomas is unknown, but is probably an inherited characteristic. Minor injury to an area may stimulate growth of a lipoma.

Since the tumor is benign, they do not require treatment but are often removed surgically. Lipomas in the breast may be removed because they could conceal a cancerous growth in the same area.



Mastitis

Mastitis is a condition of inflammation or infection of the breast. It occurs when bacteria enter into the ducts through an open area in the nipple. Mothers who are breastfeeding are most likely to have mastitis. It can occur in women who are not lactating (producing milk) and occurs rarely in men. Often the source of the bacteria is from the mouth or nose of the nursing infant. The most common bacteria is *Staphylococcus aureus* (commonly called "staph") and, less frequently, *Staphylococcus epidermidis* or *beta hemolytic streptococcus*. These bacteria are very responsive to antibiotic treatment.

Factors that lead to mastitis are an abrasion on the nipple, blocked milk ducts, or an incomplete let-down reflex, usually due to emotional trauma. Milk ducts can become blocked from pressure from a very tight fitting bra or prolonged times between breast feedings. Bacteria enter the nipple, move to the ducts and begin to grow in the milk that is blocked. Mastitis may develop anytime, but is most common three to four weeks after giving birth.

Signs and symptoms of mastitis:

- Breast becomes swollen, tender, and warm
- Fever of 101° F
- Flu-like symptoms with extreme fatigue
- Breast pain

Your physician should be notified.

Your physician will:

- Examine your breast
- Culture the fluid from the breast
- If infection is present, order antibiotics
- Inform you if you can continue to breast feed (most mild cases do not prevent nursing)

You can:

- Manage pain with analgesics such as Tylenol®
- Use ice packs on the breast
- Wear a good fitting bra to give support and prevent movement
- Minimize activities that require vigorous arm or body movements
- Take all medication prescribed by physician (symptoms may improve in 2-3 days, but complete the entire course of medication)



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Mondor's Syndrome

Mondor's disease is a benign (non-cancerous) inflamed vein in the breast or chest wall near the breast. The condition can occur after an injury, surgery, excessive exercise, radiation therapy, jellyfish bites, rarely from a nearby cancer or from an unknown cause. The first sign of Mondor's is usually chronic pain in the breast. When examining the breast, you will feel an elongated, thickened area that follows the natural path of a vein going through the breast. Inflammation usually occurs in one of three veins - the thoracoepigastric, lateral thoracic or superior epigastric vein. The vein becomes inflamed, and the wall of the vein thickens from inflammation.

Diagnosis may require a combination of a mammogram, ultrasound or clinical breast exam by a healthcare profession. The diagnosis is made by identifying the thickened vein and ruling out any other area in the breast. Future microcalcifications may occur in this area on a mammogram.

After diagnosing Mondor's disease, treatment is usually:

- Pain medicines (over-the-counter or prescription)
- Moist heat to the area when painful
- Restriction of activities that cause breast movement
- A well-fitted bra that is worn day and night until pain is resolved

The condition is time-limited, with pain usually resolving over a period of several weeks. However, you may be able to feel the cord-like vein for months.



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Nipple Discharge

Breast discharge is a common complaint with three possible causes: 1) a hormonal imbalance, 2) a response to medications (pharmacological discharge), or 3) a lesion or diseased breast. Studies have shown that nipple discharge can be found in 50 to 80 percent of women with no disease being present. Most women have a small amount of discharge when their breasts are squeezed. This is normal, but **all discharge needs to be evaluated to determine the primary cause.**

Normal Discharge

This is usually from both breasts (bilateral) and from multiple duct openings in the nipple. The color of the fluid is opaque or milky. Production is stimulated by a woman's natural hormones before her menstrual period, by sexual stimulation and by some medications. Excessive squeezing or manipulation can stimulate the breasts to produce fluid. Trauma to the breast area and surgery to the chest area can also cause the production of fluid in the breasts.

Pharmacological Discharge

The use of some common medications may be the cause of breast discharge. The color of the discharge is opaque or milky. If you have a discharge and are taking one of the medications listed below, notify your physician of both the discharge and the medication usage. Many of these medications increase prolactin levels, the hormone that stimulates milk production. This condition is not harmful, but your physician should be informed.

Drugs identified as possibly causing breast discharge:

- **Birth control pills**
- **Hormones such as Estrogen**
- **Blood pressure medication**
 - Aldomet®
 - Narcotics
 - Morphine, methadone, heroin
- **Psychiatric medications**
 - Thorazine®
 - Trilafon®
 - Mellaril®
 - Permitil®
 - Prolixin®
 - Stelazine®
 - Taractan®
 - Haldol®
- **Gastrointestinal medications**
 - Reglan®
 - Tagamet®
- **Antidepressants**
 - Amoxapine (Asendin®)
 - Norpramin®
 - Pertofrane®
 - Aventyl®
 - Pamelor®
- **Heart medications**
 - Verapamil
 - Calan®
 - Isoptin®
- **Herbal Supplements**
 - Ginseng
 - Dong Quai

Physiological Discharge (conditions)

This discharge may be milky, in both breasts at the same time, and does not vary with the menstrual cycle. This condition, called galactorrhea, is a result of elevated prolactin (hormone that stimulates milk production) levels. If medications are not the cause, testing for the levels of prolactin in your body may help with your diagnosis. Sometimes this condition occurs in combination with amenorrhea, the absence of menstrual periods. This condition may be caused by a tumor in the pituitary gland or from hypothyroidism (low thyroid levels). Medications may be prescribed to correct the problem or to block prolactin production.

Discharge caused by disease:

The discharge that concerns physicians is usually:

- persistent, throughout the month, not varying with monthly cycle
- spontaneous, happens without squeezing the nipple or breast; you find it in your bra
- unilateral, from one breast only and usually from one duct area on the nipple
- clear and sticky (like an egg white), greenish gray, or has a bloody appearance

Common diseases that cause this type of discharge:

- **Intraductal papilloma** (or papillomatosis-if more than one) is a wart-like growth on the wall of the duct. It is not cancerous but may have to be removed surgically. Discharge will usually have some sign of blood but seldom will a lump be involved.

- **Intraductal carcinoma in situ** is a “pre-invasive cancer” or an early stage cancer that clogs up the ducts and sometimes has a discharge. Usually no lump can be felt.

- **Duct ectasia** is a condition in which the ducts are dilated, cells have collected in the area and the area becomes inflamed. Bacteria may be present and can result in an abscess if not treated. Discharge is often a gray or greenish color from one breast, but can involve both breasts. Nipple retraction may occur. Duct ectasia occurs most often around the time of menopause and more often in women who smoke. The condition can be painful but is not cancerous. Treatment involves antibiotics or surgery (if an abscess forms or condition is recurrent after repeated treatment).

- **Paget’s disease** is a slow-progressing disease that causes the breast to secrete a thick discharge that causes irritation and itching of the nipple. The nipple area thickens, develops a crusty scale and eventually resembles an open sore. Cancer is usually found in the ducts and may be in situ (contained in ducts) or invasive (grown through duct). A lump is usually not present. The condition is cancerous and requires surgery.

- **Cancer** can cause breast discharge. A bloody discharge associated with a malignancy usually occurs from one breast only and may or may not have a lump involved. A unilateral discharge that is yellow or clear/watery needs to be evaluated also.

Because breast discharge may be a sign of benign or malignant disease, tell your health-care provider about any discharge. Breast discharge from one breast or a bloody discharge needs prompt evaluation.

Diagnosis of discharge cause and type:

A thorough exam of the breast should be performed to check for a lump and to find out which duct or ducts are involved. Fluid from the breast will then be examined. This can be done by sending it to a lab for analysis to see if it contains blood, bacteria, etc. Some testing can be done in the physician's office. For example, a discharge can be checked for blood by applying a chemical to the breast fluid.

Mammography is helpful in determining if there is anything in the breast that would indicate an underlying cause. In cases where no lump can be felt or no suspicious area appears on mammography or ultrasound, the physician can have a special test, a ductogram (galactography), performed. This test is usually performed if the discharge contains blood or is from one or two ducts on the same breast. A radiologist inserts a small catheter into the duct producing the discharge. A radiographic fluid is then injected and the area is examined by mammography. If it is necessary to remove the duct, the surgeon can have the duct injected and stained with a dye. Only the diseased duct is removed, saving a large portion of the breast.



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Papilloma

Definition of terms:

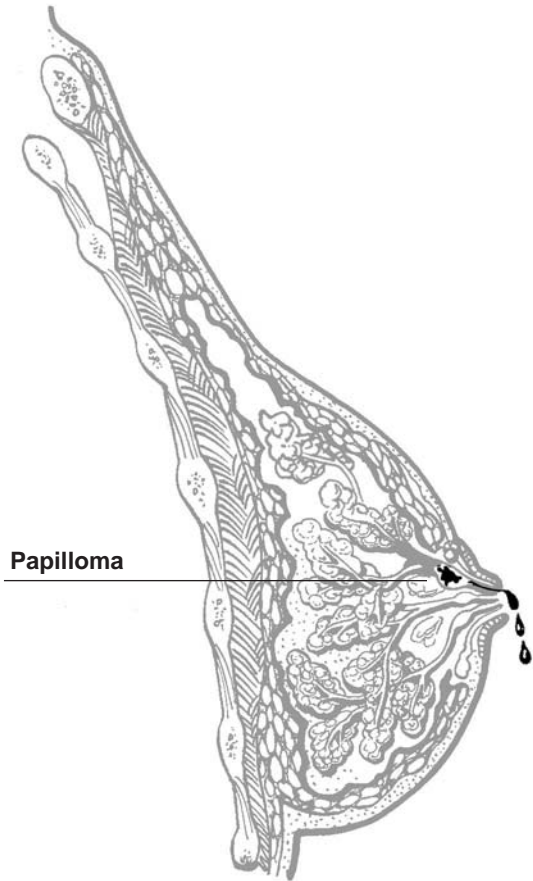
Benign— Not cancerous; no threat to the body

Catheter— Small tube placed into the duct

Ductogram— Procedure to inject dye into duct for x-ray pictures to be made

Malignant— Cancerous; a threat to the body

Papillomas are benign, usually tiny, wart-like growths found in large ducts of the breast near the nipple area. They may occur as a single growth or in groups. Often a bloody discharge is seen coming from one duct opening on one nipple. The growths appear most often between the ages of 35 and 50. They are usually painless, unless multiple papillomas create a mass. Diagnosis is usually made by a ductogram (galactography), a procedure in which a cannula is inserted and radiographic dye is injected into the duct producing the discharge. X-ray pictures allow observation of the interior of the duct and can confirm the presence of an intraductal-filling defect. Papillomas are identified by the characteristic of being attached to the lining of the duct by a stalk (much like a mushroom). Surgery is required to remove the involved duct, even though it may not be cancerous, because of the bloody discharge and need for a definite diagnosis.



Papilloma

Enlargement of Duct

Papillomas attach to the duct wall by a stalk, much like a mushroom





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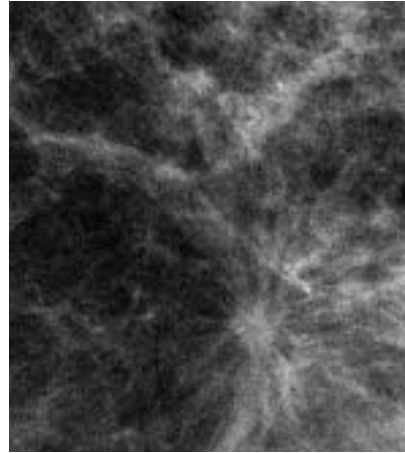
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Radial Scar

A radial scar is a term to describe an abnormality found on mammography that has a star-shaped appearance. The mammography films show a stellate lesion that surrounds a central core. Though debated recently, it is defined as a benign (not cancerous) change. However, because a radial scar has characteristics that resemble cancer, a biopsy is needed to correctly diagnose the abnormality.

What causes radial scars to develop is not fully understood, but it is suggested that normal aging and fibrocystic changes of the breast are the initiating cause. Most radial scars are found on screening mammographies and usually cannot be felt as a lump unless they are very large.



Radial Scar on Mammography



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Sclerosing Adenosis

Definitions of terms:

Adenosis— A disease of a gland

Benign— Not cancerous; no threat to the body

Malignant— Cancerous; a threat to the body

Microscopic— Too small to be seen with the eye; only visible with a microscope

Microcalcification— Small areas of calcium deposits seen on mammography; may be related to a malignant or benign condition

Sclerosing— A hardening due to excessive growth of tissue

Sclerosing Adenosis is a benign condition of the breast. It is located in the end of the lobules involving the acini, the part of the duct that produces the fluid. The fibrous tissues in this area begin to enlarge and distort the lobular unit. Occasionally, this enlargement will combine with other enlarged acinus and become large enough to be felt. This is called an **adenosis tumor**, a benign development in the breast.

Sclerosing adenosis is microscopic and is usually diagnosed because of microcalcifications followed by biopsy. The enlargement remains within the lobules and is not invasive (does not move outside the lobular walls). This condition is of no threat to the patient.



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Shingles (Herpes Zoster)

Caused by the herpes zoster virus (chicken pox), shingles of the breast is rare but can occur. The condition is just like shingles on any other part of the body and may also be recurrent.

Signs and Symptoms:

- Outbreak is preceded by pain in the breast ranging from mild to severe
- Outbreak preceded by generalized fatigue
- Fever over 100
- Small clear blisters appear on the skin in groups of 8 to 10. Size of blisters ranges from 2 - 3 mm.
- Blisters erupt, and the fluid seeps onto the skin

Treatment:

- Medication for pain
- Medication for treatment of the virus
- Treatments with topical medications to control itching

Special Instructions: _____

Medications _____

Skin Care _____



BREAST CANCERS



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Breast Cancer Growth Rate — *How Long Has It Been There?*

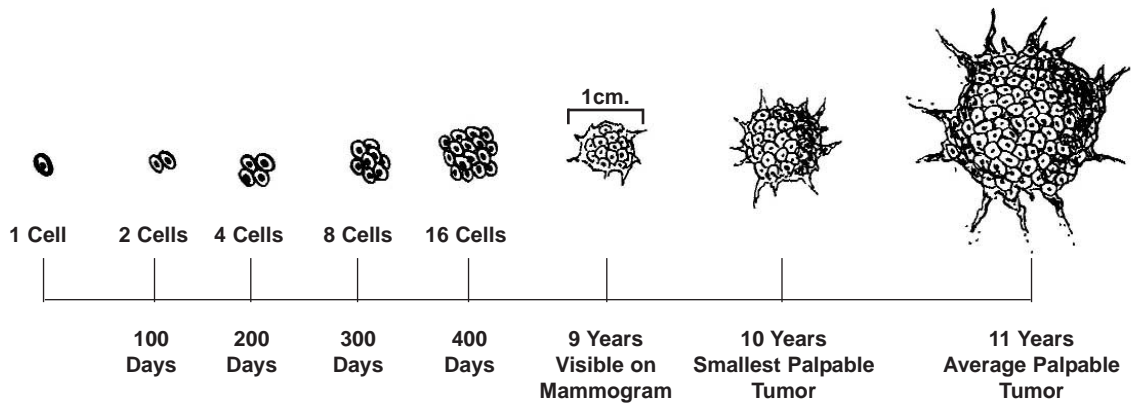
Cancer begins as one damaged (mutated) cell. That cell has the potential to grow into an invasive tumor that can leave the area in which it began, such as the breast duct, and travel to other parts of the body. Medical literature has reported that breast cancer cells vary in growth rate according to the cell type of cancer and the host (person) that has the cancer. It is also speculated that tumors may experience growth spurts, growing faster at one time than another.

The growth rate of breast cancer in the literature has been reported to range from 23 days to 209 days for a tumor to double in size. Doubling is when the one cell becomes two cells, two cells become four, four cells become eight, etc. The average rate of growth is approximately 100 days between doubling in size of the tumor. Therefore, when breast cancer is discovered it has usually been in the body for a while but was too small to be detected. If a breast cancer cell doubled in size every 100 days, it would take approximately nine years before the tumor would be large enough to be visible on a mammogram. It would take approximately ten years to be large enough to be felt. This is a one-centimeter tumor, about the size of the tip of your smallest finger. However, there are some cancers with very rapid growing rates. These are found more often in premenopausal women. One of the tests (S-phase, mitotic index) performed on your tumor may tell how

rapidly the cells were dividing in your tumor when it was removed.

Your physician will have this information in the pathology report if the test was performed. Most breast cancers, when discovered, do not create a medical emergency that is immediately threatening to your life. Most women have time to carefully examine all their treatment options before they have treatment. Most physicians request that surgery be performed within several weeks to a month of diagnosis for tumors that do not exhibit rapid growth. However, because cancer growth rates are individual, you should talk to your physician about the time frame for your surgery. One cancer, inflammatory carcinoma, requires immediate treatment because of its aggressive and metastatic nature. Chemotherapy is given before surgery for inflammatory carcinoma, and treatment is recommended to start within days of detection.

Your treatment team is your only reliable source for information on the aggressiveness and growth rates of your tumor and the most appropriate time for your surgery.





Cancer During Pregnancy — *The Most Frequently Asked Questions*

Breast cancer found during pregnancy is a challenge, but one that a multidisciplinary team can help you manage. About 7 percent of breast cancers are diagnosed during pregnancy.

I've found a lump, how will they diagnosis it?

A physician will feel the lump, looking for certain characteristics. An ultrasound may be used to determine if the lump has characteristics of cancer. Ultrasound does not emit radiation that could harm the fetus. Mammography is usually not performed on a pregnant woman because of the density of the breast during pregnancy and the contraindications of radiation to the fetus. If the lump has suspicious characteristics, a needle biopsy using only local anesthesia can be performed for a study of the cells. This type of biopsy is safe anytime during pregnancy.

Is breast cancer during pregnancy a more aggressive disease?

It was long thought that breast cancer during pregnancy carried a less favorable prognosis. It is now known through clinical studies that the course of the disease is no different. The differences are in decisions of how to manage the disease and maintain pregnancy.

Do I have to have an abortion if I do have breast cancer?

The high levels of estrogen and prolactin during pregnancy may stimulate a cancer to grow, but studies have shown that abortion does not change the course of your cancer and does not improve chances of survival. Abortion is an option only when aggressive chemotherapy is required early in the pregnancy.

What about surgery for breast cancer?

Surgical choices for breast cancer during pregnancy are limited. Breast conservation (lumpectomy) can only be done if delivery is within six to eight weeks. Radiation therapy is needed after a lumpectomy. However, radiation therapy is contraindicated with pregnancy because of potential side effects to the baby. Mastectomy, unlike lumpectomy, can be performed anytime during pregnancy.

Can I have general anesthesia during pregnancy?

After the first trimester (three months) during pregnancy, women can have general anesthesia for a mastectomy. If you are in your first few months of pregnancy, your physician will discuss surgical options with you. When you have your surgery, the baby will be monitored carefully and only the smallest possible amount of anesthesia given.

Can I have chemotherapy during pregnancy?

During the first trimester (three months) of pregnancy, chemotherapy is not recommended. Your physician will discuss the possibility of delaying treatment. Chemotherapy presents a risk anytime during pregnancy for abnormalities in fetal development. However, the risks are greatly reduced after the first three months. Your physician will discuss these risks with you. Chemotherapy drugs are usually administered differently and some drugs are avoided during pregnancy.

Can I breastfeed after breast cancer?

You can breast feed from the remaining breast. It has never been documented that breast milk increases the risk of an offspring having breast cancer in the future. If you have a lumpectomy and radiation therapy, the treated breast will usually not produce milk, but the other breast will continue to be functional.

Can I breastfeed during chemotherapy?

Breast-feeding during chemotherapy is not recommended. Systemic chemotherapy reaches high levels in breast milk.

If I take chemotherapy during pregnancy, what special care should I take?

- You will need to monitor your diet carefully to ensure adequate calories and nutrition.
- If you take drugs that cause nausea and vomiting, you need to carefully monitor your nutritional intake and maintain your fluids. Your doctor will probably order anti-nausea medication. Report any persistent nausea and vomiting immediately.

- Constipation is a major problem during pregnancy. Unfortunately, chemotherapy drugs can often compound this difficulty. Monitor your bowels, avoid constipation if possible and report any problems to your physician.
- Fatigue is a problem for pregnant women and will be an even greater problem with chemotherapy. You will need to plan to get as much rest as possible. Avoid strenuous activities that tire you unnecessarily.
- Report any spotting or bleeding immediately. Chemotherapy drugs lower your clotting factors and you are at a higher risk for bleeding.

What about delivery when taking chemotherapy?

Your delivery will be planned to occur when your blood counts are at a safe level to prevent bleeding and infections.



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Estrogen and Progesterone Receptor Status

An estrogen receptor assay (analysis of a substance) and a progesterone receptor assay are tests performed on your tumor, to determine if estrogen and progesterone hormones stimulated your cancer. This test will help the oncologist determine the type of treatment needed for your cancer.

Hormones are chemicals that are released into the bloodstream by a particular gland. Hormones stimulate a physiological process somewhere in the body. The hormones estrogen and progesterone are produced by the ovaries and the adrenal glands in the body. The hormones function much like a key, traveling until they locate a receptor on a cell or a lock-like opening that fits the key. These "locks" are called estrogen or progesterone receptors. When an estrogen/progesterone molecule finds a receptor, it attaches itself to the receptor and the cell allows the molecule to enter. When inside, the estrogen or progesterone molecules have the ability to affect the cell's function. If the cells do not have this receptor, they are not affected and the hormone molecules cannot enter or affect the function of the cell. Some breast cancers have receptors for estrogen or progesterone molecules or both. Some do not have any receptors for these hormones.

A pathologist will study your tumor after surgery to determine if your cancer had estrogen receptors (ER) or progesterone receptors (PR). These are referred to as "ER (+) positive" or "PR (+) positive" tumors. Some may be positive for one hormone and not for the other.

Often, postmenopausal women have a higher rate of positive receptor sites than premenopausal women. The results of this test will be reported in numbers indicating how receptive the cancer cells were to the hormones. When tumors are ER positive or PR positive, more treatment options with less side effects are available.

This test is very important to determine the type of chemotherapy treatments. Tumors that are ER positive and PR positive are shown to be more responsive to hormonal therapies, whereas tumors that are negative will probably not respond to hormonal treatment. Anti-hormonal drugs are available to prevent this process of attaching to the cell. Tamoxifen (Nolvadex[®]) citrate has proven to be very successful in preventing stimulation from these hormones in the body. Tamoxifen enters the blood, travels to the target cells and attaches itself to the receptor sites for estrogen or progesterone and prevents the cell from dividing. The side effects are similar to menopausal symptoms, such as hot flashes, vaginal dryness, vaginal spotting and occasionally nausea during the first several weeks. There are other drugs that work similarly but this is the most commonly used anti-hormonal drug therapy at the present time. There is no hair loss and the blood counts are not affected as they are with other chemotherapy drugs.

Your final pathology report will reveal if you are ER positive/negative or PR positive/negative. Your oncologist will discuss the effect of your receptor status on your treatment.



Histological and Nuclear Grades of Breast Cancer

Definition of terms:

Histological Grade — Observation under a microscope of the cell arrangement pattern of body tissue

Nuclear Grade — Observation under a microscope of the chromosome structure that determines metabolism, growth, and reproduction

Grade Number	Histological	Nuclear
Grade 1	Well-differentiated cellular features and growth patterns Average aggressiveness	Cells have low proliferation capacity with well-differentiated tumor nuclei, stable nuclear features
Grade 2	Intermediate changes in cellular features and growth patterns Average aggressiveness	Cells have intermediate proliferation capacity with intermediate changes in tumor nuclei
Grade 3	Poorly differentiated cellular features and growth patterns Above average aggressiveness nuclei	Cells have high proliferation capacity with poorly differentiated tumor
Grade 4	Undifferentiated Highest aggressiveness	(No nuclear grade 4)



Male Breast Cancer

Male breast cancer is rare, accounting for less than one percent of all diagnosed breast cancers. The diagnosis usually occurs in older men. The average age is approximately 63 years. The presenting characteristics and treatments given for male breast cancer are very similar to that of female breast cancer.

The causes for the majority of male breast cancer, like female breast cancer, are not identifiable. Discovery of the BRCA1 and BRCA2 genes identified the cause of a small portion of the breast cancers. These mutated genes greatly increase the risk for breast cancer. The BRCA2 gene has been implicated in male breast cancer and is recognized as a potential cause of breast, ovarian, or pancreatic cancer diagnosed in both women and men and prostate cancer in men who have a family history of cancer.

Research has identified possible risk factors for male breast cancer other than a mutated gene. These risk factors include:

- Jewish heritage
- African-American heritage
- History of mumps or orchitis after age 20
- Klinefelter's syndrome
- Conditions of increased or excessive estrogen levels
- Conditions causing decreased testosterone levels
- Occupational jobs that cause high environmental exposure to heat (steel mills, etc.)

- Exposure to electromagnetic fields for extended periods of time
- Exposure to ionizing radiation

Diagnosis of male breast cancer is similar to that of the female. Most male breast cancers show up as a lump on one side, under the areola, that is hard and anchored in surrounding tissues when examined with the hand. Some men may have nipple discharge. Breast discharge on one side is cause for a diagnostic work-up. Infiltrating ductal carcinoma, as in female breast cancer, composes the vast majority of male breast cancer (87 percent).

Mammograms are very helpful in identifying the presenting symptom as a malignancy. However, on a thin male it may be difficult to do a mammogram and ultrasound may be used. Needle biopsies, FNA or core, are used to obtain a histological diagnosis.

Mastectomy is usually the surgery of choice. A modified radical is most often performed unless there is chest wall involvement of the muscle that requires a radical mastectomy with removal of the pectoralis muscles.

Most men receive radiation therapy because of the close proximity of the tumor to the chest wall. Chemotherapy is used for large tumors and/or positive lymph nodes. A higher percent of men are diagnosed in later stages of the disease than women because of the lack of screening programs.

Chemotherapy protocol drugs are identical to female breast cancer drugs. Cytosin, Methotrexate, and 5FU are usually used in combination as the first round of chemotherapy. Tamoxifen is added if the tumor tested positive for estrogen or progesterone receptors. For many years, orchiectomy (removal of the testes) was used to reduce hormones in the man's body. Now, men are more often treated with various anti-hormonal drugs. Buserelin, used in combination with a steroidal anti-androgen called cyproterone acetate, has proven to have equal response rates for controlling the disease. Orchiectomy is now a third-line option because of the effectiveness of anti-hormonal drugs.

Dealing with the side effects of chemotherapy is the same as in females. The use of tamoxifen causes hot flashes and reduces the sex drive.

The challenge in male breast cancer, like female breast cancer, is early detection. The earlier the stage of the disease, the better the prognosis.



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Stages of Breast Cancer

Stage 0 Noninvasive or In Situ	Very early cancer. Found inside ducts or lobules of breasts. DCIS - Ductal Carcinoma In Situ: cancer cells located within the duct, have not invaded surrounding fatty breast tissue. LCIS - Lobular Carcinoma In Situ: abnormal cells grow within the lobules, but do not penetrate through the lobule walls.
Stage I	Tumor measures 2 centimeters (about 3/4 inch) or smaller in diameter and has not spread to lymph nodes in the armpit.
Stage II	Tumor measures larger than 2 centimeters but is not larger than 5 centimeters in diameter, and/or it has spread to lymph nodes under arm on the same side as the breast cancer. Lymph nodes have not yet adhered to one another or to the surrounding tissues.
Stage IIIA	Tumor or tumors either measure larger than 5 centimeters (over 2 inches) in diameter and/or have spread to lymph nodes that adhere to one another or surrounding tissue.
Stage IIIB	Breast cancers of any size that have spread to the skin, chest wall, or internal mammary lymph nodes which are located beneath the breast inside the chest or supraclavicular lymph nodes which are located above the collarbone.
Stage IV	The cancer, regardless of its size, has spread (metastasized) to distant sites such as bones or lungs.
Inflammatory Breast Cancer	Rare breast cancer (approximately 1%). Breast is red and warm. Skin may have pitted appearance. Lymphatics inflamed.
Recurrent Breast Cancer	Cancer that has returned after surgical removal with or without treatment. May recur in surgical breast, nodes, chest muscles, bones, liver, lungs, brain, or other sites.



Staging of Breast Cancer — Explanation

Understanding the stages of breast cancer is similar to understanding the role of a batter advancing around the bases in a baseball game. The pitcher is equivalent to treatment (surgery or chemotherapy). The bases represent stages in the disease and the batter or base runner represents the cancer.

Stage 0 — Batter at the Plate

Stage 0 is in situ cancer in the ducts or lobules of the breasts. This is much like a batter being at home plate. The batter from the opposing team has the bat in her hand and has the potential to score. But unless she gets a hit, there is no real danger. In situ cancer is like a threat at home plate. It is the surgeon's job (pitcher) to prevent (retire the batter) the in situ cancer from spreading through the body (gets to first base and has a chance of progressing on to home plate). In situ disease can be stopped from spreading (struck out) by the surgeon's complete removal of the disease in the breast. Occasionally, a radiation oncologist may administer radiation therapy if a lumpectomy is performed to assure that the cancer will not progress (batter is out).

Stage 1 — First Base

Stage 1 is breast cancer that is no larger than $\frac{3}{4}$ inch across (2 cm) and has **not** spread to the lymph nodes. Stage 1 of breast cancer is like a runner getting a hit and safely reaching first base. The in situ cancer breaks through the walls of the ducts or lobules and invades (infiltrates) the surrounding tissues. At this stage, the runner makes it to first base; but the potential still remains high for the runner

to be thrown out and never progress. This potential is evidenced by the high survival rate of stage 1 breast cancer, which has a five-year survival rate of 97 percent.

Stage 2 — Second Base

Stage 2 breast cancer is a tumor no larger than $\frac{3}{4}$ inch across (2 cm) that **has** spread to the lymph nodes under the arm; or a tumor between $\frac{3}{4}$ and 2 inches across (2 - 5 cm) that may or may not have spread to the axillary lymph nodes; or a tumor larger than 2 inches (5 cm) that has not spread to the axillary nodes. This is like a runner making it to second base safely. There is still a good chance for the runner (cancer) to be thrown out of the game or never make it past second base, but the chances are slightly reduced from when the runner was at first base (stage 1).

Stage 3 — Third Base

Stage 3 breast cancer is like a batter hitting a triple making it all the way to third base. Stage 3 cancer is: a tumor less than two inches (5 cm) across with cancerous lymph nodes that have grown into each other or cancerous nodes that have firmly attached themselves to other tissues in the area; or cancer larger than 2 inches (5cm) with lymph node spread; or cancer that has invaded the chest wall under the breast; or cancer that has invaded the lymph nodes under the collar bone or near the breast bone. The runner (cancer) is more threatening and the chances to be thrown out have dropped even more than before. The runner (cancer) is closer to making it to home plate and scoring (moving to distant, vital organs in the body).

Stage 4 — Home Plate

Stage 4 is when even the smallest amount of cancer has spread throughout the body to major organs (called distant metastasis). This is like the runner advancing toward home plate. There is still a very slight chance of getting the runner out before scoring, but the chances have been severely reduced. Stage 4 disease is difficult to treat, but in some cases the results are good.

Comparing the stages of breast cancer to a baseball game reveals the importance of early detection and appropriate treatment in providing the best chance of beating the disease. The earlier we detect breast cancer, the less likely it is to be life-threatening. Though the survival odds worsen with a higher stage, remember that you are an individual case. There is potential for survival no matter what stage.



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Tumor Markers

Tumor markers are molecules that can often be detected in higher than normal amounts in the blood, urine, or body tissues of some patients with certain types of cancer. Tumor markers are produced either by the tumor itself or by the body in response to the presence of cancer or certain benign (noncancerous) conditions. Measurements of tumor marker levels can be useful when used along with x-rays or other tests in the detection and diagnosis of disease and monitoring of treatment. They can also predict the stage of the disease, since the higher the tumor marker level, the greater the likelihood that the disease has metastasized or spread. However, measurements of tumor marker levels alone are not sufficient to diagnose cancer. With a few exceptions tumor makers are not widely used to screen or diagnose disease because noncancerous conditions can sometimes produce a positive result.

Tumor markers are measured by a specific blood test. Blood tests are easy to perform and virtually risk-free. The blood sample is obtained by a lab technician, nurse or physician inserting a needle into a vein and is relatively painless. The only preparation may be the need to fast for several hours prior to the test.

Some tumor marker levels are measured before treatment to help physicians plan appropriate therapy. An example would be the tumor marker HER2. If this marker is present in higher than normal levels, the physician knows it will be necessary to use the drug Herceptin in treatment. Knowing the

stage or extent of the disease can be useful in predicting how well the disease will respond to treatment. Tumor marker levels may also be measured during treatment to monitor a patient's response to the treatment. A decrease or return to normal levels of a tumor marker may indicate that the cancer has responded favorably to therapy. If the tumor marker level rises, it may indicate that the cancer is growing. Finally, measurements of tumor marker levels may be used after treatment is complete as a part of follow-up care to check for recurrence.

Tumor Markers:

1. Estrogen (ER) and Progesterone (PR) Receptors

Estrogen and progesterone receptors are recommended to be measured on every newly diagnosed breast cancer patient. It is also recommended that testing of levels be performed on metastatic lesions if biopsy is possible and the results would influence treatment planning. In both premenopausal and postmenopausal patients, ER/PR hormone receptor status is used to identify patients most likely to benefit from hormonal types of cancer therapy. Estrogen and progesterone receptors are relatively weak predictors of disease-free survival and are not recommended to be used alone to assign patients to prognostic groupings.

2. CEA (Carcinoembryonic Antigen)

CEA belongs to a family of cell-surface glycoproteins with increased expression found in a number of cancers, including breast cancer. CEA is not recommended alone for screening, diagnosis, staging or routine surveillance of breast cancer patients following primary therapy. However in the absence of other readily measurable disease tests, an increasing CEA level may suggest treatment failure.

3. DNA flow Cytometry or S Phase

DNA flow cytometry estimates the DNA content or S phase and determines how fast your tumor was dividing when removed from your breast. This may or may not determine treatment options.

4. HER2/neu Gene

HER2/neu gene is another tumor marker that may be increased in some tumors. Amplification or over-expression is the determining factor for the use of the drug Herceptin as one of recommended chemotherapy drugs.

There are numerous other markers that may be performed on a tumor. Ask your physician which tumor markers will be ordered to evaluate your tumor and follow-up care.



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What Is Breast Cancer?

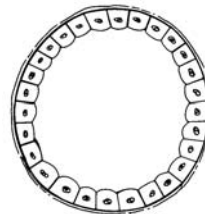
The female breast is a very complicated, glandular organ and is the site of the most commonly occurring cancer in women—breast cancer. No one knows exactly what causes breast cancer. Contributing factors have been identified such as having a family history of breast cancer, environmental carcinogens, viruses, radiation therapy, and life-style factors, including diet and hormonal function.

The term carcinoma is used to describe a malignant or cancerous growth. Cancer begins when the cells of the breast undergo changes. A normal cell converts into a cell that has an uncontrolled growth pattern. These cancer cells continue to divide and grow and may spread to other parts of the breast and then to other parts of the body if not removed. The process of cancer cells spreading throughout the body is called metastasis.

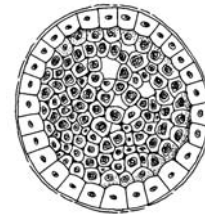
Types of Breast Cancer

Approximately 15 different types of breast cancer have been identified. Tumors that develop from different types of breast tissue, in different parts of the breast, may have varying characteristics. Breast cancers are named according to the part of the breast in which they develop. Cancers beginning in the ducts are called ductal carcinomas and comprise the largest number of cancers occurring in women. Cancers beginning in the lobules are called lobular carcinomas and account for a small percentage of cases. Your physician will tell you which type of cancer you have—ductal or lobular.

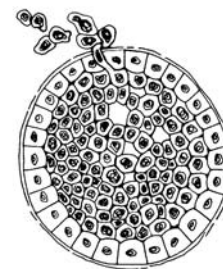
Ducts and lobules are lined with one or two layers of orderly, normal cells. When the cells become cancerous they grow and fill the duct or lobule. In situ carcinomas are cancers that are still contained within the walls of the breast area in which they developed. They have not invaded surrounding tissue. If the cancer grows through the cell walls, it is called an infiltrating or invasive carcinoma. Your pathology report will explain if your cancer is in situ or invasive (infiltrating).



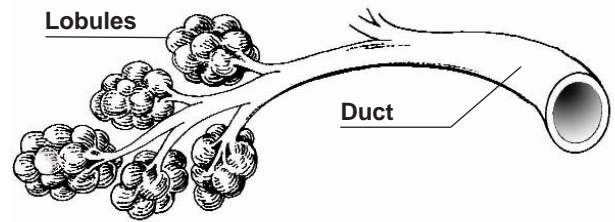
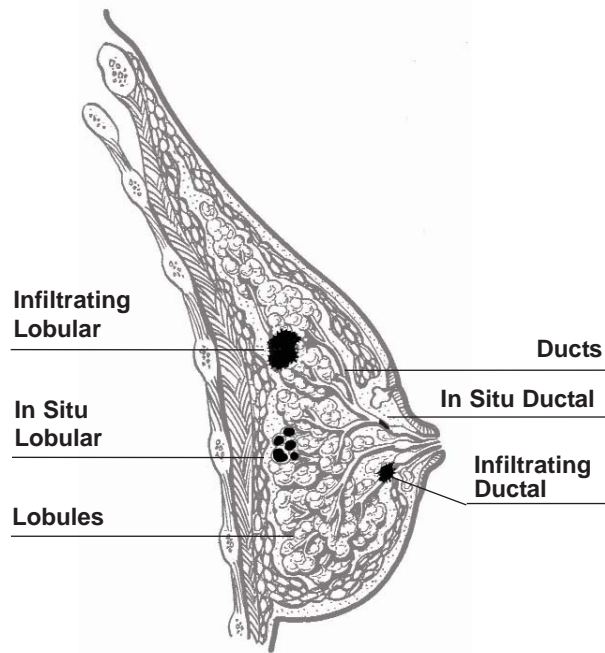
Normal Cell



In Situ Cancer Cells



Invasive or Infiltrating Cells



local (in the area of the breast), regional (in the nodes or area near the breast) or distant (to other organs of the body).

The Role of the Lymphatic System

Lymph nodes play an important role in the discussion of your treatment decisions. The lymphatic system serves as the sewage system for cellular waste in the body. The lymph vessels follow closely beside the blood vessels and receive the cell's waste products. This waste is carried by the vessels and filtered through rounded areas of the lymph system, called lymph nodes. Nodes appear as small round capsules and vary from pinhead to olive-size. Lymphocytes and monocytes (components of fluid that fight infection) are produced in the nodes. Nodes act as filters to stop bacteria, cellular waste, and cancer cells from entering the blood stream. Lymph nodes may also serve as metastatic sites—places where cancer has spread from the original site to the nodes, referred to as secondary sites.

A small percent of the lymphatic fluid leaving the breast is drained in the lymph nodes located near the breastbone, called **internal mammary nodes**. The majority of the fluid is drained through the nodes of the armpit, referred to as the axillary nodes. There are three levels of nodes in the axillary area. Your surgeon may remove nodes from one or several levels, a procedure called axillary sampling. Axillary dissection is the term used when all the nodes under the arm are removed. The number of nodes in each level varies from person to person. A procedure called sentinel node biopsy identifies the first draining nodes from a

How Fast Do Breast Cancers Grow?

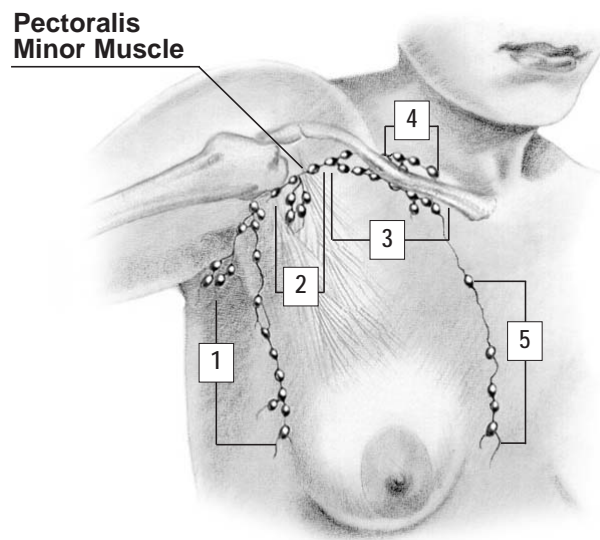
Some breast cancers grow rapidly, while others grow slowly. Breast cancers have been shown to double in size every 23 to 209 days. A tumor that doubles every 100 days (the estimated average doubling time) would have been in your body approximately eight to ten years when it reaches one centimeter in size (3/8 inch)—the size of the tip of your smallest finger. The cancer begins with one damaged cell and doubles until it is detected and treated. The cancer must be surgically removed from the body, destroyed with chemotherapy and/or radiation therapy, or controlled with hormonal therapy. Some people believe that cancer grows in spurts, and the doubling time varies at different times. However, by the time a one-centimeter tumor is found, the tumor has already grown from one cell to approximately 100 billion cells. The pathology report will tell how fast a tumor is estimated to grow.

Some tumors spread more rapidly to other parts of the body, while others do not spread as readily. Breast cancer spreads to other parts of the body through the lymphatic system or the blood system. The spread of the cancer can be

tumor determining the need for axillary dissection.

Nodes are removed to determine whether your cancer has moved from the breast into the node area. The term *negative nodes* mean that your lymph nodes did not have any evidence of cancer. *Positive nodes* indicate that the cancer was found in the lymph nodes. Your surgeon will tell you how many nodes were removed during your surgery and whether any were

found to have cancer cells present. Treatment decisions are often based on the number of nodes in which cancer cells are found. Two important factors that determine your oncologist's treatment plan are the number of positive nodes and the size of your tumor. Before surgery, the surgeon can tell if nodes will be sampled or removed. After surgery, the surgeon can tell you how many lymph nodes were removed and if they contained evidence of cancer cells.



One or all three levels of lymph nodes may be removed.

- 1 - Low axillary, Level 1
- 2 - Mid axillary, Level II
- 3 - High axillary, Level III
- 4 - Supraclavicular
- 5 - Internal mammary nodes

Surgery and treatment with chemotherapy, radiation therapy or hormonal therapy can vary because of differences in types of cancer, sizes of tumors, potential lymph node involvement or documented metastasis, aggressiveness of tumors, and hormonal sensitivity. Therefore, it is necessary for you to communicate with your physicians, who know your particular disease type, when seeking any specific information or advice on your breast cancer treatment.

Breast cancer is not a sudden occurrence, but a process that has been developing for a period of time. Therefore, when a biopsy

confirms a cancerous breast tumor, you are not facing a medical emergency. You have time to get answers to your questions and learn about your particular disease and treatment options. Most physicians recommend surgery within several weeks of biopsy. There are exceptions; for example, cancer in the lymphatic system (also known as Inflammatory Carcinoma) requires immediate treatment with chemotherapy for maximum control. Tests performed on your tumor will reveal cell type and estimate how quickly the tumor is growing. Ask your physician about the characteristics of your tumor and treatment recommendations.



Apocrine Carcinoma

Definition of terms:

<p>Apocrine— Type of sweat gland that is found under the arms and in the groin</p> <p>Axillary Sampling— Surgical removal of random lymph nodes from under the arms for one or more levels of nodes (you have three)</p> <p>Biopsy— Procedure to remove cells or tissues for study by a pathologist</p> <p>Carcinoma— Cancer cells that start in the surface layers or lining of the ducts</p> <p>Cyst— A fluid-filled sac</p> <p>Lymph Nodes— Pea-like areas in the lymphatic system that act as filters for the body's cellular waste; lymph nodes under the arms filter the waste from breast tissues</p> <p>Lumpectomy— Removal of lump and small amount of surrounding tissues from the breast</p> <p>Malignant— Cancerous; a threat to the body</p> <p>Mastectomy— Surgical removal of a breast</p>	<p>Metastasis— Spread of cancer to other parts of the body</p> <p>Mitotic Rate— Rate of cell division</p> <p>Radiation Therapy— Treatment with x-rays to kill cancer cells</p> <p>Well-Differentiated— Cells that look very similar to the cells from which they came</p> <p>Apocrine carcinoma is an uncommon cancer that is often referred to as sweat gland carcinoma. Sweat glands are found under the arms and in the groin area of the body. These glands are often present in the lining of cysts and tumors that are found in the ducts of the breasts. Biopsy reports usually reveal a slow-growing malignant tumor (having a low mitotic rate) that is well-differentiated (good sign). Often these tumors prove to be negative for estrogen and progesterone receptors.</p> <p>Surgery options include lumpectomy with axillary sampling and radiation or modified mastectomy with lymph node removal. Treatment is based on the size of the tumor, lymph node metastasis, estrogen/progesterone receptor status, cell growth rate (mitotic rate), and the patient's age and menopausal state.</p>
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Comedo Carcinoma In Situ

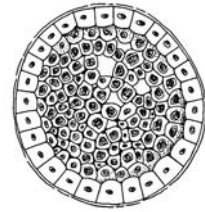
Definition of terms:

- Benign**— not cancerous; no threat to the body
- Biopsy**— Procedure to remove cells or tissues for study by a pathologist
- Calcifications**— Small areas of calcium deposits seen on mammography; may be related to a malignant or benign condition
- Carcinoma**— Cancer cells that start in the surface layers or lining of the ducts
- Metastasis**— Cancer that has spread to another part of the body
- Malignant**— Cancerous; a threat to the body
- In Situ**— In one contained area; has not invaded cell wall of duct
- Lymph Nodes**— Pea-like areas found in the lymphatic system that act as filters of the body's waste; the majority of the nodes that filter waste from the breast tissues are located under the arm

Comedo carcinoma in situ is a form of ductal carcinoma in situ (DCIS) that exhibits a higher risk of being aggressive. It is usually found when a mammogram shows microcalcifications in a trail-like pattern that follows a duct.



Normal ducts
have one or two
layers of cells
that look alike

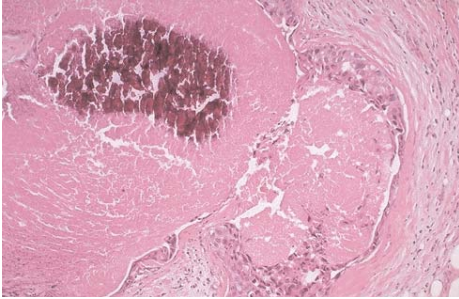


In situ cancer
fills ducts

When these cells grow and fill the ducts, cells often begin dying (necrosis) and leave behind microcalcifications, a marker for in situ cancer. An inflammatory response of surrounding tissues, called fibrosis, will occasionally cause an in situ cancer to form a thickening of tissues in that area of the breast. This thickened area may be felt on self-exam or by a healthcare provider.

After biopsy, the pathologist identifies cells within the ducts called comedo. Identification of a comedo presence indicates a more aggressive in situ cancer. If a comedo characteristic is identified, the ductal carcinoma in situ cancer (DCIS) has a higher incidence of invading the walls of the ducts than one that does not have a comedo component. However, because the cancer is still inside of the ducts, it is not life-threatening and can be removed and treated successfully.

Your physician will offer you treatment options that may include mastectomy or lumpectomy followed by radiation therapy and other treatments.



Slide of intraductal comedo carcinoma characterized by the presence of rapidly proliferating, high-grade malignant cells. Cells in the center of the ducts are often necrotic and calcify, as shown here.



Cystosarcoma — Phyllodes Tumor

Phyllodes tumors are composed of connective tissues of the breast mixed with a small amount of epithelial (top, lining) cells. The majority of breast cancers develop from the epithelial tissues of the breast that line the ducts (called carcinomas). The phyllode tumor is characterized by having cystic areas lined with epithelial cells throughout the mass. The word “phyllode” means having a leaf-like appearance. Under a microscope, the tumor cells look like a leaf.

Phyllode tumors are very rare, accounting for less than 1 percent of all breast tumors. They are often associated with fibroadenomas and are called giant fibroadenomas. The average age of patients with phyllode occurrence is the mid-forties. **Cystosarcoma phyllodes** refer to the **malignant** (cancerous) tumors and the benign (noncancerous) tumors are called **phyllodes**. However, some physicians commonly use the terms interchangeably.

The tumors are diagnosed by the presence of a firm, rubbery, round or oval mass in the breast that has smooth edges; very similar to a fibroadenoma. The majority are painless lumps, but rarely, because of the size or position of the tumor, may cause pain. The tumors grow rapidly and are the largest documented breast tumors known. Some have been up to 18 cm in diameter. Often, the large size of the tumor is the first clue as to the type of mass in the breast. Phyllode tumors are often difficult to identify with mammography in women with dense breast

tissues. If the tumor has cystic areas, calcifications may be present on the mammogram. Ultrasound may be able to distinguish the tumor from a breast cyst. Biopsy is required for a definite diagnosis.

Cells in the tumor may change from benign to malignant. Therefore, removal of the tumor is necessary even when it is not cancerous. Large tumors may cause the skin over the tumor to become shiny and red and eventually may cause an ulcer (open, red sore). A small percentage of tumors recur after surgical removal. Malignant tumors may metastasize to the lymph nodes and move to major organs (heart, lungs, bones, and abdominal area) of the body.

Treatment of a cystosarcoma phyllode tumor includes a lumpectomy, surgically removing the mass, with wide, clear margins. Radiation therapy may be prescribed after lumpectomy. If the tumor is extremely large, a mastectomy may be recommended. The surgical site will be closely monitored for local recurrence. Chemotherapy may be recommended for malignant tumors if they have spread to the nodes or invaded the chest wall.



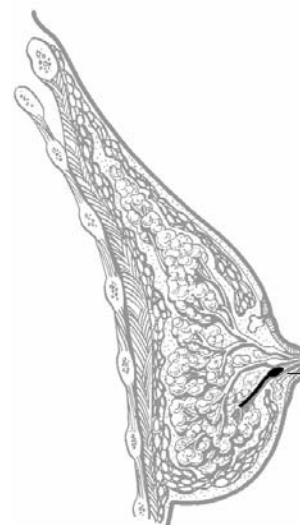
Ductal Carcinoma In Situ

Definition of terms:

- Benign**— Not cancerous; no threat to the body
- Carcinoma**— Cancer cells that start in surface layers or lining of the ducts
- Malignant**— Cancerous; threat to the body
- Mastectomy**— Removal of a breast by surgery
- Metastasis**— Spread of cancer to other parts of the body
- Microcalcifications**— Small areas of calcium deposits seen on mammography; may be related to a malignant or benign condition
- In situ**— In one contained area
- Lumpectomy**— Removal of a lump and some surrounding tissues in the breast
- Lymph nodes**— Pea-like areas in the lymphatic system that act as filters of the body's cellular waste; lymph nodes under the arms filter waste from breast tissues
- Radiation Therapy**— Treatment with x-rays to kill cancer cells

Ductal carcinoma in situ is a pre-invasive cancer. This condition may have a potential for continuing to proliferate (grow) into an invasive (grows through the duct walls) cancer. Excessive overgrowth of abnormal cells has filled the ducts in which the disease is located. Some authorities refer to the condition as “non-invasive cancer” and others as “pre-cancer.”

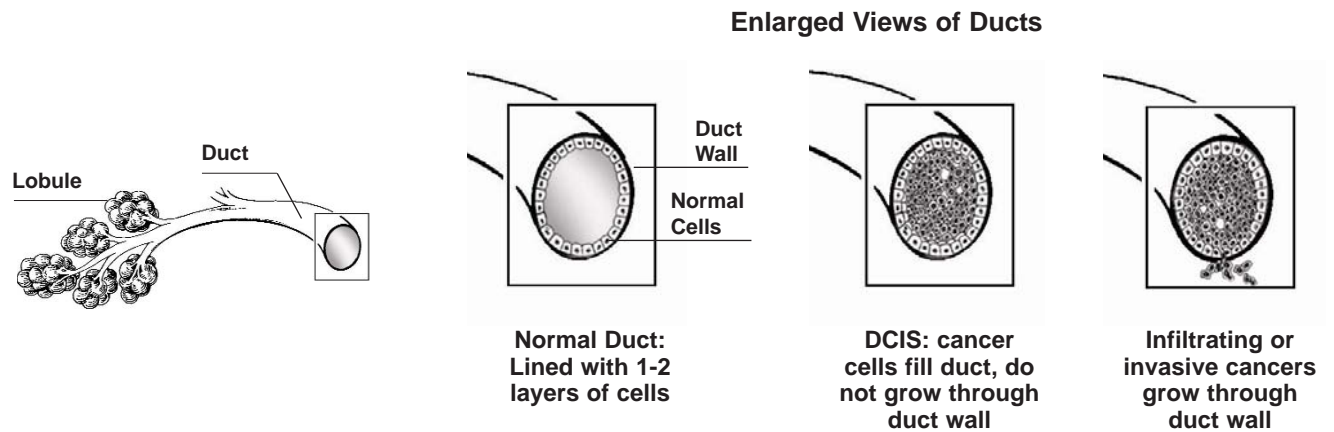
Most ductal carcinomas in situ are found by mammography when microcalcifications are observed in a clustered pattern. Usually, five or more calcifications in a very close area will be cause for the radiologist to study carefully the shape of the calcifications. If the shapes are suspicious, a biopsy, using needle localization or stereotactic technique, will be used to locate the findings and a biopsy will be performed. Sometimes a thickening or a soft mass will be found in the area of the breast. Occasionally, a nipple discharge will be a symptom of ductal carcinoma in situ.



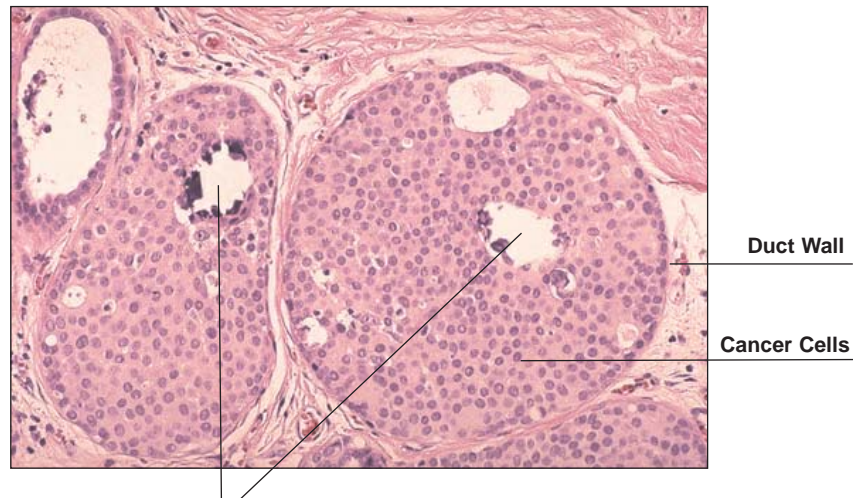
Ductal Carcinoma In Situ (DCIS)

When a biopsy of the area confirms ductal carcinoma in situ, you have a pre-invasive cancer that has potential to spread and threaten your life. Your physician will offer you several treatment options for carcinoma in situ, including: mastectomy, which offers a nearly 100% cure rate; lumpectomy with radiation therapy;

lumpectomy without radiation therapy; or continued observation. A careful look at the extent of the disease, your age, family history and other factors will be considered in selecting the treatments appropriate for you.



Pathology Slide of Intraductal Carcinoma



The two large areas in the center contain microcalcifications

Cancer cells are still within the duct and have not broken through the cell wall into surrounding tissues. The two large lobules in the center contain microcalcifications that can appear on mammography.



Ductal Carcinoma In Situ — Surgical Management

Definition of terms:

Benign— Not cancerous; no threat to the body

Carcinoma— Cancer cells that start in surface layers or lining of the ducts

Malignant— Cancerous; threat to the body

Surgical Margins— Area of tissue surrounding an abnormality or tumor removed by surgery

Mastectomy— Removal of a breast by surgery

Metastasis— Spread of cancer to other parts of the body

Microcalcifications— Small area of calcium deposits seen on mammography; may be related to a malignant or benign condition

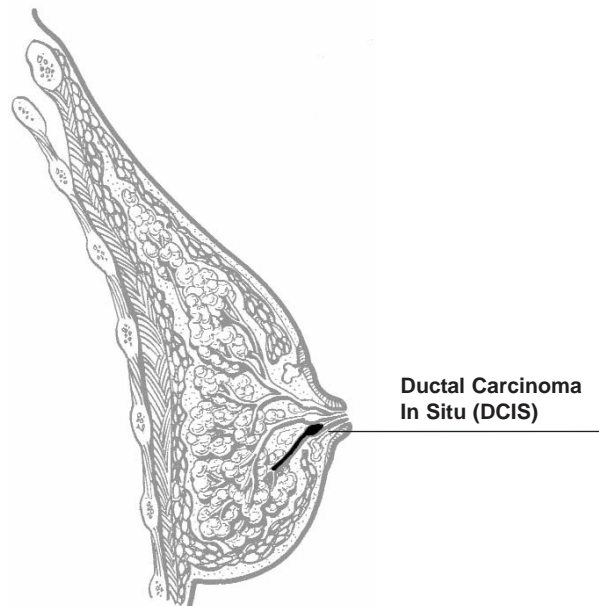
In situ— In one contained area

Lumpectomy— Removal of a lump and some surrounding tissues

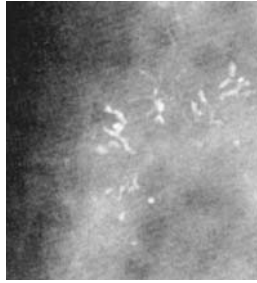
Lymph Nodes— Pea-like areas in the lymphatic system that act as filters of the body's cellular waste; lymph nodes under the arms filter waste from breast tissues

Radiation Therapy— Treatment with x-rays to kill cancer cells

Ductal carcinoma in situ (DCIS) a pre-invasive cancer. Excessive overgrowth of abnormal cells has filled the ducts in which the disease is located. This condition may have a potential for continuing to proliferate (grow) into an invasive (grows through the duct walls) cancer. Some authorities refer to the condition as "non-invasive cancer" and others as "pre-cancer."



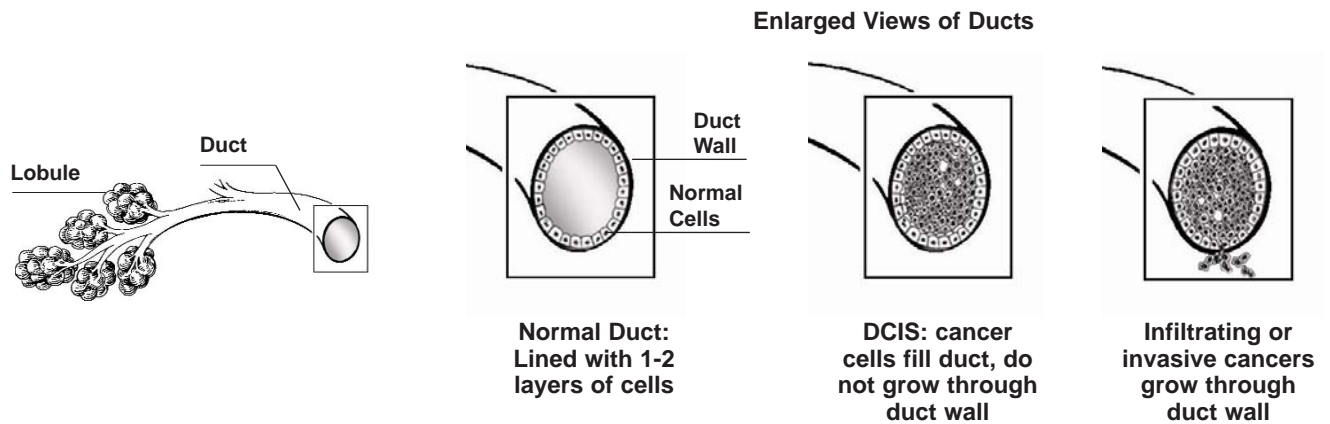
Ductal Carcinoma In Situ (DCIS)



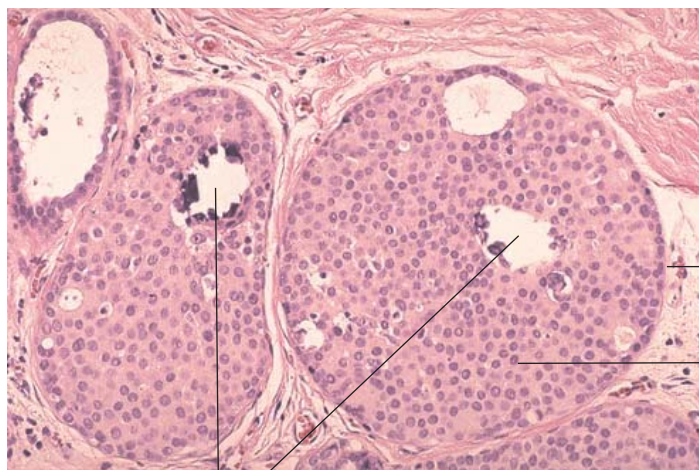
Most ductal carcinoma in situ are found by mammography where microcalcifications are seen in a clustered pattern. Usually, if five or more calcifications are very close together, the radiologist will carefully study the shapes of the calcifications. If the shapes are suspicious, a needle localization biopsy or a stereotactic biopsy will be used. Sometimes a thickening or a soft mass will be found in the area of the breast. Occasionally, a nipple discharge will be a symptom of ductal carcinoma in situ.

In one study of DCIS patients, researchers found :

- 72 percent — calcifications alone
- 12 percent — calcifications and soft tissue abnormality
- 10 percent — soft tissue abnormality alone
- 6 percent — no mammographic findings



Pathology Slide of Intraductal Carcinoma



Duct Wall
Cancer Cells

Cancer cells are still within the duct and have not broken through the cell wall into surrounding tissues. The two large lobules in the center contain microcalcifications that can appear on mammography.

The two large areas in the center contain microcalcifications

Treatment

Physicians have been studying and re-evaluating surgical treatment options for DCIS. For many years, mastectomy was the recommended surgical treatment. However, recent clinical studies have shown that a lumpectomy offers better cosmetic results by saving the breast and provides clinical results or outcomes similar to a mastectomy. The surgery treatment decision is based on the pathology characteristics of the tumor and the extent of the spread of the tumor.

The Van Nuys Prognostic Index Score was developed through the use of clinical trials.

It provides a formula to grade the tumor or lesion and, based on the findings, recommends the most appropriate surgical option: (1) lumpectomy without radiation therapy, (2) lumpectomy with radiation therapy, or (3) mastectomy. The Van Nuys Prognostic Index Score grades four components on a scale of 1 to 3. The tumor is graded on: (1) nuclear grade, (2) tumor size (extent of spread), and (3) surgical margins. The fourth component is graded on the age at diagnosis. Totaled scores of the four components may range from 4 (low risk of recurrence) to 12 (high rate of recurrence).

<p>1. Nuclear Grade</p> <p>Non-high grade without necrosis Non-high grade with necrosis High grade</p>	<p>Grade Value</p> <p>1 point 2 points 3 points</p>	<p>Evaluates size and shape of nucleus of cells.</p>
<p>2. Tumor Size</p> <p>1.5 cm and under 1.6 cm to 4.0 cm 4.1 cm or greater</p>	<p>Grade Value</p> <p>1 point 2 points 3 points</p>	<p>Evaluates size of the area where DCIS is found.</p>
<p>3. Tumor Margins</p> <p>1.0 cm or greater 0.1 - 0.9 cm 0.1 cm or under</p>	<p>Grade Value</p> <p>1 point 2 points 3 points</p>	<p>Evaluates distance from DCIS to margins of surgical specimen.</p>
<p>4. Age at Diagnosis</p> <p>Under 40 40-60 Over 60</p>	<p>Age Value</p> <p>3 points 2 points 1 point</p>	<p>Factors in age at diagnosis.</p>
<p>Final Cumulative Total</p> <p>4 points – no difference in survival-free local recurrence lumpectomy with/without radiation therapy</p> <p>5-8 points – significant decrease in local recurrence with radiation therapy</p> <p>9-12 points – high rate of local recurrence, mastectomy recommended</p>		<p>Total of the scores in the above four areas determines final grade.</p>

Breast conservation (lumpectomy) is recommended if:

- Surgical margins are clear (no evidence of lesion in or near margins)
- No residual microcalcifications left in breast post-operatively
- Cosmetic results from surgery suitable to patient
- Patient is willing to have long-term follow-up (biannual mammograms and clinical breast exams)

Radiation recommended for:

- Lesions greater than 2.5 cm
- Some patients with smaller lesions, no further therapy is needed
- Positive margins (cancer cells still present) are re-excised surgically and radiation therapy given

Mastectomy recommended for:

- Patients with large lesions, poor cosmetic results from lumpectomy
- Positive margins after re-excision (several times)
- Patients not motivated for detailed follow-up
- Skin-sparing mastectomy with immediate reconstruction recommended

Ductal carcinoma in situ is a pre-invasive cancer that has a potential to spread and possibly threaten your life. Your physician will offer you several treatment options including: mastectomy, which offers a nearly 100% cure rate, lumpectomy with radiation therapy, lumpectomy without radiation therapy, or continued observation. A careful look at the extent of the disease, characteristics of the tumor found on the pathology report, your age, family history and other factors will be considered in selecting the treatments appropriate for you.



ST. VINCENT'S BREAST HEALTH CENTER

St. Vincent's HealthCare

St. Vincent's Breast Health Center
1800 Barrs Street
Jacksonville, Florida 32204

Infiltrating Ductal Carcinoma

Other terms used to describe:

Invasive Duct Carcinoma
Invasive Ductal Carcinoma

Definition of terms:

Biopsy— Procedure to remove cells or tissues to be studied by a pathologist

Carcinoma— Cancer cells that start in the surface layers or lining of the ducts

Chemotherapy— Treatment with medications to kill cancer cells

Hormonal Therapy— Treatment with hormones or anti-hormonal medications

Infiltrating— To penetrate through the walls of the ducts from which a cancer began

Lymph Nodes— Pea-like areas in the lymphatic system that act as filters of the body's cellular waste; lymph nodes located under the arms filter waste from breast tissues

Lumpectomy— Removal of lump and small amount of surrounding tissue from the breast

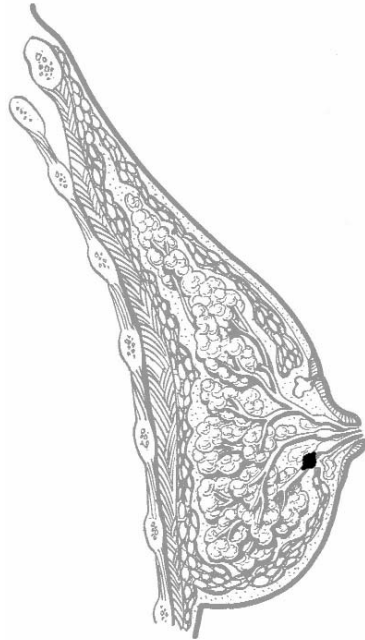
Malignant— Cancerous; threat to the body

Mastectomy— Surgical removal of a breast

Metastasis— Spread of cancer to other parts of the body

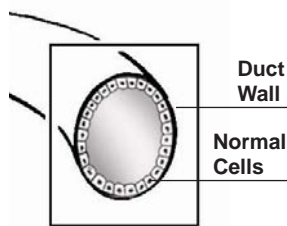
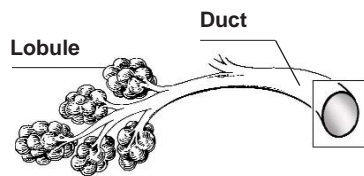
Microcalcifications— Small areas of calcium deposits seen on mammography; may be related to a malignant or benign condition

Infiltrating ductal carcinoma is the most common invasive breast cancer, accounting for approximately 60 percent of all cases. It is characterized by a very hard lump that has irregular borders and seems anchored in surrounding tissues. The skin over the area or the nipple may retract (pull in). On mammography there are often microcalcifications found in the tumor area, since this tumor has a history of internal cell death (necrosis). The tumor varies in size and cell division time, with some cells growing more rapidly than others.

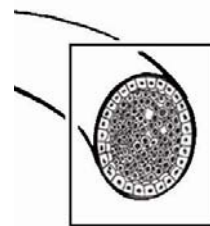


A biopsy can reveal the exact characteristics of the tumor including how fast it is dividing; whether it is stimulated (caused to grow) by estrogen, or progesterone hormones; and how much the cells have changed from the parent cell (differentiation). These findings, combined with your menopausal status, age, and general health, will determine surgery. Treatment may include lumpectomy with axillary sampling followed with radiation; lumpectomy with axillary sampling followed with chemotherapy and radiation therapy; and mastectomy with lymph node removal with or without chemotherapy or radiation. Sentinel node biopsy may be used to identify the first draining nodes of a cancer to determine if axillary dissection is needed. Hormonal therapy, usually Nolvadex® (tamoxifen), may be used with any of these treatments if the tumor is positive for estrogen or progesterone receptors.

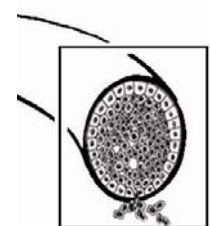
Enlarged Views of Ducts



Normal Duct:
Lined with 1-2 layers of cells

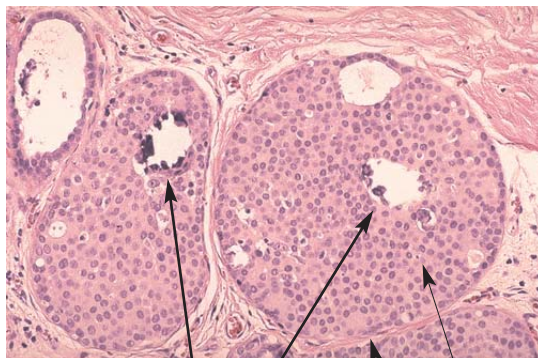


DCIS: cancer cells fill duct, do not grow through duct wall



Infiltrating or invasive cancers grow through duct wall

Ductal Carcinoma In Situ Pathology Slide

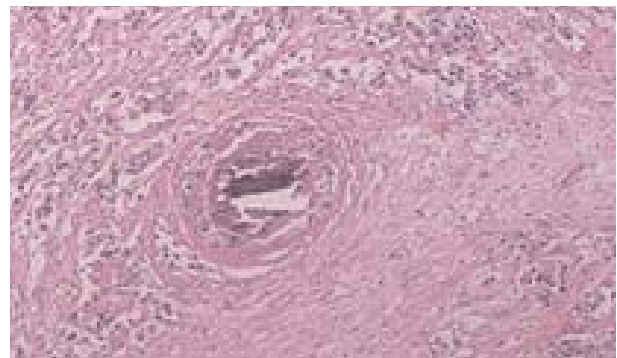


The two large areas in the center contain microcalcifications

Duct Wall

Cancer Cells

Invasive Ductal Carcinoma Pathology Slide



Cancer cells have invaded walls of ducts into surrounding tissues. Distinct cell walls are no longer visible as compared to the slide on the left that is ductal carcinoma in situ.



Infiltrating Lobular Carcinoma

Definition of terms:

Carcinoma— Cancer cells that start in the surface layers or lining of the ducts

Hormonal Therapy— Treatment with hormones or anti-hormonal medications

Infiltrating— Cells that go through the walls of the lobules

Invasive— Cells that have grown into surrounding tissues

Lymph Nodes— Pea-like areas in the lymphatic system that act as filters for the body's cellular waste; lymph nodes under the arms filter the waste from the majority of breast tissues

Lobular— Found in the lower parts of the ducts where the milk is produced

Malignant— Cancerous; a threat to the body

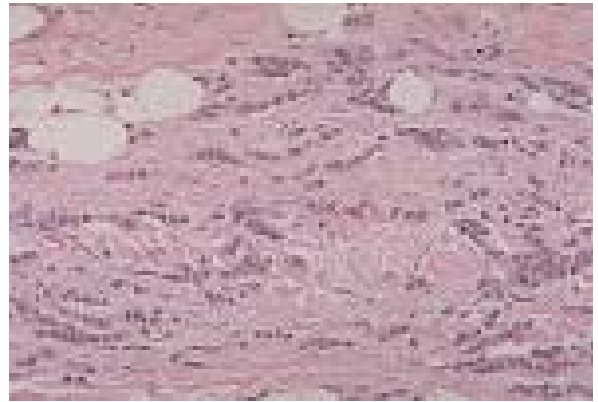
Mastectomy— Surgical removal of a breast

Metastasis— Spread of cancer to other parts of the body

Tumor— Excessive growth of cells that create a lump; may be cancerous or non-cancerous

Infiltrating lobular carcinoma accounts for about 5 percent of all malignant, invasive cancers. It occurs most frequently in women between the ages of 45 and 56. The tumor grows in the terminal (last part) of the lobules where milk is produced. It usually does not show up on mammography and may feel like a thickening in the upper-outer quarter of the breast (from the nipple to under the arm) as it infiltrates the walls of the lobules. Infiltrating lobular carcinoma has a higher incidence of occurring in the opposite breast. It is often found in other parts of the same breast (multicentric). Late signs of a large tumor area may be the retraction or puckering of the skin over the area. Most tumors are positive for estrogen and progesterone receptors and thus respond well to hormonal therapy. Infiltrating lobular carcinoma sometimes has an increased incidence of spreading to the uterus and ovaries.

Surgery may range from a mastectomy to bilateral (both breasts) modified radical mastectomy because of the risk of cancer being in other parts of the breast and because it can occur in the opposite breast. Treatment options will vary according to the size of the tumor, lymph node involvement, estrogen/progesterone receptor status, age, and menopausal status of the patient.



Infiltrating Lobular Carcinoma Pathology Slide

Cells have invaded lobular wall and grown into surrounding tissues in an Indian trail pattern.



Inflammatory Carcinoma

Definition of terms:

Biopsy— Procedure to remove cells or tissues for study by pathologist

Carcinoma— Cancer cells that start in surface layers or lining of ducts

Chemotherapy— Treatment with medications to kill cancer cells

Lymph Nodes— Pea-like areas in the lymphatic system that act as filters for the body's cellular waste; lymph nodes under the arms are the nodes that filter waste from breast tissues

Lymphatic System— Body system that filters the body's cellular waste; located near the vessels and veins in the body

Malignant— Cancerous; a threat to the body

Metastasis— Spread of cancer to other parts of the body

Radiation Therapy— Treatment with x-rays to kill cancer cells

Inflammatory carcinoma is a cancerous condition that has spread to the lymphatic system of the breast. It accounts for approximately 1 percent of all breast cancers. The cancerous cells plug the lymphatics and block the drainage of fluid. Progression of the disease may be rapid.

Possible Signs and Symptoms:

- Breast size may increase rapidly; sometimes a cup size in a few days
- Itching may be unrelenting and unaffected by medicated creams or oral medications
- Pink, red, or dark colored area
- Discoloration appears to be a bruise that does not go away
- Discoloration ranges from a reddish-pink or reddish-purple, to reddish-brown
- Orange-peel skin, a pin-point dimpling (called peau d'orange)
- Breast may feel warm to the touch
- Color and texture changes of areola
- Ridges and thickened areas of the skin
- Swollen axillary lymph nodes or supra-clavicular nodes
- Rarely, a lump that can grow very rapidly (normally there is no evidence of a lump with inflammatory breast carcinoma)

- Nipple flattening or retraction
- Nipple discharge
- Breast pain is not cyclic (varies during menstrual cycle) and may be constant or stabbing
- Discomfort ranges from tender to very painful

Biopsy will confirm a malignancy. Because this disease is systemic (spreads through the body by the lymphatic system), therapy usually starts with chemotherapy. Radiation therapy to the breast may also be used. Surgery may then be performed after the acute (inflammatory) stage of the disease is under control.



Lobular Carcinoma In Situ

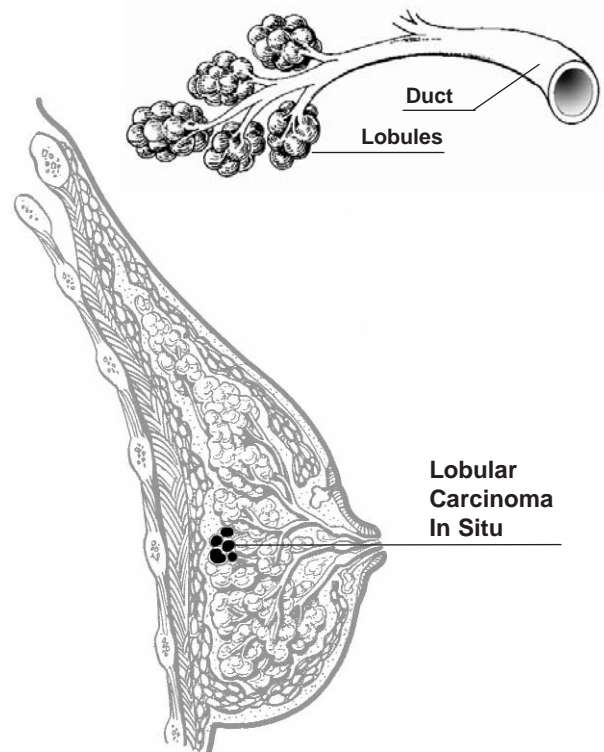
Definition of terms:

- Benign**— Not cancerous; no threat to the body
- Carcinoma**— Cancer cells that start in the surface layers or lining of ducts
- Metastasis**— Spread of cancer to other parts of the body
- Malignant**— Cancerous; a threat to the body
- Mastectomy**— Removal of a breast by surgery
- In Situ**— In one contained area; has not invaded through the walls of ducts
- Lymph Nodes**— Pea-like areas in the lymphatic system that act as filters for the body's cellular waste; lymph nodes located under the arm filter the waste from breast tissues

Lobular carcinoma in situ (LCIS) is defined by some experts as a "pre-malignant disease" or a "marker" for increased risk for breast cancer. There is a potential that it can continue to proliferate (keep growing) into an invasive cancer (one that grows through the cell wall into surrounding tissues). LCIS is found in the lobules, the milk-producing units of the breast.

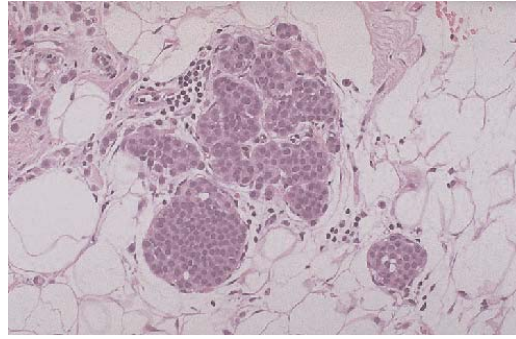
Abnormal cells fill the lobules as an excessive overgrowth of cells. Other terms used to refer to this condition are "non-invasive cancer" and "pre-cancer."

Lobular carcinoma does not form a hard lump and does not show up on mammography. Occasionally, an area will have a feeling of thickening or increased density in the area. The diagnosis is usually made while looking for another abnormality within the breast. Typically lobular carcinoma is a slow-growing disease. However, this disease does have a chance of occurring in the other breast.



Treatment for lobular carcinoma in situ may range from “watchful waiting” to mastectomy (occasionally both breasts). If careful observation of the breasts is chosen, your physician will schedule biannual (twice a year) clinical exams, order regularly scheduled mammograms to detect any changes, and may prescribe an anti-hormonal drug called tamoxifen to reduce the risk of it developing into an invasive cancer.

Your surgeon will discuss the recommended options for your diagnosis.



Cell proliferation in the terminal breast lobules and acini. The cells are small and round, filling the lobules.



Lymphoma of the Breast

Lymphoma of the breast is a cancer that originates in the lymphatic tissues in the breast. The tumor is called a sarcoma (developing from connective tissues of the breast) and accounts for approximately 10 percent of all breast sarcomas. Most breast tumors are from epithelial cells (which line the ducts), called carcinomas. This type of cancer is very rare. Of all carcinomas and sarcomas, Lymphoma accounts for only 0.1 percent of breast cancers.

Lymphoma may occur first (**primary**) in the breast or move from another part of the body to the breast (**secondary**). Patients diagnosed with previous non-Hodgkin's lymphoma are subject to developing secondary breast tumors. Breast lymphomas occur in males as well as females.

The tumor is identified by a mass in the breast or, occasionally, several masses in the same breast and may be bilateral (occurs in both breasts). The mass is usually larger than most breast carcinomas and is softer in texture. The average size is approximately 4 cm (1½ inches across). Lymphomas of the breast occur more frequently in the right breast than in the left.

Patients with lymphoma of the breast may also have accompanying symptoms of night sweats, weight loss, and extreme fatigue, unlike breast carcinomas. Treatment varies according to the size of the mass, number of masses present in the breast and if the tumor is primary or secondary. Chemotherapy with or without radiation therapy may be prescribed. The combination of drugs used is different from carcinomas of the breast. The drugs are those used to treat non-Hodgkin's lymphoma. Surgery may or may not be required.



Medullary Carcinoma

Other terms used to describe:

Bulky adenocarcinoma
Solid circumscribed carcinoma

Definition of terms:

Adenocarcinoma— Cancer that arises from a gland

Axillary Sampling— Surgical removal of random lymph nodes from under the arm from one or more levels of nodes (you have three)

Carcinoma— Cancer cells that start in surface layers or lining of the ducts

Chemotherapy— Drugs used to kill cancer cells

Circumscribed— Contents confined to a certain area

Hormonal Therapy— Treatment with hormones or anti-hormonal medications

Infiltrating— To grow through cell wall of origin and begin to spread to other tissues

Lumpectomy— Removal of lump and small amount of surrounding tissue from the breast

Lymph Nodes— Pea-like areas in the lymphatic system that filter the body's cellular waste; lymph nodes under the arm filter waste from breast tissues

Malignant— Cancerous; a threat to the body

Mastectomy— Surgical removal of the breast

Metastasis— Spread of cancer to other parts of the body

Miotic Rate— How fast cells are doubling in size

Prognosis— A prediction of the future course of the disease for a patient

Radiation

Therapy— Treatment with x-rays to kill cancer cells

Tumor— Excessive cell growth that creates a lump; may be cancerous or non-cancerous

Medullary carcinoma is a cancerous tumor that is often very large and bulky and grows rapidly (has a high mitotic rate). The tumor is well circumscribed (in one area) and is often 2 to 3 cm (approximately 1 inch) when diagnosed. However, it has a low rate of metastasis (spread) to the lymph nodes. The tumor has a smooth border that pushes into surrounding tissue causing it to show up on mammography as a circumscribed mass. This

cancer occurs more frequently in younger women than many of the other infiltrating cancers and accounts for approximately 3 percent of all diagnoses of invasive breast cancers. The majority of medullary tumors are not estrogen or progesterone positive, which means that these hormones do not seem to promote growth of this cancer.

Medullary Carcinoma on Mammogram



Relatively smooth borders that push into surrounding tissues.

Surgery options vary:

- Lumpectomy, with axillary sampling of lymph nodes and radiation therapy
- Lumpectomy with axillary sampling, radiation therapy, and chemotherapy
- Mastectomy with lymph node removal, chemotherapy, and possibly radiation therapy if the disease is extensive
- Hormonal therapy if the tumor is estrogen or progesterone positive, according to the menopausal status for any procedure
- Overall prognosis for medullary carcinoma is considered good



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Mucinous Carcinoma

Other terms used to describe:

Colloid Carcinoma

Gelatinous Carcinoma

Definition of terms:

Axillary— Area under the arms; armpit

Carcinoma— Cancer cells that start in surface layers or lining of the ducts

Chemotherapy— Treatment with medications to kill cancer cells

Circumscribed— Contents confined to a certain area

Colloid— Resembling gelatin

Gelatinous— Resembling gelatin in consistency

Hormonal Therapy—Treatment with hormones or anti-hormonal medications

Lumpectomy— Removal of lump and small amount of surrounding tissue from the breast

Lymph Nodes— Pea-like areas in the lymphatic system that filter the body's cellular waste; lymph nodes under the arm filter waste from breast tissues

Malignant— Cancerous, a threat to the body

Mastectomy— Surgical removal of the breast

Metastasis— Spread of cancer to other parts of the body

Miotic Rate— Rate at which cancer cells are doubling in number

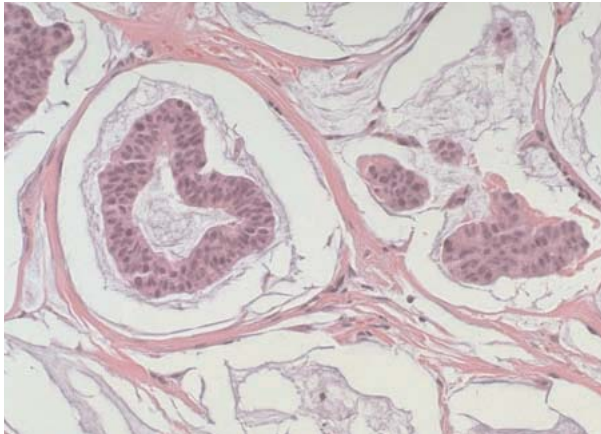
Prognosis— A prediction of the future course of the disease for a patient

Radiation Therapy—Treatment with x-rays to kill cancer cells

Tumor— Excessive cell growth that creates lump which may be cancerous or non-cancerous

Mucinous carcinoma is a cancerous tumor that accounts for 1 to 2 percent of all cancerous breast tumors. The tumor is often very large and bulky because it is filled with a mucin (gelatin-like substance) that varies from very soft to firm in consistency, according to the amount of fibrous tissue in the tumor. Cancer cells float in the gelatin-like substance, often causing the lump to feel spongy, like a breast cyst. Usually, the cancer has not spread to the lymph nodes and the prognosis is favorable.

Mucinous Carcinoma Pathology Slide



Cancer cells float in thick mucin substance.

Surgical Options

Surgery options vary according to the size of the tumor in relation to the size of the breast. They include:

- Lumpectomy with axillary lymph node sampling and radiation therapy
- Lumpectomy with axillary lymph node sampling, radiation therapy and possibly chemotherapy
- Mastectomy with lymph node removal, chemotherapy and possible radiation therapy.

Most mucinous carcinomas prove to be positive for estrogen and progesterone receptors. Thus, hormonal therapy with Nolvadex® (tamoxifen), may be added according to the menopausal status of the woman.



Paget's Disease

Definition of terms:

- Areola**— Dark, colored circle surrounding nipple
- Biopsy**— Procedure to remove cells or tissues for study by a pathologist
- Chemotherapy**— Treatment with medications to kill cancer cells
- Infiltrating**— To penetrate through the walls of the ducts from which a cancer began to grow
- Intraductal**— Found inside of a duct
- Lumpectomy**— Removal of lump and small amount of surrounding tissue in the breast
- Lymph Nodes**— Pea-like areas in the lymphatic system that act as filters for the body's cellular waste; lymph nodes under the arms filter waste from breast tissues
- Mastectomy**— Surgical removal of a breast
- Malignant**— Cancerous; a threat to the body
- Metastasis**— Spread of cancer to other parts of the body
- Radiation Therapy**— Use of x-ray treatments to kill cancer cells

Paget's disease is a disease of the nipple, areola and the ducts under nipple that has a sticky and occasionally bloody discharge and causes irritation (eczema) with itching of the nipple and areola. A thickening of the nipple area and a crusty discharge may be found on one breast. If left to progress, it will eventually turn into an open sore. Usually there is no lump found under the nipple area, but biopsy often confirms intraductal cancer and, occasionally, an infiltrating cancer. Paget's disease accounts for about 3 percent of all breast cancers.

Surgery is required for this disease. Mastectomy is usually performed because lumpectomy is cosmetically not acceptable to some women (removal of area under nipple creates a doughnut-look to the breast with a lumpectomy). However, a lumpectomy may be performed. Lymph nodes are removed and checked to determine whether the cancer has spread from the breast. Chemotherapy and radiation therapy will be based on the tumor cell type and size, number of lymph nodes positive for cancer, age, and menopausal status.



Papillary Carcinoma

Definition of terms:

- Axillary Sampling**— Surgical removal of random lymph nodes under the arm from one or more levels of nodes (there are three)
- Carcinoma**— Cancer cells that start in the surface layers or lining of the ducts
- Lumpectomy**— Removal of lump and small amount of surrounding tissues from a breast
- Lymph Nodes**— Pea-like areas in the lymphatic system that act as filters for the body's cellular waste; lymph nodes under the arms filter waste from breast tissues
- Malignant**— Cancerous; a threat to the body
- Mastectomy**— Surgical removal of a breast
- Metastasis**— Spread of cancer to other parts of the body
- Papillary**— Growth that has a stalk-like base
- Radiation Therapy**— Treatment with x-rays to kill cancer cells
- Tumor**— Excessive cell growth that creates a lump; may be cancerous or non-cancerous

Papillary carcinoma accounts for approximately 2 to 3 percent of all malignant tumors. Fifty percent of the tumors of this type are located in the center of the breast near the nipple. It is found more often in later life with the average diagnosis occurring from 63 to 67 years of age, with an increase in occurrence in African American and non-Caucasian populations. The tumor is most often found as a lump in the breast that can be felt. Often the papillary carcinoma will occur inside of a cyst-type wall that gives the tumor a well-circumscribed shape (well defined) or lump. Tumors are usually positive for estrogen and progesterone receptors (they are stimulated to grow by hormones). Approximately one-third of women have a nipple discharge as the first symptom. Lymph node metastasis may be present, but this cancer is considered a slow-growing type with a good prognosis.

Surgery options will include a lumpectomy with axillary node sampling and radiation therapy or modified radical mastectomy with lymph node removal. Treatment options will vary according to size of the tumor, lymph nodes involved with the tumor, how fast the tumor is growing, estrogen/progesterone receptor status, age and menopausal status of the patient.



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Tubular Carcinoma

Definition of terms:

- Carcinoma**— Cancer cells that start in the surface layers or lining of the ducts
- Lymph Nodes**— Pea-like areas in the lymphatic system that filter the body's cellular waste; lymph nodes under the arms filter the majority of waste from breast tissues.
- Lumpectomy**— Removal of a lump and surrounding tissues from the breast
- Malignant**— Cancerous; a threat to the body
- Mastectomy**— Surgical removal of a breast
- Metastasis**— Spread of cancer to other parts of the body
- Microcalcifications**— Small, dense areas of tissue seen on mammography; may be related to a malignant or benign disease
- Pathologist**— Physician who specializes in examining tissues for disease
- Prognosis**— A prediction of the future course of a disease for a patient

Tubular— Having the shape of tubes

Tumor— Excessive cell growth that creates a lump; may be cancerous or non-cancerous

Well Differentiated— Look very similar to the cells from which they came

Tubular carcinoma is a cancer that accounts for approximately 9 percent of cancers found on mammography with an overall occurrence rate of around 2 percent of all breast cancers diagnosed. This tumor may show up on mammography with microcalcifications or having stellate margins (irregular borders, characteristic of malignancies). The majority of tubular carcinomas are small tumors, usually 1 cm (3/8 inch). Because of the advances in screening mammography, tubular carcinomas are diagnosed in earlier stages and at much smaller sizes. If the tumor is large enough to be felt, it forms a firm to very hard lump in the breast and may cause skin retraction or puckering in the area of the tumor. When the tumor is removed from the body, the pathologist identifies the tumor based on the large number of tubules (small tubes) that are well-differentiated (good sign). If 75 percent of the tumor is composed of well-differentiated tubular cells, the prognosis is excellent. Tubular carcinoma has a low rate of metastasis (that is, it spreads slowly) to the lymph nodes.

Surgery options consist of lumpectomy with sampling of lymph nodes or modified radical mastectomy with removal of lymph nodes. Treatment options will be determined by the type of surgery performed, size of tumor, number of lymph nodes positive with cancer, estrogen, and progesterone receptor status, how fast the tumor is growing, age, and menopausal state.



SURGERY AND RECONSTRUCTION



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Breast Cancer Surgery Preparation

Surgery for breast cancer is not a planned event in a woman's life, nor is it a medical emergency. After your diagnosis, you will have some time to prepare and learn about your disease and treatment options before your surgery.

After learning you have cancer, it is important that you find a support system. You need to identify one person or several people with whom you can communicate openly and honestly. If you do not find this person in your family unit, reach out to a support group, friend, or professional counselor. It is helpful to have someone with whom you can discuss the information about your disease, treatment options, and recovery.

Learning about your disease is an important part of restoring a sense of control to your life. Ask your treatment team for written information on every aspect of your disease and treatment. Free information can be obtained from the American Cancer Society by calling your local office or by calling the National Cancer Institute at 1-800-4CANCER. After reading the material, make a list of questions to ask your physician or treatment team.

Discuss all treatment options with your physician. Someone should accompany you to this appointment or you should tape-record this session to give you an accurate record of the decisions that you will need to participate in regarding your treatments.

Surgery is the first line of treatment against breast cancer. There are two basic types of breast surgery: **lumpectomy** (breast-conserving surgery) and **mastectomy** (removal of the entire breast). Talk first with your physician about the rationale in recommending a particular surgery. You may have the option of choosing between a mastectomy and a lumpectomy. It may be helpful if you speak with other women who have had similar surgeries. Acquire their names from your own surgeon or call the American Cancer Society and ask for a breast cancer volunteer to call you. **It is important to feel comfortable with the decision you make.** This is also the time to consider reconstruction of the breast, even if you plan to delay the reconstructive surgery until a later date. Ask for written information about reconstruction. If you wish to have reconstructive surgery, inform your surgeon and request a consultation with a plastic surgeon. This will be helpful in preventing future problems and will give you a clear understanding of your options.

If a **lumpectomy** is the surgery of choice, it will be helpful to have a consultation with a radiation oncologist. Radiation therapy is usually given for five to seven weeks after breast conserving surgery. During this consultation you will discuss your surgery and the treatments that will follow.

Consultation with an oncologist, a physician who specializes in the treatment of cancer, is very valuable in making critical decisions. Treatment decisions often vary according to the type of surgery. If needed, an oncologist can help you understand how your surgery may affect your chemotherapy treatment and can prepare you for this phase of treatment.

After a surgical decision has been made and your treatment team selected, the next step is to prepare for surgery. Before your surgery, you will be required to have a pre-admission work-up, which includes a blood profile, chemistry profile, urinalysis, electrocardiogram and any other tests your physician may feel necessary. It is very important that during this work-up you report any allergies, prescription or non-prescription medications, past physical problems, and names of physicians treating you for any other medical conditions. Your insurance information will be needed during this assessment. You will need to present for your record a living will if you have one. A living will is a legal document stating your wishes about types of treatment you desire if you can no longer make medical treatment decisions. It is now required by law that you be asked if you have made this decision. You will be given surgery-day instructions, such as not to eat or drink anything past midnight before the day of your arrival time.

Hospitalization after surgery for breast cancer usually ranges from overnight to several days for a mastectomy, and one night or outpatient surgery for a lumpectomy. However, some areas of the country are offering women the choice to have their lumpectomy or mastectomy surgery as outpatients.

Someone should accompany you on the day of surgery to provide you with emotional support and, after the surgery, to assist you with

personal needs. If you are to remain overnight the following items will be helpful:

- Gown or pajamas, front opening preferably
- Robe
- Undergarments
- Bedroom slippers
- Telephone numbers of family and friends
- Reading material
- Note pad and pencils/pens
- Clothing to wear home—large clothing that is soft, comfortable and conceals a drain if one is left in place

The day before surgery, review your instructions for admission to the hospital. If you have any questions or concerns, call and ask for clarification. Plan to get a good night's sleep the night before your surgery and prepare to leave home early to allow yourself ample time to be prompt. It is helpful to find out about parking provisions and where the surgery suite is located before the morning of admission to prevent tardiness.

Inform your nurse if there have been any changes in your physical condition such as nausea, diarrhea, or fever since your pre-admission work-up. Prior to your sedation, you will be asked to sign an Informed Consent form from your physician. It states that your surgical options, treatments and rationale for treatment have been fully explained and that you understand them to your satisfaction. If you have any additional questions, ask. On the day of surgery, do not bring any money, credit cards, or checkbooks with you. Leave these with family members. Do not wear any jewelry, contact lenses, or nail polish. If needed, bring your glasses to read and sign surgery forms. If you have a dental bridge or false teeth, your nurse will remove them along with your

eyeglasses prior to your surgery and place them in a special container. You will have access to them when you awaken. Family members can bring your suitcase in when you are assigned a room.

Surgery will require approximately one hour, followed by several more hours in a recovery room before you are moved to your room. Family members or friends will be allowed to wait in the surgery waiting room where the physician will talk to them after your surgery is completed. The number of people allowed in the waiting room may be limited because of space. On the day of your pre-admission work-up, ask if there is such a limit and for the telephone number of this waiting area.

Surgical Assessment Date _____

Time _____

Location _____

Special Instructions:



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Central Intravenous Port

Commonly Called: Port-a-cath®, Life Port®, Vascular Access Device

A **central intravenous** (into a vein) catheter (tubing), with a metal access is a device implanted under the skin. It is often referred to as a port or a vascular access device, and is used to deliver medications, blood products, and to draw blood. Many of the chemotherapy products are irritating (cause burning or pain) to small veins, but are tolerated without irritation if given through a larger vessel. Some people have very small or fragile veins that are difficult to locate. These veins can become irritated when they are repeatedly used to administer chemotherapy. To eliminate these problems, a central intravenous port may be recommended by a physician.

The port offers an effective route for the administration of needed therapy without the side effects of irritation to vessels or the inability to find a suitable vein in the arm. Blood samples for blood studies can also be drawn from this port, eliminating the repeated arm or finger stick. A central port frees the arms and hands during treatment.

Physicians may recommend a central intravenous port for the following reasons:

- Frequent need for giving medications or drawing blood using a vein
- Treatment period to last over several months
- Continuous infusion chemotherapy to be given

- Home infusion of chemotherapy needed
- Use of irritating drugs (vesicants)
- Small veins that are hard to find and require multiple sticks on each visit
- Venous access limited to one arm
- Need for two drugs to be given at one time (double lumen catheter used)
- Patient prefers a port to arm sticks

The port is placed under the skin, usually on the chest wall, by a surgeon in a hospital or clinic. Local anesthesia (not general) will be injected into the area because the patient must be able to hold her breath on command, be placed in a position where her head is lower than the rest of her body, and follow directions in regard to head positioning and turning. Therefore, general anesthesia is not used. The physician usually administers medication for relaxation. The procedure is uncomfortable but not painful.

A catheter will be inserted into a large vessel, usually the large vessel under your collarbone, and through to the area right above your heart. An incision will be made on your chest to insert the access port to the catheter under your skin. The port and catheter are both under the skin. A small lump from the port is visible on your chest. When therapy is needed, a nurse or physician will access the port by inserting a needle into the rubber portion of the port. When therapy is not in progress, the needle will be removed and medication to prevent clotting will be inserted into the port.

Because the port is under the skin, there are no restrictions as to bathing, nor are there any care procedures for the port. A nurse or physician administers all care of the port. The port may be left in place until the physician determines you will no longer need any treatment.

Signs that need to be reported to physician include:

- Fever over 100.5° F
- Pain in area of port or shoulder
- Any redness or local swelling in area of port
- Any generalized swelling on side of chest where port is located
- Any burning sensations when medications are infusing
- Any drainage in the area of the port insertion

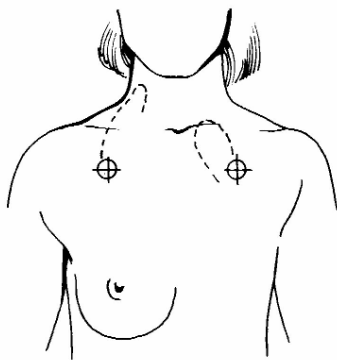
Date _____ Time _____

Facility _____

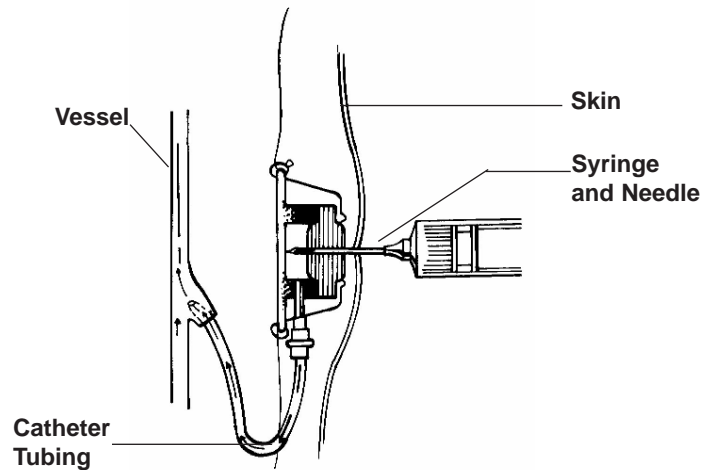
Location _____

Surgeon _____

Preoperative Instructions _____



Port may be placed on either side of chest.
Port is all under the skin.



Port is accessed with a needle for treatments. When I.V. needle is removed, it seals itself.



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Central Venous Catheters

Hickman® Catheter **Broviac® Catheter** **Groshong® Catheter**

Other terms: In-dwelling catheter; tunneled central venous catheter; right atrial catheter; or long term indwelling catheter.

A **Hickman®**, **Broviac®**, or **Groshong® catheter** is a special tubing inserted under the skin of the chest into a large vein (usually the large vein under the collar bone) to deliver medications and blood products. Many chemo-therapy medications can cause irritation (burning or pain) when given through small vessels, but are tolerated well if given through a larger vessel. Some people have fragile veins that are difficult to locate. A central catheter provides good access to the venous system. Your physician may request a central line be inserted to facilitate your treatment.

The catheter offers an effective route for the administration of chemotherapy without the side effect of irritation of the veins or the difficulty of finding a suitable vein on the hands or arm. Samples for blood studies can also be drawn from the catheter, eliminating repeated arm or finger needle sticks. An in-dwelling catheter allows your hands to be free during treatment administration.

The catheter is surgically inserted in a hospital or clinic. The patient must be able to have her head placed lower than her body for a period of time, to follow directions for positioning and turning of the head, and to hold her breath on command. Because of this, only local anesthesia is given to the area where the catheter will be placed. A general medication is usually given by the physician for relaxation only. The surgeon will tunnel the catheter under the skin and into the vessel until it reaches the area right above the heart. The catheter is anchored in place by sutures. Located under the skin is a small cuff-like area that allows body tissue to grow into the material and create a natural seal from outside.

The in-dwelling catheter will have a portion of the tubing extending out of the chest, which may include one to three tubings, allowing for the administration of three separate medications at one time. The catheters will allow access for your chemotherapy, blood products and blood samples. Your physician or nurse will explain care of the catheter. The catheter will require dressing changes to the site and will have to be flushed with a special solution to keep the catheter from clotting. The catheter will remain in place until therapy is completed.

Signs and symptoms that need to be reported to the healthcare provider are:

- Fever over 100.5° F
- Chills
- Redness, swelling or discharge at the entry site of the catheter
- Pain in local area, neck, or shoulder
- Swelling in chest or arm located on the side of the catheter insertion
- Any unusual drainage from around the catheter insertion site
- Burning sensation when medication is infusing

It is important to know the kind of catheter your physician has inserted. In case of emergency care, you would need to be able to relay this information to the health professional.

Surgery Date _____

Time _____

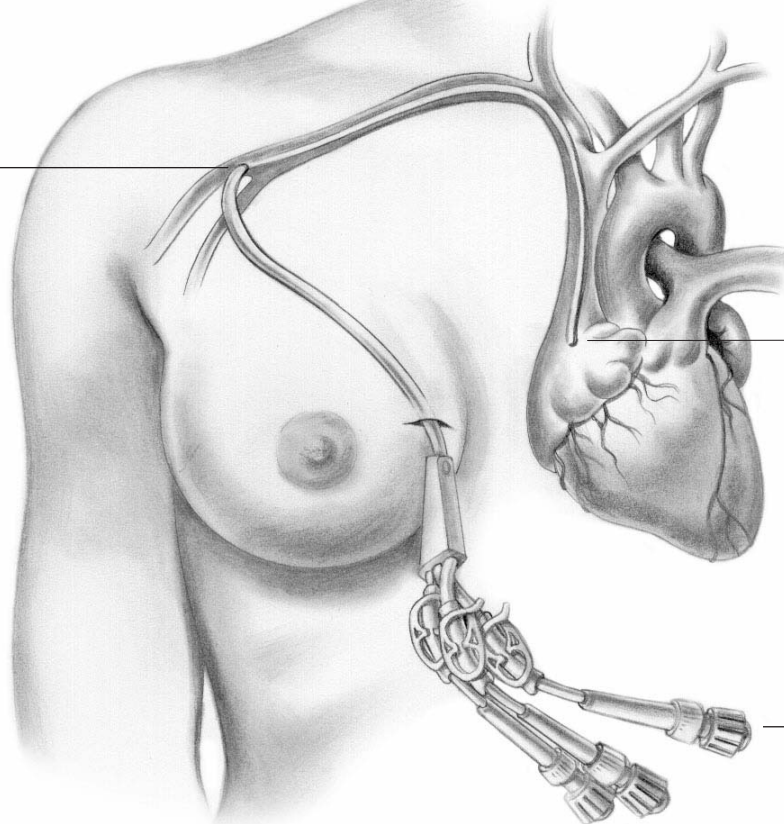
Facility _____

Surgeon _____

Type of Catheter Inserted _____

Care of your catheter _____

Catheter Inserted into Vein



Tip of Catheter Rests in Upper Area of Heart

Up to 3 Tubings Allow Multiple Treatments



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Drains — Care and Instructions



You may have one or two drains in your surgical incision that have been placed there during surgery. These drains are used to collect the fluid accumulation at the surgery site to reduce swelling and pain. These drains are closed-suction drainage systems with a tubing anchored to your tissue during surgery. There is a plastic drainage bulb at the end of the tubing with an opening to allow removal of fluid. These closed drainage systems may be referred to as Jackson Pratt® (JP) drains and Hemovac® drains.

Prior to this type of drainage system, women were hooked to an electrical suction pump to remove fluid accumulation. This newer system allows women more mobility and an earlier return home.

The bulb is made of soft plastic with a plug-type opening. To move the fluid from the incisional area, squeeze the bulb firmly while

the plug is open and reinsert the plug into the bulb. Reinserting the plug into a squeezed drain creates a negative pressure to move the fluid from the incisional area into the drainage bulb. This prevents fluid from accumulating under the skin, referred to as a "seroma." The fluid is composed of a mixture of blood cells and lymph fluid. During surgery, the lymphatic system was cut, causing the microscopic vessels to empty their fluid in the area. The drainage will at first be red because of the large amount of blood cells in the area. It will gradually change to a pink tinge, and finally to a yellow, straw-like color.

The amount of drainage varies and there is no way to predict how much drainage any woman will accumulate. Neither body size nor age seems to determine the amount. However, if you have a large amount of drainage the first 24 hours, you will probably continue to accumulate large amounts. The amount of fluid production has nothing to do with cancer, but only with the amount of lymph fluid your body produces. Gradually, these small lymph vessels seal themselves off, and the fluid stops accumulating. The time for this to occur varies among patients. Physicians remove the drain(s) at a designated time past surgery or when the accumulation of fluid decreases to a certain amount. Drainage amount varies among surgeons and ranges from 20 to 50 ccs. (4 to 10 teaspoons) per drain, each 24 hours before drain removal. Women with very little drainage may have their

drain(s) removed within the first week. However, some women produce fluid much longer and need their drain(s) for several weeks and sometimes longer. If drains are removed too soon, the fluid can accumulate under the skin forming a seroma (collection of fluid), and become painful from pressure placed on the surgical site. It is important not to allow the drains to hang loosely. Always secure them to your clothing and empty them when they become heavy. This may be every few hours on the first day; later twice a day will be sufficient. Pressure from a heavy drain can cause the formation of scar tissue at the insertion site. Be careful not to allow them to drop.

Emptying and Recording Your Drainage

- Empty drains when they become heavy or over half-filled with fluid. When your drainage has decreased to a small amount, empty twice a day.
- If you have more than one drain, mark each drain with a number (drain 1 or drain 2) by attaching a piece of tape and writing on it. Refer to the amounts emptied and record by the number designation.
- Gather supplies: drain record, a pencil or pen, and a measuring cup.
- Open one drain by removing the plug in the drain bulb and empty drainage into measuring cup.
- Squeeze the air out of the empty bulb. Keep bulb squeezed as flat as possible as you replug the drain. Compression of the bulb encourages the flow of fluid from the surgical site into the bulb.
- If any of the drainage spilled on the outside of the bulb, wipe the outside of the drain bulb with a damp cloth using soap and water or an alcohol wipe.

- Secure the bulb by pinning it to clothing or placing it into a surgical drainage bag holder. Do not allow the bulb to hang freely.
- Measure the drainage in the cup.
- Observe the color of the drainage. If the fluid starts becoming a darker red or appears to have fresh blood reappearing after the color had changed to a light pink, inform your healthcare provider of the change.
- Empty drainage into the toilet and flush. Do not save the drainage.
- Wash your hands with soap and water.
- Record the drainage under the appropriate column, noting the time emptied.
- If you have a second drain, repeat the process.
- Take the written drainage record to the surgeon on your return visit. An accurate record will assist the physician in determining when to remove your drain(s).

Leaking Drain Site

Occasionally, a small amount of fluid may leak from around the insertion site onto your skin. This is not dangerous. However, you should apply a sterile dressing and change the dressing when it becomes damp. Do not allow a wet dressing to remain in place; it can cause an irritation and breakdown of the skin. If large amounts of drainage leak from the site, call your surgeon or nurse and ask for instructions.

Clogged Drain

If you notice that a drain that had been draining freely suddenly stops draining, you will need to check the tubing. Small clots can form in the tubing and block the flow. Wash your hands before you begin. Look carefully at the tubing for a small clot. If present, gently squeeze the area with your fingers. After you



Hematoma

A **hematoma** is a collection of blood under the skin caused by a break in a blood vessel. Hematomas can occur as a result of injury to the breast or after a surgical procedure. As the vessel begins to bleed into an open space, clotting will usually take place. The area will then seal itself off and the bleeding will stop.

A hematoma is identified by pain in the area, swelling, and change of color in the surrounding skin. The area will vary, changing from dark reddish, turning to bluish-purple color and finally to a yellowish tint of the skin.

A hematoma usually causes pain. The degree of pain varies according to the size of the hematoma and the place in the breast where the hematoma occurs.

Hematomas may be caused by:

- Injury to the breast tissue from a direct hit to the breast
- Seat belt trauma during a sudden stop or accident
- Needle aspiration biopsies
- Surgical procedures to the breast

Notify your surgeon if you notice an area in your breast that:

- Begins to swell, forming a lump suddenly
- Exerts pressure on the breast tissue

- Becomes painful
- Changes the color of the breast in a localized area to a dark reddish-blue color

Most hematomas are self-limiting—they are not dangerous and in time will resolve without intervention from the surgeon. However, some hematomas may need to be aspirated (have the bloody fluid withdrawn) to relieve the pain or pressure. Your surgeon will need to evaluate the hematoma so that appropriate treatment can be recommended.

Treatment for painful hematomas

(after physician's evaluation):

- Taking analgesics, such as Tylenol®
- Support with a good-fitting bra
- Wearing a good-fitting bra while sleeping
- Limiting activities that involve a lot of arm or body movement

Hematomas may cause changes in breast tissue that may be evident on future mammograms as changes or microcalcification in the area. Inform your healthcare provider or mammographer of the location of the injury and hematoma history.

Instructions for hematoma:



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How Physicians Make Surgical Decisions

Surgery is the first line of defense against most breast cancers. Your surgeon will discuss with you the best surgery for your diagnosis. Your surgeon will consider the following facts in determining which surgery best suits your needs:

- Type of tumor—Type was diagnosed by biopsy and confirmed by the pathology report. There are approximately 15 cell types of breast cancer that vary in tumor growth rate, aggressiveness of tumor for spreading to other organs and potential for occurring in the other breast.
- Size of the tumor—Sizes are given in centimeters and millimeters. (10 millimeters equal one centimeter; one centimeter equals 3/8 inch; one inch equals 2.5 centimeters.)
- Size of your breast—Some breasts may be too small in comparison to the size of the lump to result in good cosmetic appearance when the lump is removed.
- Location in your breast—Tumors under the nipple sometimes will not result in a suitable cosmetic look when the lump is removed.
- Possible tumor involvement in lymph nodes.
- Appearance of mammogram—possibility the tumor is multicentric (occurring more than one place in the breast) as evidenced by microcalcifications or mammographic abnormalities.
- Involvement of other structures such as the skin, muscle, chest wall, bone or other organs.
- Your desire for reconstruction now or later and the desired outcome for the reconstructive surgery—breast enlargement, reduction or to match present breast size.
- Your general health and any limitations for treatment because of health.
- Which surgery will give you the best chance for a cure?
- Which surgery will give you the best cosmetic results?
- Which surgery will give you the best functional results for your arm and shoulder?
- Which surgery is associated with the fewest short-term and long-term complications?
- What your priorities are regarding the surgery.

Each tumor must be evaluated in terms of its unique and specific features and what surgery will be best for you. Some types of breast cancer may require chemotherapy treatments before surgery. Some types of breast cancer may require chemotherapy treatments before your surgery. Discuss the above considerations with your surgeon and ask any questions that will help both of you make a rational decision.



ST. VINCENT'S BREAST HEALTH CENTER

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St. Vincent's Breast Health Center
1800 Barrs Street
Jacksonville, Florida 32204

Incision Care

It is important to take care of your incision after your breast surgery to prevent infection in the area. Ask your healthcare provider if there are any specific instructions concerning care of your incision. Surgical scars vary according to the type of surgery you have received. Lumpectomy surgery usually consists of two scars, one on the breast and one under the arm. A mastectomy scar is one long scar.

You should keep a clean, dry dressing in place over the incision and monitor the area for changes that would indicate an infection.

The first dressing changes usually occur in the hospital or clinic. Watch closely as the nurse changes your dressing; ask for instructions and for dressing supplies for your dressing changes at home. You will probably need help from a family member or friend to help you with dressing changes because of the soreness and difficulty of working on your own chest.

Changing Your Dressing

1. Gather all dressing supplies:
 - Paper bag for disposal of old dressing
 - Dressing
 - Tape
 - Scissors
 - Alcohol sponges
2. Prepare tape strips
3. Wash your hands
4. Remove old dressing

5. Note the color and amount of drainage on dressing
6. Dispose of dressing in paper bag
7. Wash your hands thoroughly with soap
8. Observe incision carefully
9. Wipe any old blood or tape with the alcohol wipe; always wipe starting near incision and wipe in a direction away from and not back over the incision.
10. Place clean dressing on the area and tape into place
11. Dispose of paper bag containing old dressing
12. Wash your hands with soap

Dressings should always be changed if they become soiled or damp. A wet dressing will set up an environment for bacteria to breed and could cause a potential infection. **Always keep your dressing dry.**

When changing your dressing, first observe the old dressing for signs of drainage. Normal drainage is a blood-tinged, watery discharge. Discharge that is thick and yellow or green may indicate infection. Often, this type of discharge will have a foul odor. If you notice this occurring, notify your healthcare provider.

Carefully observe the incision site. An increase in redness, swelling and signs of discharge anywhere along the incision line may indicate a potential infection. Call your healthcare provider for instructions. Often, early intervention may require a local antibiotic to the area.

If you have drains, ask for the patient teaching sheet on care of drains.

Ask your healthcare provider when you can shower, take a tub bath and use soap and water on the area. Some physicians allow showers before tub baths because of the constant flow of clean water over the incision. After your bath, pat the area dry and protect with either a soft dressing or covering to prevent irritation from clothing until the area is completely healed. Some women find that a soft tee shirt or a long line cotton sports bra, which is sold in department stores, serves this purpose.

It is important not to contaminate the incision area with powder, deodorant, perfume or lotion. Do not use deodorant for at least six weeks. Perspiration odor is not a problem because of the removal of glands from under the arm. However, you can wipe the area with alcohol to cleanse.

Your scar area will change as it heals. First, the area will appear red and swollen or raised. This is normal and results from the increased flow of blood to the area. Usually the scar will gradually flatten out and lighten in color. However, some women form scars that are raised.

After your incision is completely healed, it is important that you begin breast self-exam on the surgical scar area. For a mastectomy patient this should begin approximately three months after surgery. Lumpectomy patients should begin breast self-exam when they complete their radiation therapy and the surgical wound is completely healed. Ask for instructions on how to perform this vital skill for your continued good health.



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Incision Infection

With any type of incision there is a potential for infection. Surgery interrupts the skin that protects the underlying tissues from normal surface bacteria and bacteria found in the environment. Microscopic bacteria can enter the incision area and begin to grow. Fluid accumulation from a seroma (collection of fluid) or a hematoma (collection of blood) under the skin increases the chance of an infection occurring. Tissue that becomes dark because of lack of blood supply (necrosis) is another area that is susceptible to infection.

Monitoring the area for signs of infection is important. **If any of the following occur, notify your physician immediately:**

- Temperature over 100.5° F
- Chills
- Redness, swelling, and pain along incision line, accompanied by increased warmth
- Drainage from area that is yellow to greenish in color
- Drainage that has a foul odor

Your physician will determine if your symptoms require antibiotics. It is important to take medication as ordered. Do not stop taking the medication if symptoms improve. Complete the prescription as directed.

If a seroma or a hematoma is involved, the physician may aspirate (draw off the fluid) with a needle and syringe. Removing the fluid is uncomfortable but not painful.

If the incision has tissue that has turned dark (necrosis), the area may have to be surgically removed by the physician. The degree of tissue that needs to be removed will determine if the procedure is performed in an office, clinic or hospital.

It is imperative to keep any dressing and the incision area clean and dry. Change the dressing as often as required to keep the dressing dry. Ask your nurse for written instructions for your dressing change.

Wound infections after breast cancer surgery are not common, but they do occur. Prompt reporting of any symptoms of infection will allow your healthcare provider to order medications that can eliminate the infection before it progresses and requires hospitalization.

Additional instructions on incision infection:



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Informed Consent

Informed consent is a required form that you will be asked to sign prior to surgery or treatment stating that a physician or member of the treatment team has satisfactorily explained to you the following:

- Why treatment is necessary
- Type of surgery or treatment you will receive
- Advantages of receiving the surgery or treatment
- Risks involved with the surgery or treatment
- What treatment will involve
- Expected outcomes of treatment or surgery
- When treatment will begin and end
- You have no other questions regarding the recommended surgery or treatment

This form is to be read and signed by you before any sedation is given. Read the consent form carefully. Ask any additional questions or request any additional information at this time if you need clarification of any area of the treatment. Types of forms will vary in different hospitals and clinics, but basic to all of them is the fact that you are given the opportunity to understand to your satisfaction the surgery or treatment you will receive.



Lumpectomy

Lumpectomy is a commonly used term to describe the removal of a tumor with varying amounts of surrounding tissues from the breast, leaving the remainder of the breast intact. Your physician will evaluate your candidacy for breast-conserving surgery (lumpectomy) by assessing:

- Size of your tumor compared to the size of your breast; a large tumor in a small breast will not produce good cosmetic results
- Pregnancy (pregnancy disqualifies if there is a need for immediate radiation therapy)
- More than one tumor in your breast
- Mammogram showing scattered micro-calcifications (may indicate high risk for recurrence)
- Location of tumor in breast (tumors under the nipple produce poor cosmetic results)
- Evidence of involvement of skin, muscle, or chest wall from an invasive tumor
- Large pendulous breast (may be difficult to adequately radiate the remaining tissues)
- Collagen vascular disease or lung disease
- Restrictions on travel or transportation to clinic for daily radiation for five to six weeks
- Your priorities regarding surgery

Breast conserving surgery has advantages and disadvantages to consider. It is important

that you understand these and discuss your feelings with your physician if you are a candidate for breast conserving surgery.

Advantages:

- Conserves a major portion of the breast, usually the nipple and areola
- Hospitalization is shorter and surgery may even be done on an outpatient basis
- Recovery time from surgery is shorter
- Body image remains intact
- Rarely requires reconstruction
- You can wear your own bras and do not need a prosthesis
- For most women, emotionally, it is not as difficult to accept as mastectomy

Disadvantages:

- Recurrence of cancer in remaining breast tissue is a risk
- Radiation therapy is usually required; five to seven weeks in duration
- Changes resulting from radiation to breast are in texture, color and sensation of feeling
- Decrease in size of the remaining breast tissue after radiation therapy
- Need to perform breast self-exam on breast after radiation, which causes increased lumpiness (psychologically difficult for some women)
- Possibility of second lumpectomy or mastectomy if cancer recurs in breast

It is important to understand that even with local recurrence, the overall survival rate in patients is not less successful when compared to mastectomies.

This breast-conserving surgery is further defined according to the amount of breast tissue that is removed. Ask your physician which of the following surgeries you will need.

■ **Partial or Segmental Mastectomy**

The tumor, over-lying skin, and an area of tissue around the tumor are removed with this surgery. A portion of the lining of the chest muscle under the tumor and some of the skin may also be removed. Lymph nodes may or may not be removed through a separate incision under the arm.

■ **Tylectomy**

The tumor and a wide area of tissue around the tumor are removed during surgery. Lymph nodes may or may not be removed through a second incision under the arm.

■ **Lumpectomy**

Lumpectomy removes the tumor and a small wedge of surrounding tissue. Lymph nodes may or may not be removed by a separate incision under the arm.

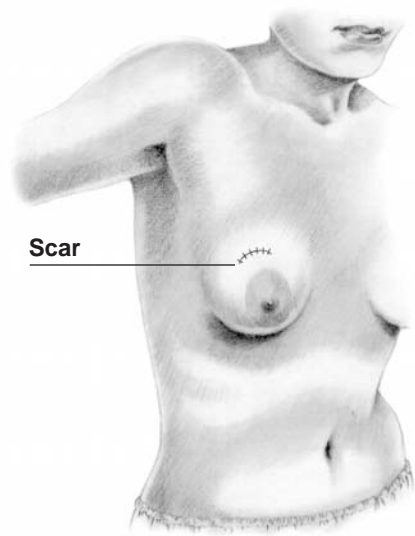
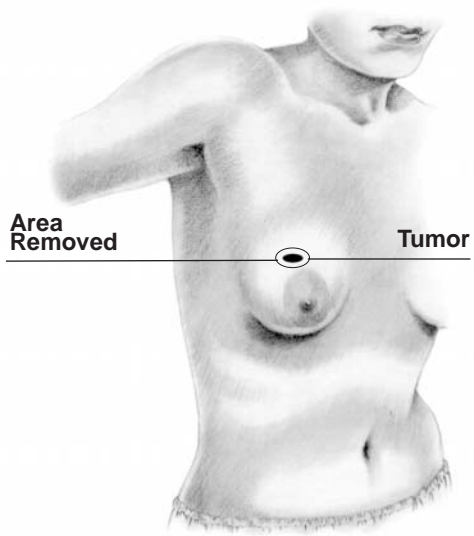
Incisions for the breast-conserving procedures described above look very similar, with the cosmetic appearance of the breast differing according to the size of the tumor and the amount of tissue removed.

Prior to hospitalization, you will be required to have a pre-admission work-up including blood work, electrocardiogram, and any other diagnostic tests your physician may feel necessary. Surgery is usually performed in a hospital with admission early the same day.

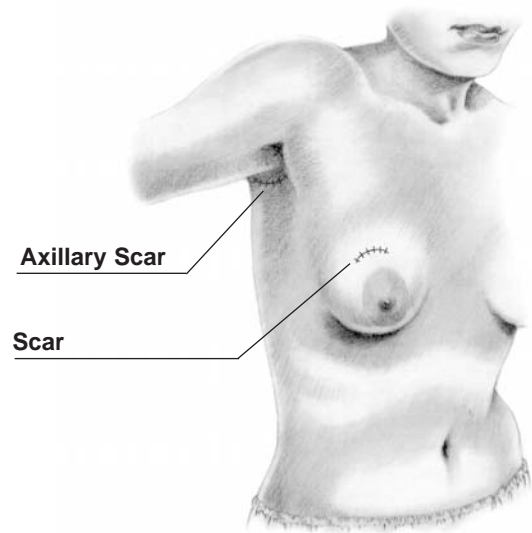
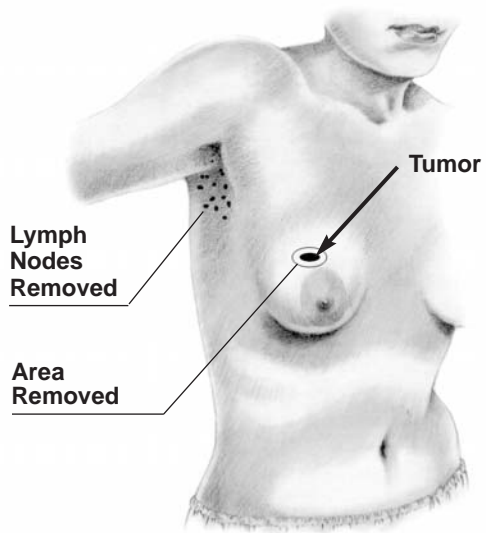
General anesthesia is usually given. The tumor with surrounding tissue is removed and lymph nodes under your arm may be removed in a separate incision to evaluate if the tumor has spread from your breast. The surgery time is around one hour, followed by several hours spent in the recovery room. Hospital stays are only one night and some surgeries are now being performed on an outpatient basis. Pain is moderate and is controlled with oral pain medication after you are able to eat and drink. Some lumpectomy patients have a drain to remove fluid accumulation from the site. Instructions will be given by the nurse on how to empty the drain(s) and record the drainage until the surgeon removes the drains in several days. Recovery time at home is around one to two weeks.

Several weeks after a lumpectomy, radiation therapy is usually given to the remaining breast tissue for five to seven weeks. Treatments usually are given Monday through Friday and require only 10 to 15 minutes. Radiation therapy is painless and you will not be radioactive. You can interact with your family as usual. However, changes that may occur are a slight sunburn effect to the breast area resulting in change of color and sensitivity to the breast, sore throat, dry cough, and fatigue. Most women are able to continue their usual activities while they are receiving radiation therapy.

Lumpectomy is an alternative surgery to mastectomy for breast cancer. Survival rates are equal to mastectomy. If you would like to discuss your decision with a woman who had a lumpectomy, ask your healthcare provider for a name, or call the local American Cancer Society for the name of a volunteer who has had a lumpectomy. The decision should be carefully considered and discussed with your physician.



**Lumpectomy Without
Axillary Lymph Node Removal**



**Lumpectomy With
Axillary Lymph Node Removal**



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Lumpectomy Discharge Information

Surgeon _____

Telephone _____

Date of Return Appointment

Time _____

Special Instructions _____

1. Eat a well-balanced diet and drink a minimum of eight 8-ounce glasses of fluids daily.
2. Rest as needed. Take short walks several times a day to get regular exercise.
3. Take pain medication, if prescribed, as directed. If pain is not relieved, notify healthcare provider.

4. Call your healthcare provider if you:

- Have a temperature over 101° F
- Have chills
- Have a sudden increase of bright red blood in bulb drains
- Cannot keep fluid or food down for more than 24 hours
- Have sudden onset of pain in your arm or surgical site
- Notice your surgical area becoming red, swollen or painful; or if there are signs of pus (thick yellow or a greenish discharge, or if the discharge has a foul smell)

5. Continue to use your arm to eat, bathe, and comb your hair. Do not lift heavy objects (greater than several pounds) until the incision has healed and swelling has subsided. Do not begin any exercise program without the consent of your healthcare provider. Ask your healthcare provider when you can drive your car.

6. Showers are suggested until incision heals, unless your physician gives permission for a tub bath. Keep your dressing on the incision dry.

7. If you return home with drain(s):
 - a. Empty drain(s) twice a day or more often if necessary.
 - b. Open the plug and pour drainage into a measuring cup, record the amount and then dispose of drainage in toilet.
 - c. Squeeze the drain bulb and replug it.
 - d. Pin the drains to your clothing so that they do not tug on your skin.
 - e. Take a record of drainage with you to your next physician visit.
 - f. After the doctor removes the drains, watch for any excessive swelling from accumulation of fluid and notify your doctor if this occurs.
8. Avoid tight clothing or jewelry on the affected arm and fingers.
9. Avoid unnecessary sun exposure while incision is healing; always wear a sunscreen or keep the area covered while in sun.
10. Always protect the involved arm from injury. If you are cut or burned, put an antiseptic lotion and bandage on the area until it heals.
11. Remind medical personnel to use the opposite arm for injections, blood draws or blood pressure readings.

Appointments:

Physician _____

Date _____

Time _____

Physician _____

Date _____

Time _____

Additional Instructions _____



Lumpectomy/Mastectomy Comparison

If your breast and tumor are within certain size limits, your surgeon may offer you the option of a lumpectomy instead of a mastectomy. **Ask your surgeon if there are any additional variables in your surgical decision that may be added to the list below.**

If you have the option of choosing either a lumpectomy or a mastectomy, the decision can be very difficult. It needs to be a decision you make in consultation with your physicians. Remember, the option to choose is not available for some types of cancer but is available to a woman who has a tumor within certain size limits in comparison to the size of her breast. Your surgeon will share with you what sizes fit the perimeters for this decision. **It is imperative that you feel comfortable with the decision.** Studies document that a lumpectomy, even if there is local recurrence, **does not negatively affect survival rate in patients** from cancer. The inconvenience is from the possible necessity for a second surgery.

Lumpectomy

Factors That May Disqualify You For A Lumpectomy:

- Pregnancy
- More than one primary tumor in breast
- Mammogram with evidence of scattered microcalcifications
- Location of tumor in breast (may have poor cosmetic results)

- Size of tumor (tumor too large or breast that is too small in relation to size of tumor)
- Prior radiation therapy to breast or chest area
- Collagen vascular disease
- Severe chronic lung disease
- Large, pendulous breast
- Evidence of remaining tumor in ducts surrounding tumor
- Restrictions on travel or transportation to clinic for daily radiation for five to seven weeks

Advantages of Lumpectomy:

- Saves a large portion of the breast, usually the nipple and areola
- You are able to wear your own bras
- Rarely requires reconstruction or the wearing of a prosthesis
- Recovery time from surgery is shorter; usually several weeks
- Slightly shorter hospitalization time; may be performed as outpatient
- May be psychologically easier to accept unless the fear of monitoring the remaining breast tissue monthly through breast self-exam is too frightening

Disadvantages of Lumpectomy:

- Risk of recurrence of cancer in remaining breast tissue
- Several weeks, usually five to seven, of radiation therapy to the remaining breast tissue
- Changes in texture, color, and sensation of feeling to the breast from radiation
- Decrease in size of remaining breast tissues after swelling decreases following radiation treatments
- Monthly breast exam on remaining breast tissue to monitor for recurrence, with exam becoming more difficult because of increased nodularity (lumpiness) from radiation therapy
- Possibility of future second lumpectomy or mastectomy if recurrence in breast

Mastectomy Advantages:

- Removes approximately 95 percent of all the breast gland, includes the nipple and areola, thus reducing local recurrence to the lowest degree
- Reconstruction of breast available using your own body tissue or synthetic implants immediately at the time of surgery or years later

Disadvantages:

- Body image changed because of removal of breast
- Need for prosthesis or reconstruction to restore body image
- Recovery time slightly longer than lumpectomy patients

If you are having problems making your decision, you may wish to speak with a patient who has had the procedure. Ask your healthcare provider if there is someone who will be willing to talk with you. Your local American Cancer Society's **Reach to Recovery** program coordinator can provide you with the name of a volunteer who will be willing to share her experience of having either a lumpectomy or a mastectomy. If you are considering a lumpectomy, you may wish to have a consultation with a radiation oncologist to discuss radiation treatments. Often, this consultation will give you additional insight to make an informed decision.



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Lymphatic System — Understanding It's Role

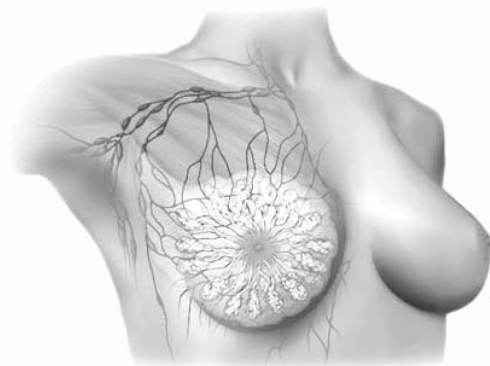
Understanding how the lymphatic system works and how it affects many decisions about treatments is an important part of the discussion of your breast self-exams or surgery for breast cancer.

The lymphatic system serves as the sewage system for cellular waste in the body. The lymph vessels follow closely beside the blood vessels and receive the cells' waste products. This waste is carried by the vessels and filtered through rounded areas of the lymph system, referred to as the lymph nodes. Nodes appear as small round capsules and vary from pinhead to olive-size. Lymphocytes and monocytes are produced in the nodes and act as filters to stop bacteria, cellular waste, and cancer cells to keep them from entering the bloodstream. The lymph nodes may also serve as places where cancer cells set up metastatic sites (cancer that spreads from the original site to nodes, referred to as secondary sites).

During breast self-exam, you will be checking to see if you can feel any enlargement in the size of nodes located in these three levels. An enlarged node may feel like a soft-to-firm June pea. Enlarged nodes need to be brought to the attention of a physician. Nodes can be enlarged from infection, inflammation, and

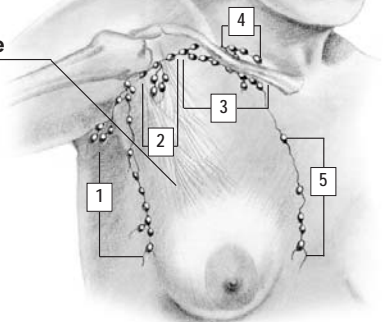
from the effects of cancer in the nodes. Only a physician can determine what has caused an enlarged node.

The majority of lymph fluid drains to the underarm nodes, referred to as the **axillary nodes**. It is estimated that 10 - 15% of the lymphatic fluid leaving the breast drains to the **internal mammary nodes** located in the area of the breast bone. There are several levels of lymph nodes near the breast. The first level is located from the breast to the under arm area; the second level is behind the pectoralis minor (small muscle on chest); and the third level is located higher on the chest, near the collarbone. Other lymph nodes are located above the collarbone and along the breastbone. Your surgeon may remove several of the nodes from the underarm area, referred to as **axillary sampling**; or they may remove all the nodes, referred to as **axillary dissection**. The number of nodes varies from person to person. Your surgeon can tell you which levels of nodes will be evaluated.



Breast lymphatic system

Pectoralis
Minor Muscle



One or all three levels of lymph nodes may be removed.

- 1 - Low axillary, Level I
- 2 - Mid axillary, Level II
- 3 - High axillary, Level III
- 4 - Supraclavicular nodes
- 5 - Internal mammary nodes

Nodes are removed to determine whether cancer has moved from the breast into the node area. The term **negative nodes** means that the lymph nodes did not have any evidence of cancer. **Positive nodes** indicate that the cancer was found in the lymph nodes. The surgeon will tell you how many nodes are removed during your surgery and how many were found to have cancer cells present. Treatment decisions are often based on the number of nodes in which cancer cells are found. Two important factors that determine an oncologist's treatment plan are the **number of positive nodes** and the **size of your tumor**.

Surgery and treatment with chemotherapy, radiation therapy or hormonal therapy can all vary because of the differences in types of cancer, the size of the tumor, potential lymph node involvement or documented metastasis, aggressiveness of the tumor, and hormonal sensitivity. If, during a breast self-exam, you find enlarged nodes in the area of your breast, contact your healthcare provider for evaluation.



Male Gynecomastia — Surgical Correction

Gynecomastia, an increase in male breast size, is most frequently seen in boys ages 13 to 15 years and in older men. The increased size may be due to age-related hormonal changes, medications, and, at rare times, cancer. One breast (unilateral) or both breasts (bilateral) may be increased or larger in size. For more than 90 percent of young boys, the condition will take care of itself spontaneously within a year. Up to 40 percent of adult men may be affected by some degree of gynecomastia because of a reduction of testosterone (male hormone) and an increase in female hormones.

Physician Evaluation

The decision to surgically reduce the size of a boy's or man's breast is determined primarily by the length of time the breast has been enlarged and the presence of pain from the enlargement or swelling. For some older men, cancer may be a cause of the increased breast size if the enlargement is in only one breast. A mammogram and appropriate biopsy, if needed, will determine if it is breast cancer. The physician will also evaluate other possible causes for gynecomastia.

Conditions or Diseases Causing Gynecomastia:

- Hepatitis
- Cirrhosis of the liver
- Lung cancer and pulmonary inflammatory (injured lung tissues) diseases

- Thyroid (gland in the neck) imbalance
- Testosterone (male hormone) imbalance
- Recreational drug use: marijuana and heroin
- Steroids to gain weight or increase muscle mass
- Past or current medications

The physician will first try to eliminate or correct the cause of gynecomastia. If this does not work, your doctor may decide surgery is the best option.

Surgical Procedure:

- Subcutaneous mastectomy (removal of the gland portion of the breast without removing the nipple/areola)
- Procedure often done under general anesthesia in an outpatient setting

Outcome and Patient Expectations following Surgery:

- The patient will have a more "male" breast after surgical correction of gynecomastia
- Pain associated with breast enlargement or swelling will be gone or eliminated
- Postoperative scars may be visible
- Other postoperative outcomes may include skin depression or dent from scarring



Mammoplasty — Breast Reduction

Women who have large breasts may be candidates for plastic surgery to reduce the size of their breasts. Heavy, pendulous (hanging or drooping) breasts cause a variety of physical and psychosocial symptoms.

Large Breast Problems:

- Back and neck muscle strain
- Difficulty breathing
- Headaches
- Shoulder pain
- Pain caused by bra straps cutting grooves into shoulders that may result in numbness
- Chronic, continuous breast pain
- Personal cleanliness; infection under pendulous breast
- Inability to participate in sports
- Problems in self-esteem and sexual relationships
- Difficulty finding one-piece clothing to fit

For some people, breast size may be related to obesity. In those cases, most physicians suggest losing weight as the first step to reducing breast size. For other women, weight reduction may not have any impact on their breast size.

Risk Factors that may disqualify you for breast reduction:

- Obesity (more than 25 percent over ideal body weight)
- Heart disease
- Pulmonary (breathing) disease (e.g., asthma)
- History of blood clots
- Diabetes, especially insulin dependent
- Heavy smoker or history of heavy smoking
- Prior radiation therapy for breast cancer

Breast Reduction Outcomes:

- Breasts are reduced in size, shape and position on chest wall
- Breasts may lose some of their sensitivity to touch
- Inability to breast feed if ducts are removed or cut
- Scars will be left on the breast; there is a potential for these scars to form bulky scars called keloids that may require surgical correction
- Nipple inversion (inward) caused by scarring that may require a second surgery to correct condition

Before having breast reduction surgery, a woman should have a mammogram to evaluate for any changes that could indicate signs of increased risk for breast cancer. She should also have a breast exam by her healthcare provider. A thorough medical or family history will also be needed. If you are overweight, your healthcare provider will advise you to reach ideal weight before surgery.

Your plastic surgeon will review your history and design your surgery based upon factors such as the amount of breast tissue that needs to be removed. The procedure is usually performed in a hospital or as an outpatient under general anesthesia.

Potential Complications:

- Bruising and swelling of breasts
- Infection
- Bleeding
- Hematoma (a swelling or mass of blood caused by a break in a blood vessel)
- Necrosis (death) of tissues due to lack of blood circulation after surgery; may require additional surgery to remove the dead tissues

Recovery:

- Moderate pain will be experienced during the first week
- Should wear surgical bra for several weeks until swelling and bruising lessen
- Stitches removed in one to three weeks
- Some swelling may remain for four to six weeks
- Full recovery usually occurs within six weeks

Follow-up

- Another mammogram is repeated after surgery for patients who had a mammogram before surgery; this provides a new baseline for future breast cancer screenings
- Continue weight-reduction or maintenance regimen to keep size of breast (breasts will increase in size when weight is gained)
- Primary care physician will continue to monitor breasts with clinical breast exams and mammograms



Mastectomy

Mastectomy is a general term used to describe the surgical procedure to remove the breast. There are several types of mastectomy surgeries:

- **Modified Radical Mastectomy** removes the breast tissue, nipple, areola, underarm lymph nodes, and the lining over the chest muscles. This surgery may also be referred to as a **total, conservative, or limited** mastectomy, and is the most frequently performed type of mastectomy.
- **Full or Complete Radical Mastectomy** removes the breast, nipple, areola, all three levels of lymph nodes, small chest muscle, the pectoralis minor, medial pectoral nerve, and the lining over the chest wall muscle.
- **Simple or Prophylactic Mastectomy** removes the breast tissue, nipple, areola, and some of the incidental lymph nodes.

Ask your surgeon which of the mastectomy surgeries you will receive.

There are advantages and disadvantages to mastectomy.

Advantages:

- Mastectomy removes 95 percent of the breast gland and reduces local recurrence of cancer to the lowest possible rate.
- Reconstruction to restore your body image (breast) is available using implants or your own body tissues.

Disadvantages:

- Mastectomy changes body image because of the removal of the breast.
- Prosthesis or reconstruction is needed to restore body image (breast).
- Hospitalization and recovery time are slightly longer than lumpectomy.

If you would like to discuss mastectomy surgery with someone who has experienced it, ask your healthcare provider for the name of a breast cancer patient or call the American Cancer Society and ask to have a volunteer call you. It is very important that you understand the surgical procedure and have your questions answered.

Surgery for mastectomy is performed in a hospital. Prior to your surgery, you will have a pre-admission work-up, which will include a profile of your blood and body chemistry, urinalysis, chest x-ray, electrocardiogram, and any other test your physician may feel is necessary. You will need to bring your insurance card or any special instructions to the hospital. Inform your nurse of any allergies you have and any medications you presently take, including non-prescription, herbal, or vitamins. A list of any other physicians involved in your care, such as a heart specialist, needs to be provided. Your nurse will give you instructions concerning any special preparations before surgery.

Admission for surgery is early the same day. The length of surgery, without immediate reconstruction, is approximately one hour. Recovery time in a post-anesthesia room requires several hours. Immediate breast reconstruction will require a longer period of time. Mastectomy may be done as an outpatient and you are allowed to return home the same day. Hospitalization usually lasts from one to three days.

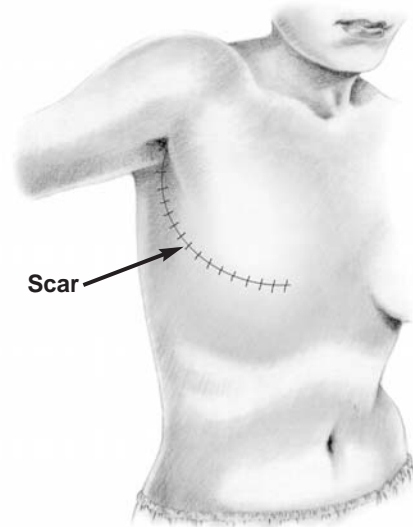
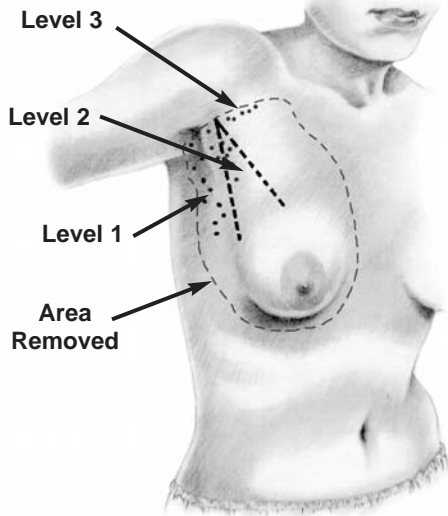
When you awake from surgery, you may have one or several drains coming from your incision area. Pain will be moderate and is often controlled with medication by mouth after you are able to eat and drink. Most women are surprised at the small amount of pain they experience. Your physician will have pain medications ordered for you. As soon as you are awake, you will be able to walk to the bathroom with assistance. It is important that you elevate your surgical arm on a pillow above the level of your heart to prevent swelling. Use your arm to wash your face, comb your hair and feed yourself. However, do not begin any exercises until your physician gives you permission. When your first dressing is changed, it is very important that you look at your incision to learn what is normal so you can later evaluate changes that occur. Your physician or nurse will provide instructions for dressing changes and care of your drains.

Drains need to be pinned to the clothing and emptied when they become heavy. Do not allow them to pull on your skin. It is very important to accurately record the amount of drainage emptied because physicians determine when to remove the drains based on the amount of drainage per day.

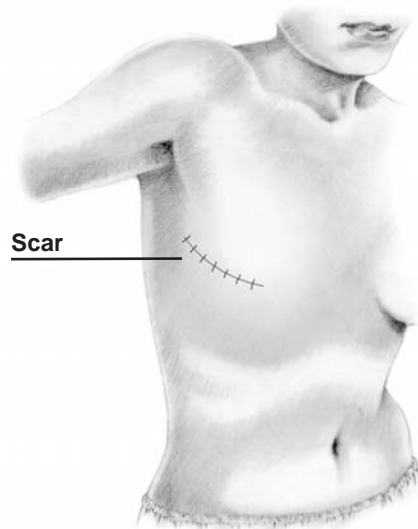
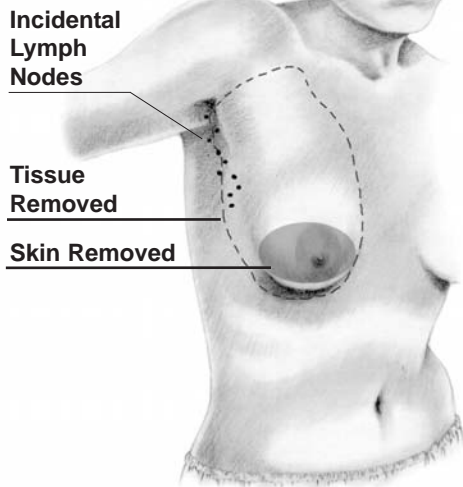
Recovery at home will require several weeks. It is important that you rest when needed. If you experience an increase in pain, run a fever, or notice any signs of infection in your incision area, such as pus or increased swelling, notify your physician. Sutures or staples will be removed in approximately one week. Drains will be removed when the amount of drainage is below a certain level or at a designated time by your surgeon. This time may vary. It is not unusual for some women to have their drains for several weeks.

Reconstruction of the breast is an option some women wish to consider. Talk with your surgeon prior to your surgery. Some women may have immediate reconstruction while others have delayed reconstruction surgery. Ask for written information on reconstruction to better understand the options available for women who have a mastectomy.

For additional information regarding mastectomy, call:



Modified/Full/Complete Mastectomy



Simple or Prophylactic Mastectomy

Surgery does not include axillary node dissection, as in the modified/full/complete mastectomy.



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St. Vincent's HealthCare

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1800 Barrs Street
Jacksonville, Florida 32204

Mastectomy Discharge Information

Surgeon _____

Telephone _____

Date of Return Appointment

Time _____

Special Instructions _____

1. Eat a well-balanced diet and drink a minimum of eight 8-ounce glasses of fluids daily.
2. Rest as needed. Take short walks several times a day to get regular exercise.
3. Take pain medication, if prescribed, as directed. If pain is not relieved, notify healthcare provider.

4. Call your healthcare provider if you:

- Have a temperature over 101° F
- Have chills
- Have a sudden increase of bright red blood in bulb drains
- Cannot keep fluid or food down for more than 24 hours
- Have sudden onset of pain in your arm or surgical site
- Notice your surgical area becoming red, swollen or painful; or if there are signs of pus (thick yellow or a greenish discharge, or if the discharge has a foul smell)

5. Continue to use your arm to eat, bathe, and comb your hair. Do not lift heavy objects (greater than several pounds) until the incision has healed and swelling has subsided. Do not begin any exercise program without the consent of your healthcare provider. Ask your healthcare provider when you can drive your car.

6. Showers are suggested until incision heals, unless your physician gives permission for a tub bath. Keep your dressing on the incision dry.

7. If you return home with drain(s):
 - a. Empty drain(s) twice a day or more often if necessary.
 - b. Open the plug and pour drainage into a measuring cup, record the amount and then dispose of drainage in toilet.
 - c. Squeeze the drain bulb and replug it.
 - d. Pin the drains to your clothing so that they do not tug on your skin.
 - e. Take a record of drainage with you to your next physician visit.
 - f. After the doctor removes the drains, watch for any excessive swelling from accumulation of fluid and notify your doctor if this occurs.
8. Avoid tight clothing or jewelry on the affected arm and fingers.
9. Avoid unnecessary sun exposure while incision is healing; always wear a sun-screen or keep the area covered while in sun.
10. Always protect the involved arm from injury. If you are cut or burned, put an antiseptic lotion and bandage on the area until it heals.
11. Remind medical personnel to use the opposite arm for injections, blood draws or blood pressure readings.

Appointments:

Physician _____

Date _____

Time _____

Physician _____

Date _____

Time _____

Additional Instructions _____



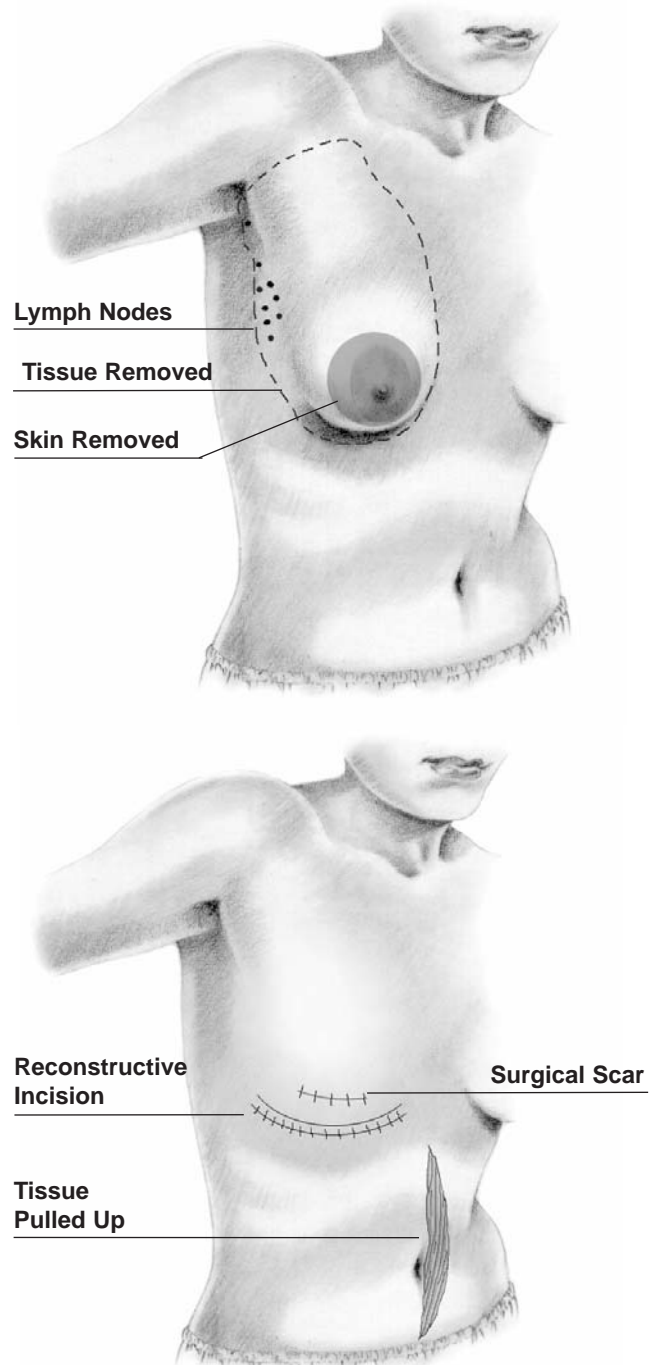
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St. Vincent's HealthCare

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Skin-Sparing Mastectomy

Skin-sparing mastectomy is a new procedure used when performing a simple or total mastectomy. The method removes the breast tissues from a circular incision around the areola (dark colored circle). The nipple, areola, breast tissues, and nodes located near the breast tissues. Additional lymph nodes are removed according to the discretion of the surgeon. The procedure is often selected for in situ disease when reconstructive surgery is performed. The sparing of the skin allows reconstructive surgery to be performed with little need for a period of stretching of the skin. Skin sensation over the reconstructed breast remains intact. The reconstructive incision is made using the normal curve on the breast. This incision is not as visible because it is hidden under the fold of the breast and is concealed by the bra. The incision used to remove the breast is concealed by the reconstruction of a nipple and areola. Body tissues or implants may be used for reconstruction.





Mastopexy — Breast Cosmetic Surgery

Mastopexy is breast cosmetic surgery for sagging breasts (ptosis). As women age, their bodies reduce or stop producing some female hormones. This causes the breast to lose much of its elasticity and firm glandular tissues leaving an excess of the top layer of skin. Previous pregnancies and breast-feeding may have also caused stretching of the breast skin and ligaments. The results for post-menopausal women are sagging breasts.

Breast sagging is a natural condition for women and is of no medical significance. In fact, some cultures in other countries, view sagging of the breasts as a valued mark of maturity and a time for elevated esteem for a woman. In our culture, however, women often view sagging breasts as a loss of their body image. For these women, cosmetic breast surgery can remove the excess skin and restore the breast to a more youthful appearance. The surgical procedure is often referred to as a "face lift" for the breasts and is an option women should investigate if they are unhappy with the appearance of their breasts.

The degree of sagging is determined by comparing the position of the nipple to the natural fold (inframammary fold) under the breasts. This also identifies the type of surgery required. An incision is made around the areola to minimize the scar. Significant degrees of sagging may require more extensive incisions. During surgery, the loose skin is removed and, occasionally, the nipple and areola may need repositioning. Some women choose to have an implant inserted to replace the lost glandular tissue.

A consultation with a reconstructive surgeon will provide you with information about the type of surgery recommended to restore your breasts to their pre-menopausal position. Because the aging process continues, results from surgery may not be permanent. Like a face-lift, breast mastopexy may need to be repeated to maintain the desired appearance.

The surgery is usually performed under general anesthesia and may occasionally require overnight hospitalization. Bulky dressings are applied after surgery. A bra should be worn day and night for several weeks to support the breasts during healing and to reduce pain.

Complications after surgery may be:

- Hematomas (bleeding under the skin)
- Infection
- Delayed healing
- Asymmetry (breasts may not be exactly the same size)

Insurance providers do not usually cover mastopexy because it is considered cosmetic surgery—unessential for good health. However, check with your provider. Ask the reconstructive surgeon to estimate the costs of the procedure. Recovery time is approximately two weeks for the most extensive surgery.

PLEASE
NO
VENIPUNCTURES
OR
BLOOD PRESSURE
CHECKS
LEFT ARM

PLEASE
NO
VENIPUNCTURES
OR
BLOOD PRESSURE
CHECKS
RIGHT ARM



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Reconstructive Criteria

Following a mastectomy for breast cancer treatment, you may be a candidate for immediate or delayed breast reconstruction. Reconstruction may be performed using either implants or your own body tissues. Your physician team, including general surgeon, medical oncologist, and radiation oncologist (if you are to receive radiation therapy), will consult with your plastic surgeon to determine which type(s) of reconstruction would be most appropriate for you. You and your physician team will make the final decision.

Selection Criteria and Risk Factors:

There are some physical factors that must be evaluated to determine whether you meet the conditions for reconstruction. The following factors may or may not disqualify you:

- Cancer cell type and characteristics of your tumor
- Obesity (especially greater than 25 percent more than recommended body weight)
- History of radiation to the chest wall
- Small blood vessel disease caused by heavy smoking or history of smoking, autoimmune disease (such as rheumatoid arthritis or lupus), or insulin-dependent diabetes
- Current pulmonary (breathing) status
- Cardiac (heart) disease and present functioning status
- Substance abuse (alcohol or drugs)
- Patient compliance (ability to understand procedures and options, ability to tolerate pain)

- Abdominal (area between the chest and the pelvis) scarring from previous surgery (may not be able to use your abdominal tissue in breast reconstruction)

Breast reconstruction can restore your body image; however, a reconstructed breast cannot:

- Produce milk to feed a baby
- Respond to hormonal signals from your body or medications
- Experience normal feelings of touch

Procedures

Types of reconstruction:

- Implants
- Saline implants
- Silicone implants
- Your own body muscle or fat to form a new breast mound
- Combination of implant and own body tissue

Timing of reconstruction:

- Immediate reconstruction after mastectomy (both surgeries done at same time)
- Delayed reconstruction (months or years following mastectomy); delayed reconstruction with implants may be performed as an outpatient procedure

Recovery After Surgery

- Reconstruction using your own body tissues usually requires hospitalization from three to five days (with an uncomplicated procedure); stitches are usually removed seven to ten days after surgery
- Reconstruction immediately after mastectomy using implants usually does not require additional hospitalization time
- Full recovery from a mastectomy reconstruction may require up to six weeks

Follow-up

- Your plastic surgeon will schedule follow-up appointments to ensure the success of the breast reconstruction procedure.
- Your primary care physician will continue to monitor your breasts and order your mammograms.



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Reconstructive Surgery

If you lose a breast or a part of your breast to cancer surgery, you have the option to have your body image restored through reconstructive breast surgery. In 1998, a law was passed to require insurance companies to pay for reconstruction after mastectomy and for any needed surgical repair of the opposite breast to provide symmetry. Breast reconstruction has made a great deal of difference to many women, both physically and emotionally. Reconstruction is an option you need to consider. After you review the facts and if you would like to know more about reconstruction, talk to your surgeon before your breast cancer surgery if possible.

Most women are candidates for immediate reconstruction at the time of their cancer surgery. You may want to consult with a reconstructive surgeon prior to your surgery, even if you plan to have the procedure performed after your treatments. Your healthcare provider can provide you with names of physicians that are competent in this field. Many women choose never to have reconstruction while others feel that reconstruction will help bring back their feminine silhouette and eliminate the need for wearing a prosthesis.

A decision to have reconstruction is very personal and requires a lot of research and discussion on your part. Remember, part of gaining control over the cancer is knowing all options that are available to you and availing

yourself of those that meet your needs. Ask your healthcare provider or the American Cancer Society for a booklet on reconstruction.

You may also request a visit from a breast cancer patient working as a volunteer with the American Cancer Society who has had reconstruction. Be aware of the benefits and disadvantages of reconstruction (listed below). Ask your healthcare provider for additions to this list.

Advantages of Reconstruction:

- Body image is restored
- Prosthesis is not required
- Can wear your own bras
- Can go braless
- Can wear low-necked clothing
- No daily reminder of your surgery by having to wear a prosthesis
- Allows most women to adjust more successfully to their diagnosis

Disadvantages of Reconstruction:

- Requires longer surgery or second surgery
- Pain and time of recovery will be greater
- Potential for additional costs; some insurance providers do not cover all of the costs
- Potential for infection or surgical complications

If you decide reconstruction is an option you would like to explore, make an appointment with a reconstructive surgeon and discuss your feelings and desires concerning surgery. The reconstructive surgeon will take the following information into consideration in evaluating which type of surgery would best suit your needs.

- History of illnesses that would make you a poor candidate—your potential for healing, your smoking history
- Type of surgery you will need—lumpectomy, mastectomy
- Type of treatment expected—chemotherapy or radiation therapy
- Your desired reconstructive outcomes
- The size of your breasts
- Desire for increased or decreased size of remaining and reconstructed breast
- Desire for implants or use of your own body tissue

Reconstructive surgery has greatly improved in the past few years. There are several types of procedures available today using implants or different parts of your own body tissue to reconstruct your breast. An area from your abdomen or from your back may be used. The implants may be saline water filled, synthetic materials, or a combination of both. Implants are usually placed under the muscle on your chest. Your reconstructive surgeon will discuss your options and your desires for the type of recommended surgery.

The first decision that you need to make is when to have reconstruction, at the time of your cancer surgery or at a later time. Listed below are the advantages and disadvantages of immediate and delayed reconstruction.

Advantages of immediate reconstruction:

- One surgery, one anesthesia, one recovery period
- Lower cost than two surgeries
- Less recovery time than with two separate surgeries
- Body image change not as great as with mastectomy alone
- Psychologically you may better adapt to the experience

Disadvantages of immediate reconstruction:

- Longer surgery time, more pain, and longer recovery time when emotions are at highest levels of anxiety (use of own body parts require much longer surgery; implants require slightly longer surgery time)
- Potential for infection and surgical complications are greater

Advantages of delayed reconstruction:

- Time to study reconstructive methods carefully and talk to patients who have undergone various procedures
- Time to carefully select reconstructive surgeon and seek several consultations if needed
- Surgery will be performed when you are less anxious over your breast cancer experience
- Will not delay any treatments needed (chemotherapy or radiation therapy) because of a potential infection or complication from surgery
- Studies have shown that some women may be more satisfied with their reconstructed breast after the experience of having to wear a prosthesis and inability to go braless

Disadvantages of delayed reconstruction:

- Need to undergo second surgery
- Higher cost of second major surgery (anesthesia, surgery room, recovery room, hospitalization)
- Prosthesis and special bras required until time of reconstruction
- Inconvenience of having to wear a prosthesis
- Unable to go braless or wear some low-necked clothing
- Psychological distress from having an altered body image after mastectomy
- Consider carefully the advantages and disadvantages of reconstruction and talk with your treatment team and other women about the procedure. Questions you may want to ask your reconstructive surgeon are:
 - What type of reconstruction do you recommend because of my medical history, planned cancer surgery and treatment, and my body size?
 - Am I a candidate for immediate reconstruction?
 - Do you recommend using my own body tissue or an implant?

Implants:

- What kind of implants do you recommend (saline or silicone)?
- Will this implant be placed under or above the muscle?
- Will I have a tissue expander to stretch the muscle before my implant?
- What risks are associated with these implants?

Body parts:

- Which part of my body do you recommend: abdominal muscles (TRAM), back muscle (latissimus dorsi), or body fat (free flap)?
- What are the advantages and disadvantages of these procedures?
- Do you have pictures of patients that you have performed the same procedure on?
- Will I need to have any surgery on the remaining breast to match my reconstructed breast?
- How much feeling will I have in my new breast?
- How long will the surgery take?
- Will you reconstruct a nipple and areola?
- How long will I be hospitalized?
- How many procedures will need to be performed before I am completely finished?
- When can I return to normal activities or work?
- How much will the surgery cost and how much will my insurance cover?

Information about reconstructive surgery can be overwhelming. After reviewing the available options, it is helpful to know that you do not have to decide immediately. Reconstruction can be performed at a later date, even years later. Decide on what you feel best meets your needs.

Questions about reconstructive surgery:



Reconstruction Surgery Types — Defined

Type and Description	Commentary
<p>1. Tissue Expander An empty silicone sack (tissue expander) is implanted under the skin and muscle. It is gradually filled with saline (salt water) solution through a valve over a period of several weeks to stretch the skin before permanent implant is inserted. Second outpatient surgery is required to remove the expander and position the permanent implant and perform nipple and areola reconstruction. General anesthesia is usually used.</p>	<p>Most common type of reconstructive surgery after breast cancer. May be difficult to match larger opposite breast. Good for bilateral reconstruction. Patient usually returns to physician's office every week for injections. Injections may cause slight discomfort for the first twenty-four hours after filling the expander.</p> <p>Outpatient or inpatient. Surgery takes 1 - 2 hours. 2 week estimated recovery time.</p>
<p>2. Implant (fixed volume implant) Sack filled with silicone gel or saline fluid is implanted under skin and chest muscle. General anesthesia is used.</p>	<p>Silicone gel or saline implants can be used. Tissue expanders may be required to stretch the muscle and skin to allow for implant insertion.</p> <p>Outpatient or inpatient surgery: 1 - 2 hours for surgery. 2 week estimated recovery time.</p>
<p>3. Latissimus Dorsi (back flap) The back muscle, the latissimus dorsi, along with an eye-shaped wedge of skin are rotated from the back to the breast and sewn in place, leaving the tissues attached to their original blood supply. Inpatient procedure with general anesthesia: 2 - 3 hours surgical time. Flap may be also be used over an implant to give a more natural result, especially to match a larger opposite breast.</p>	<p>Major surgery. Moderately painful. Scar left on back. Drains may be left in place for several weeks. May or may not require use of an implant in addition to your own tissue. Some procedures can be performed endoscopically (using special instruments under the skin) that leave smaller scar on the back.</p> <p>Hospitalization is from 2 - 3 days. 3 - 4 weeks estimated recovery time.</p>

4. TAP (thoracodorsal artery perforator)

The procedure is an alternative to the latissimus dorsi flap; it does not move the muscle, but uses the fat of the upper and lower areas around the muscle. The blood vessels are removed with the tissue. Because some women do not have a lot of additional fat in this area, it may not be the preferred procedure.

Requires a surgeon proficient in microsurgery. Small to medium size breast (400 - 800 cc). Good for filling in lumpectomy defect or for mastectomy patients with tight skin from radiation therapy. Thin women are not candidates.

Hospitalization 3 days.
3 - 4 weeks estimated recovery time.

5. TRAM Flap (tummy tuck)

The TRAM (transverse rectus abdominis myocutaneous muscle) Flap (tummy tuck). One or both rectus muscles (major stomach muscles) are moved up along with fat and skin of lower abdomen and tacked in place to form a breast. Tissue may remain connected to original blood supply, or will require microsurgery. Inpatient surgery with general anesthesia is usually 3 - 5 hours.

Major surgery and may be painful. Drains in place. Difficulty standing up straight for several days or weeks. Scar on abdomen. No implant required is a major advantage.

Hospitalization is from 3 - 5 days.
4 - 6 weeks estimated recovery time.

6. DIEP Deep Interior Epigastric Perforator

Procedure uses abdominal tissues without the abdominal muscle. The abdominal fat is taken from along with local blood supply and microscopically attached to the breast vessels. Nerves can also be harvested to restore sensation to the tissues.

Requires a surgeon proficient in microsurgery. Extended operative time over TRAM flap. Previous abdominal surgery may disqualify. Cigarette smokers may not be candidates. Less recovery time over TRAM because of muscle not being used.

Hospitalization is from 3 - 5 days.
4 - 6 weeks estimated recovery time.

7. Inferior (lower) Gluteus (Buttock) Flap

This procedure uses a patient's own tissue from fat and muscle in the buttocks. The tissue is detached (cut free) from its blood supply and reattached to the breast area blood supply using microsurgery. This is an inpatient procedure that includes general anesthesia. Surgery can range from three to eight hours according to the degree of microscopic reattachment necessary. The scars on the buttocks are easily covered with underwear. Most women, except extremely thin ones, have tissue to spare.

Moderately painful. Uses patient's own tissue. No implant required. Requires surgeon with expertise in microsurgery. Most complex of all reconstructive procedures.

Hospitalization from 3 - 5 days.
4 - 6 weeks estimated recovery time.

8. S-GAP**(free-superior gluteal artery perforator)**

This is an upgrade of the gluteus flap; it requires **no** muscle to be harvested and only the fatty tissue along with an artery for blood supply are moved to the breast and reattached using microsurgery. The tissue is removed from the upper portion of the buttocks (superior). This area has the potential to remove and transfer nerves to restore sensation to the new breast.

Moderately painful.
Uses patient's own tissue.
No implant required.
Requires surgeon with expertise in microsurgery. Most complex of all reconstructive procedures.

Hospitalization from 3 - 4 days.
4 - 6 weeks estimated recovery time.

9. Free Flap (microsurgery)

Muscles and fat from other body parts such as buttocks or thighs are detached (cut free) from their blood supply and reattached to the breast area blood supply with microsurgery. Surgery can range from 3 to 8 hours according to the degree of reattachment necessary. Inpatient procedure with general anesthesia.

Moderately painful.
Uses patient's own tissue.
No implant required.
Requires surgeon with expertise in microsurgery. Most complex of all reconstructive procedures.

Hospitalization from 3 - 5 days.
4 - 5 weeks estimated recovery time.

10. Nipple Reconstruction

Nipples are reconstructed from existing skin and fat on the breast. The skin is molded to form the shape of the nipple on the breast mound.
Areola reconstruction may also be done. The dark pigmented color is tattooed to match the color of the other areola.

Nipple reconstruction is not major surgery.
Pain is usually minimal.
Soreness may last for several weeks.
Most often done as a second stage procedure following one of the primary reconstructions listed above.
Outpatient procedure.

NOTE:

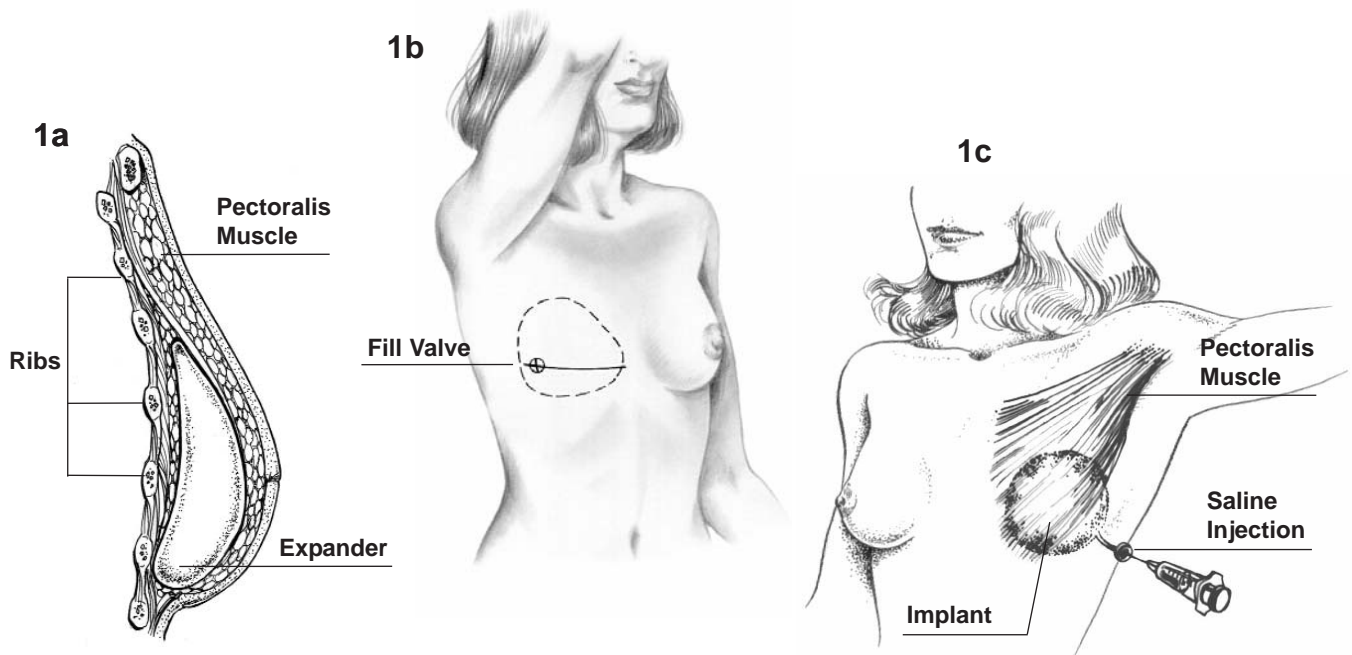
- All types of reconstructive surgery have the potential for infection, as with any other invasive procedure.
- Success with all surgeries involving body parts is dependent on an adequate blood supply to the tissues. Without the blood supply, the tissues will not survive; they will die (necrosis). Complete necrosis requires that the implanted tissues be surgically removed. Smoking is a contraindication for this type of surgery. Smoking decreases blood supply that is critical to the success of the surgery. Women who smoke should understand the risk involved if they continue to smoke.
- Reconstruction will not replace the sensation of feeling lost through mastectomy surgery.
- Surgical repair on the other breast can be done in conjunction with the reconstructive surgery to make the breasts look more alike. This can be achieved by removing some of the sagging of the tissues, reducing the size of the breast or, in some cases, by enlarging the breast. Insurance providers are now required by law to cover the cost.
- Costs range from \$2,500 to \$15,000 for the surgeon's fees and hospital fees from \$3,000 up. Contact your insurance provider for amounts covered. Ask your surgeon and hospital for estimates of costs.
- Radiation therapy to the chest wall may disqualify you for some types of reconstruction.
- Reconstruction can be immediate, at time of breast cancer surgery, or delayed for years.



Reconstruction Surgery Types — Illustrated

Tissue Expander

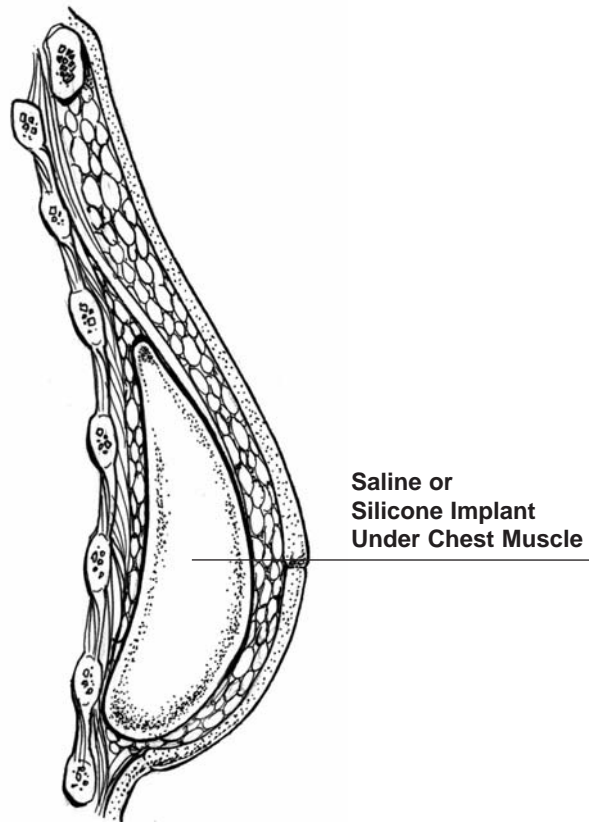
Type and Description	Commentary
<p>1. Tissue Expander An empty silicone sack (tissue expander) is implanted under the skin and muscle (1a - 1b). Over a period of several weeks the expander is gradually filled with saline (salt water) solution through a valve to stretch the skin before permanent implant is inserted. (1c) General anesthesia is usually used. Second outpatient surgery is required to remove the expander and position the permanent implant and perform nipple and areola reconstruction.</p>	<p>Most common type of reconstructive surgery after breast cancer. May be difficult to match larger opposite breast. Good for bilateral reconstruction. Patient usually returns to physician's office every week for injections. Injections may cause slight discomfort for the first twenty-four hours after filling the expander.</p> <p>Outpatient or inpatient. Surgery takes 1 - 2 hours. 2 weeks estimated recovery time.</p>



Implant (fixed volume)

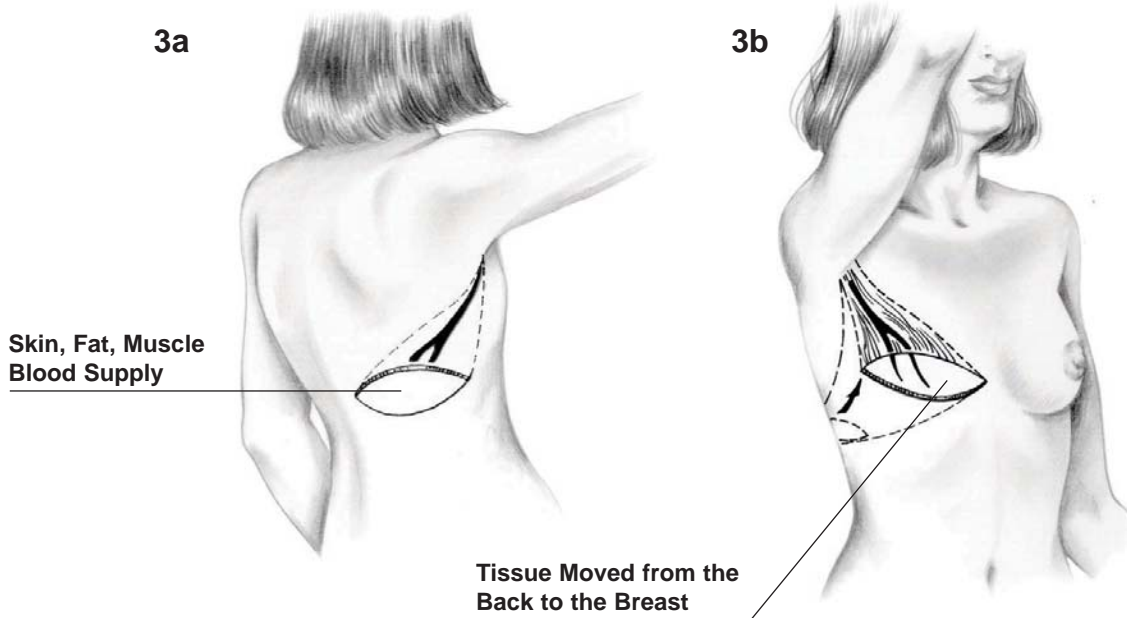
Type and Description	Commentary
<p>2. Implant (fixed volume) Sack filled with silicone gel or saline fluid is implanted under skin and chest muscle (2a). General anesthesia is used.</p>	<p>Silicone gel or saline implants can be used. Tissue expanders may be required to stretch the muscle and skin to allow for implant insertion.</p> <p>Outpatient or inpatient. Surgery takes 1 - 2 hours. 2 weeks estimated recovery time.</p>

2a



Latissimus Dorsi (Back Flap)

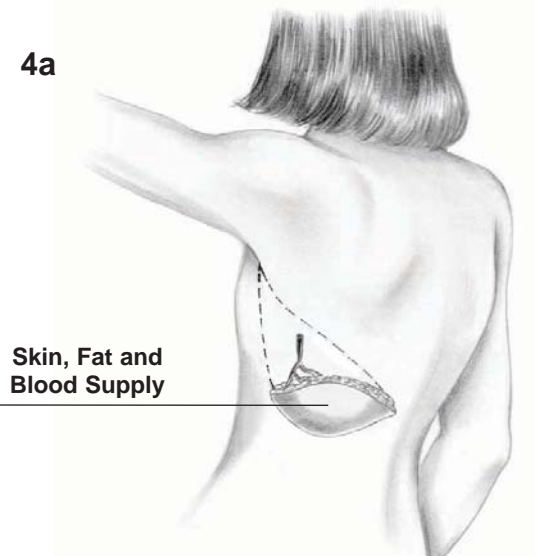
Type and Description	Commentary
<p>3. Latissimus Dorsi (back flap) The back muscle, the latissimus dorsi, along with an eye-shaped wedge of skin are rotated from the back to the breast (3a) and sewn in place, leaving the tissues attached to their original blood supply (3b). Inpatient procedure with general anesthesia. Flap may be also used over an implant to give a more natural result, especially to match a larger opposite breast.</p>	<p>Major surgery. Moderately painful. Scar left on back. Drains may be left in place for several weeks. May or may not require use of an implant in addition to your own tissue. Some procedures can be performed endoscopically (using special instruments under the skin) that leave smaller scar on the back.</p> <p>Surgery takes 2 - 3 hours. Hospitalization 2 - 3 days. 3 - 4 weeks estimated recovery time.</p>



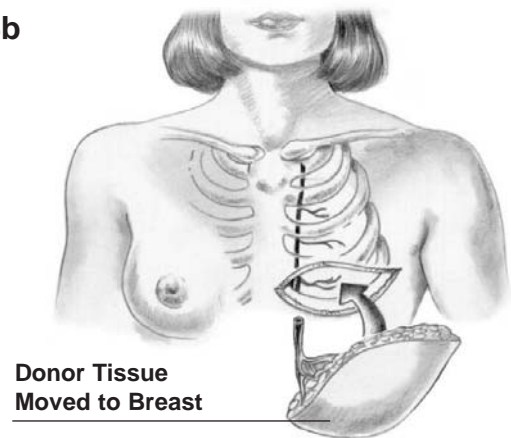
TAP (Thoracodorsal Artery Perforator)

Type and Description	Commentary
<p>4. TAP (Thoracodorsal Artery Perforator) This procedure is an alternative to the latissimus dorsi flap; it does not move the muscle, but uses the fat of the upper and lower areas around the muscle (4a). Because some women do not have a lot of additional fat in this area, it may not be the preferred procedure. Tissue is reattached to vessel in breast area (4b, 4c, 4d).</p>	<p>Major surgery and may be painful. Difficulty standing up straight for several days or weeks. Drains in place. Scar on abdomen. No implant required is major advantage.</p> <p>Surgery takes 3 - 5 hours. Hospitalization 3 - 4 days. 3 - 4 weeks estimated recovery time.</p>

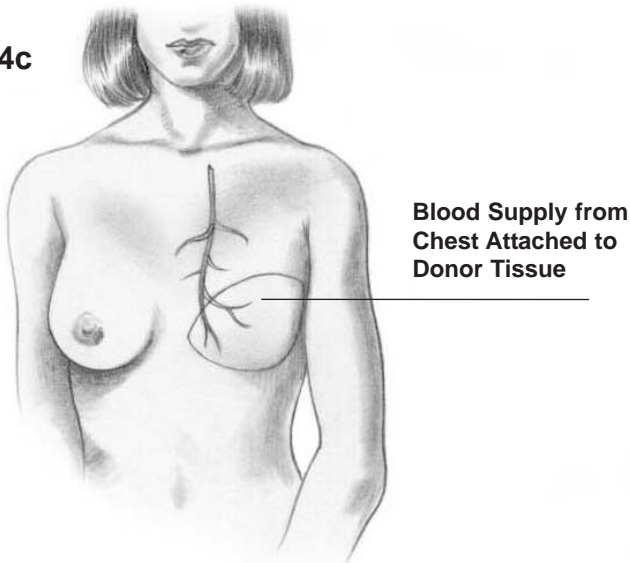
4a



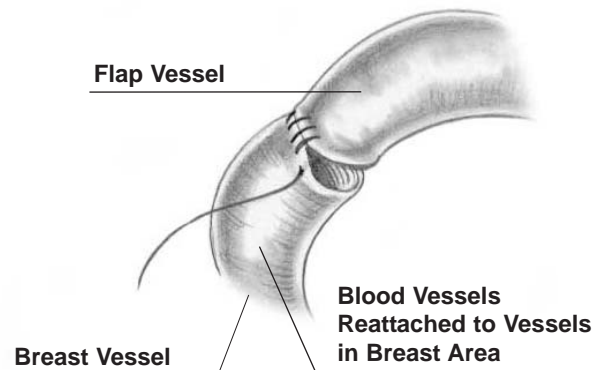
4b



4c



4d

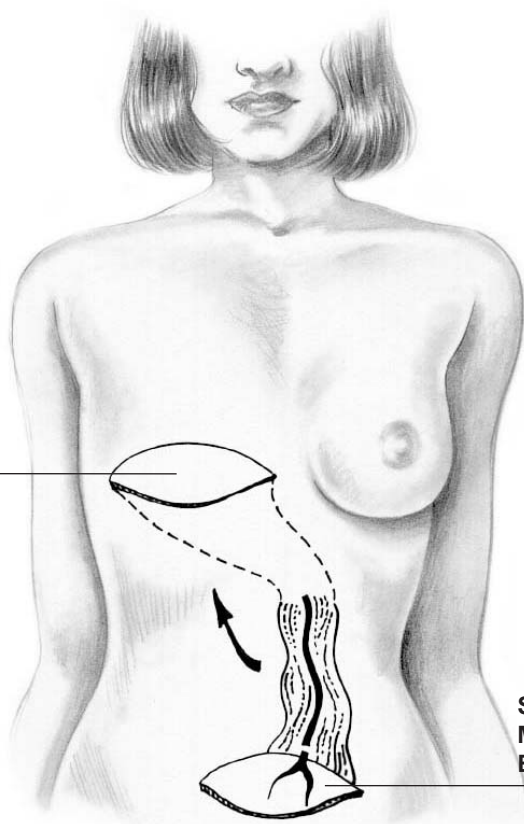


TRAM Flap (Tummy Tuck)

Type and Description	Commentary
<p>5. TRAM Flap (tummy tuck) With the TRAM (transverse rectus abdominis myocutaneous muscle) Flap (tummy tuck), one or both rectus muscles (major stomach muscles) are moved up along with fat and skin of lower abdomen and tacked in place to form a breast (5a). Tissue may remain connected to original blood supply or will require microsurgery. Inpatient surgery with general anesthesia is usually 3 - 5 hours.</p>	<p>Major surgery and may be painful. Drains in place. Difficulty standing up straight for several days or weeks. Scar on abdomen. No implant required is major advantage.</p> <p>Surgery takes 2 - 4 hours. Hospitalization 3 - 4 days. 4 - 6 weeks estimated recovery time.</p>

5a

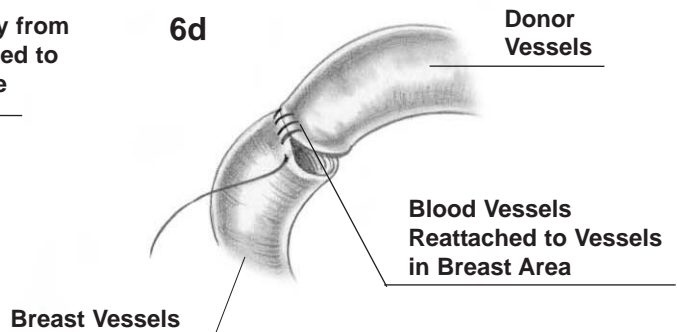
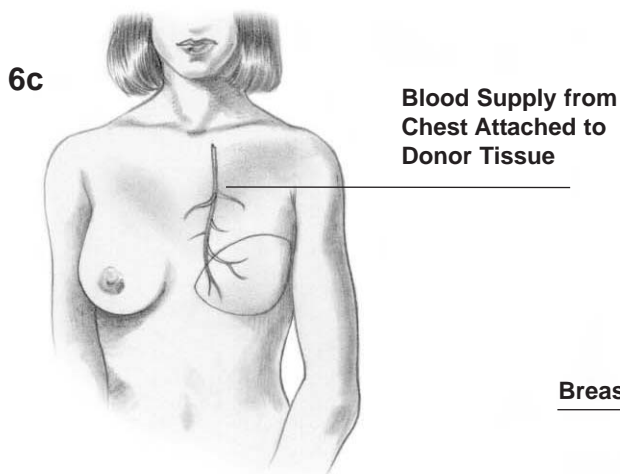
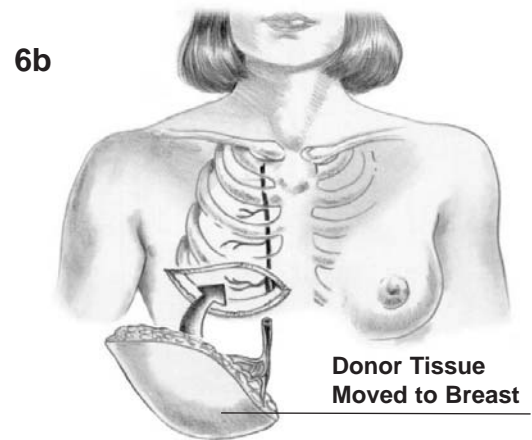
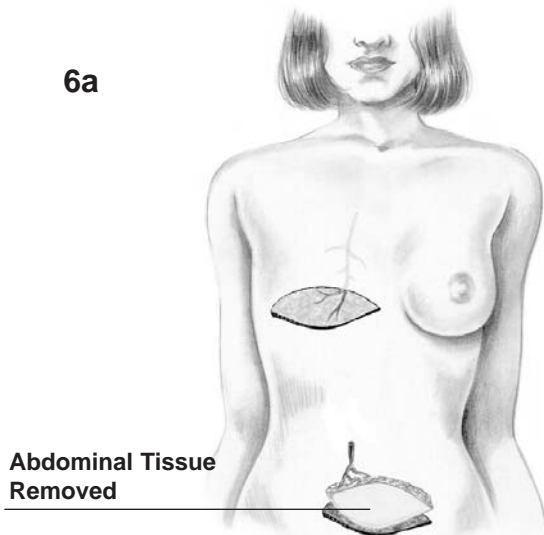
**Abdominal
Tissue Moved to
Breast**



**Skin, Fat,
Muscles,
Blood Supply**

DIEP (Deep Inferior Epigastric Perforator)

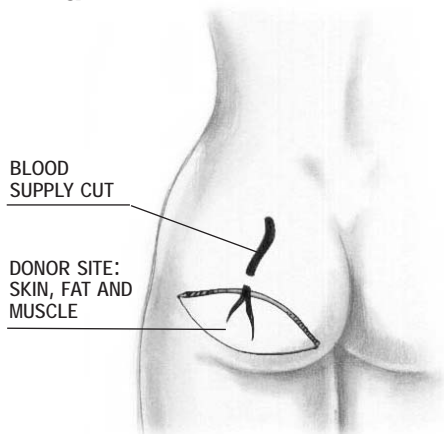
Type and Description	Commentary
<p>6. DIEP (Deep Inferior Epigastric Perforator) Procedure uses abdominal tissues without the abdominal muscle (6a). The abdominal fat is taken from along with local blood supply and microscopically attached to the breast vessels (6b, 6c, 6d). Nerves can also be harvested to restore sensation to the tissues.</p>	<p>Requires a surgeon proficient in microsurgery. Extended operative time over TRAM flap. Previous abdominal surgery may disqualify. Cigarette smokers may not be candidates. Less recovery time over TRAM because of muscle not being used.</p> <p>Surgery takes 3 - 5 hours. Hospitalization 3 - 4 days. 4 - 6 weeks estimated recovery time.</p>



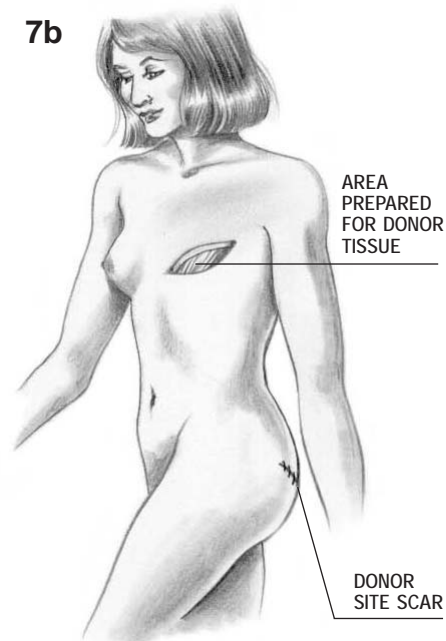
Inferior (lower) Gluteus Buttock Flap

Type and Description	Commentary
<p>7. Inferior (lower) Gluteus (Buttock) Flap This procedure uses a patient's own tissue from fat and muscle in the buttocks (7a). The tissue is detached (cut free) from its blood supply and reattached to the breast area blood supply using microsurgery (7B, 7C, 7D, 7E). This is an inpatient procedure that includes general anesthesia. Surgery can range from three to eight hours according to the degree of microscopic reattachment necessary. The scars on the buttocks are easily covered with underwear. Most women, except extremely thin ones, have tissue to spare.</p>	<p>Moderately painful. Uses patient's own tissue. No implant required. Requires surgeon with expertise in microsurgery. Most complex of all reconstructive procedures.</p> <p>Surgery takes 4 - 6 hours. Hospitalization 3 - 4 days. 4 - 6 weeks estimated recovery time.</p>

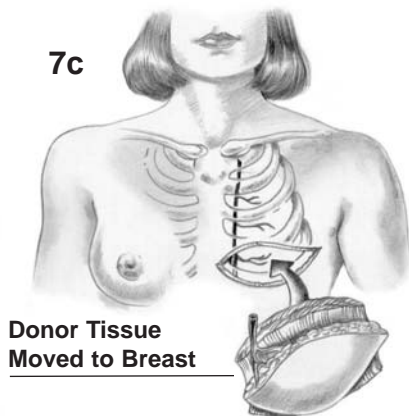
7a



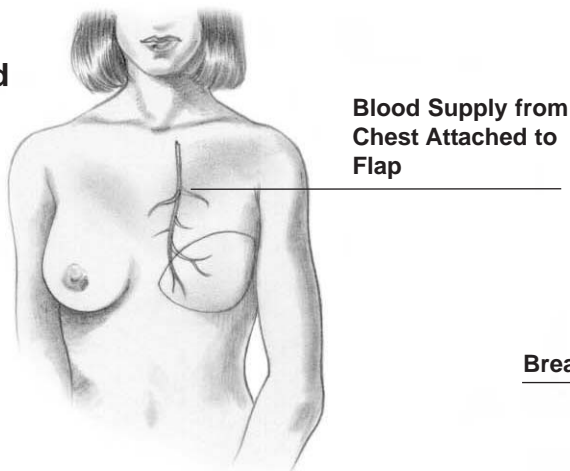
7b



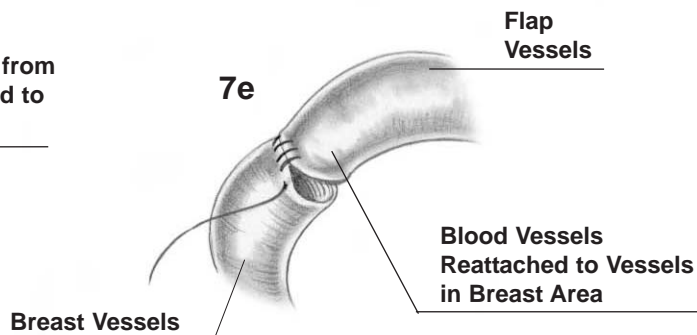
7c



7d



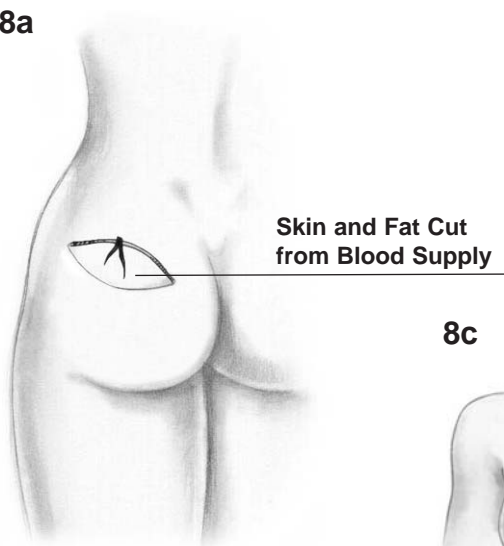
7e



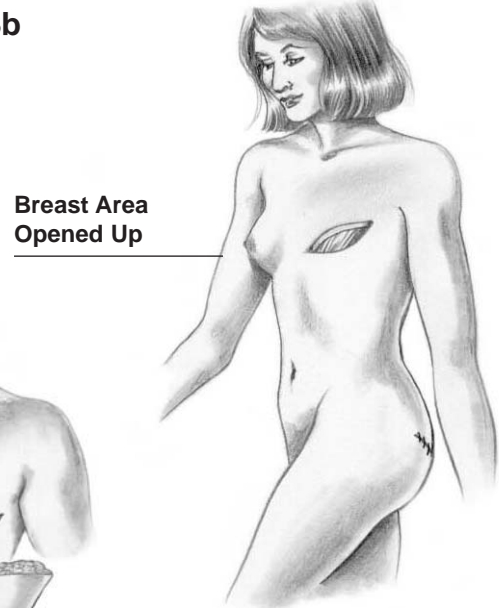
S-GAP

Type and Description	Commentary
<p>8. S-GAP (free-superior gluteal artery perforator) This is an upgrade of the gluteus flap; it requires no muscle to be harvested and only the fatty tissue along with an artery for blood supply (8a, 89b) are moved to the breast and reattached using microsurgery. (8c, 8d, 8e) The tissue is removed from the upper portion of the buttocks (superior). This area has the potential to remove and transfer nerves to restore sensation to the new breast.</p>	<p>Moderately painful. Uses patient's own tissue. No implant required. Requires surgeon with expertise in microsurgery.</p> <p>Surgery takes 4 - 6 hours. Hospitalization 3 - 4 days. 4 - 6 weeks estimated recovery time.</p>

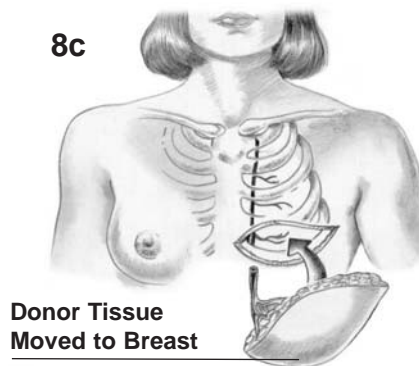
8a



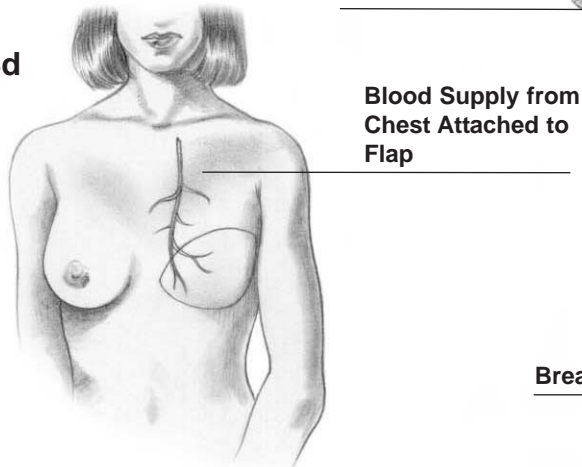
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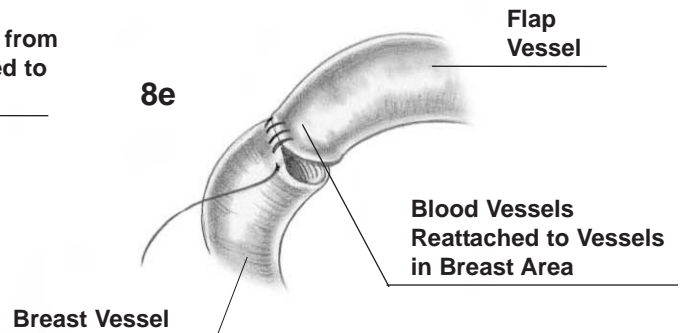
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8d



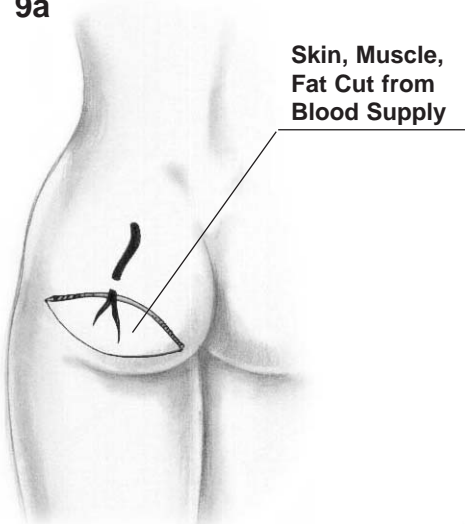
8e



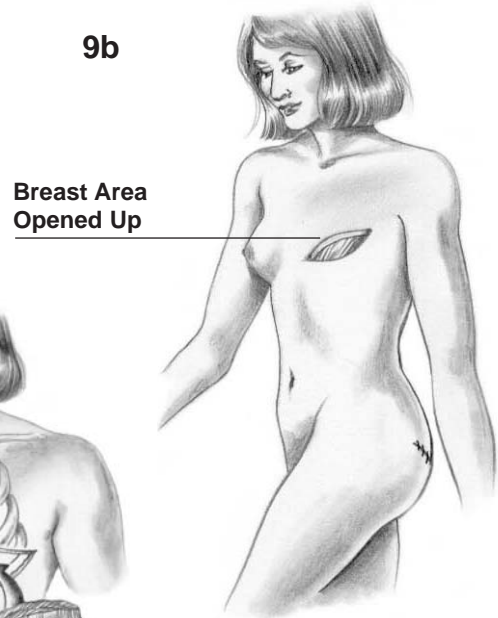
Free Flap

Type and Description	Commentary
<p>9. Free Flap (microsurgery) Muscles and fat from other body parts such as buttocks (9a) or thighs are detached (cut free) from their blood supply and reattached to the breast area (9b, 9c) blood supply with microsurgery (9d, 9e). Surgery can range from 3 - 8 hours according to the degree of reattachment necessary. Inpatient procedure with general anesthesia.</p>	<p>Moderately painful. Uses patient's own tissue. No implant required. Requires surgeon with expertise in microsurgery.</p> <p>Surgery takes 3 - 5 hours. Hospitalization 3 - 4 days. 4 - 6 weeks estimated recovery time.</p>

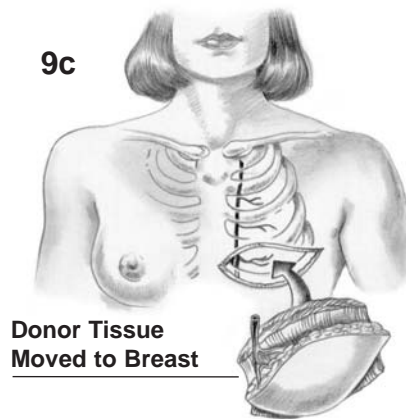
9a



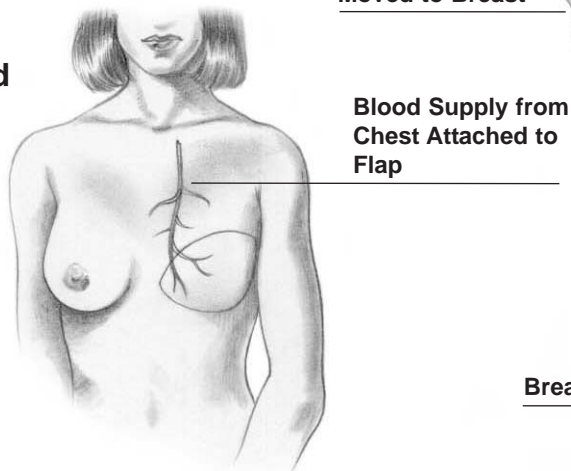
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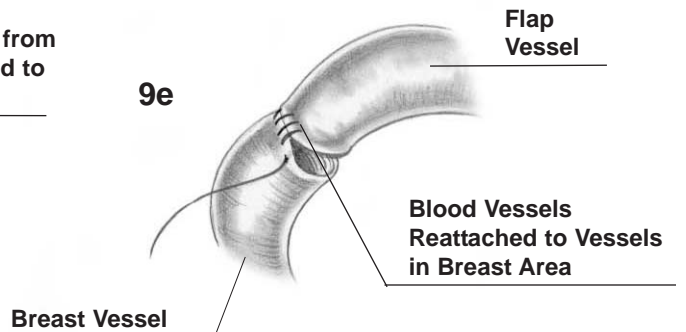
9c



9d



9e



Nipple Reconstruction

Type and Description	Commentary
<p>10. Nipple Reconstruction Nipples are reconstructed from existing skin and fat on the breast. The skin is molded to form the shape of the nipple on the breast mound. Areola reconstruction may also be done. The dark pigmented color is tattooed to match the color of the other areola..</p>	<p>Nipple reconstruction is not major surgery. Pain is usually minimal. Soreness may last for several weeks. Most often done as a second stage procedure following one of the primary reconstructions listed above. Outpatient procedure.</p>

Note:

- All types of reconstructive surgery have the potential for infection, as with any other invasive procedure.
- Success with all surgeries involving body parts is dependent on an adequate blood supply to the tissues. Without the blood supply, the tissues will not survive; they will die (necrosis). Complete necrosis requires that the implanted tissues be surgically removed. Smoking is a contraindication for this type of surgery. Smoking decreases blood supply that is critical to the success of the surgery. Women who smoke should understand the risk involved if they continue to smoke.
- Reconstruction will not replace the sensation of feeling lost through mastectomy surgery.
- Surgical repair on the other breast can be done in conjunction with the reconstructive surgery to make the breasts look more alike. This can be achieved by removing some of the sagging of the tissues, reducing the size of the breast or, in some cases, by enlarging the breast. Insurance providers are now required by law to cover the cost.
- Costs range from \$2,500 to \$15,000 for the surgeon's fees and hospital fees from \$3,000 up. Contact your insurance provider for amounts covered. Ask your surgeon and hospital for estimates of costs.
- Radiation therapy to the chest wall may disqualify you for some types of reconstruction.
- Reconstruction can be immediate, at time of breast cancer surgery, or delayed for years.



Reconstruction — Tissue Expanders and Saline Implants

Restoring body image after breast cancer surgery is an important step toward psychological recovery. One of the most popular methods is the use of tissue expanders and saline implants. This reconstruction procedure is the least painful and will not delay chemotherapy treatment or interfere with any other treatment. The expander can be placed either immediately after a mastectomy or months to years later.

An incision is made into the muscle and a hollow, empty sack is placed behind the pectoralis muscle. The muscle is sewn back together with stitches. The expander has a special valve under the skin that allows the surgeon to gradually fill the sack with small amounts of saline (salt water) every few weeks for about six months or less. These injections allow the expander to gradually stretch the muscle until it reaches the size that most closely matches the other breast. When the muscles and skin have been stretched sufficiently, the expander is surgically removed and a permanent saline implant is placed in the pocket created by the expander. As with any procedure there are advantages and disadvantages.

Advantages:

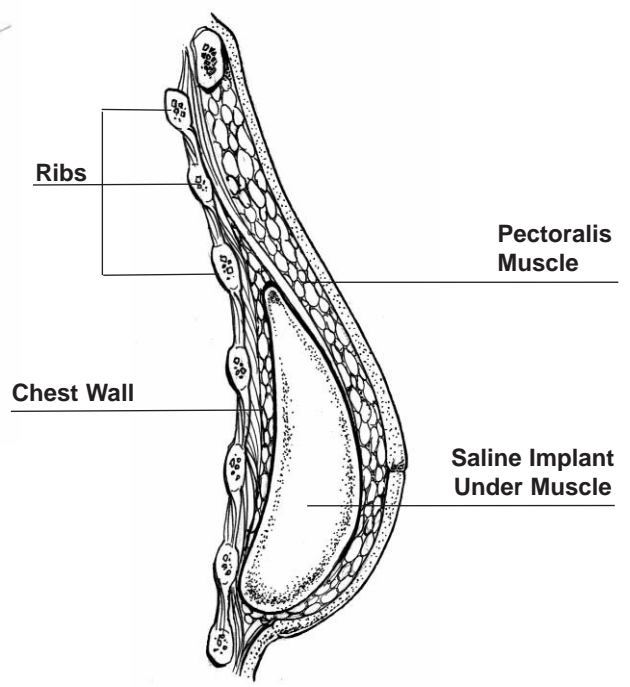
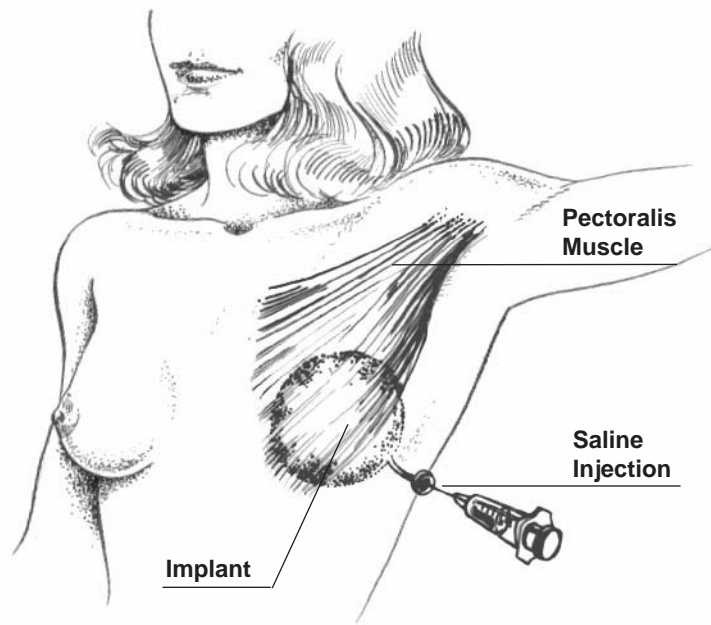
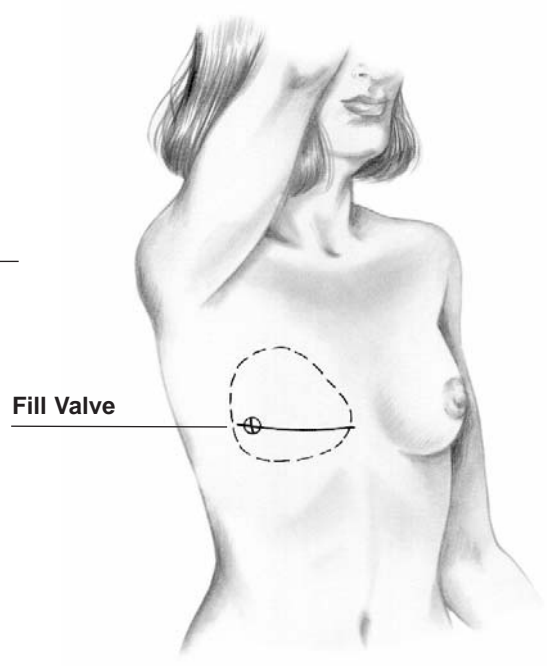
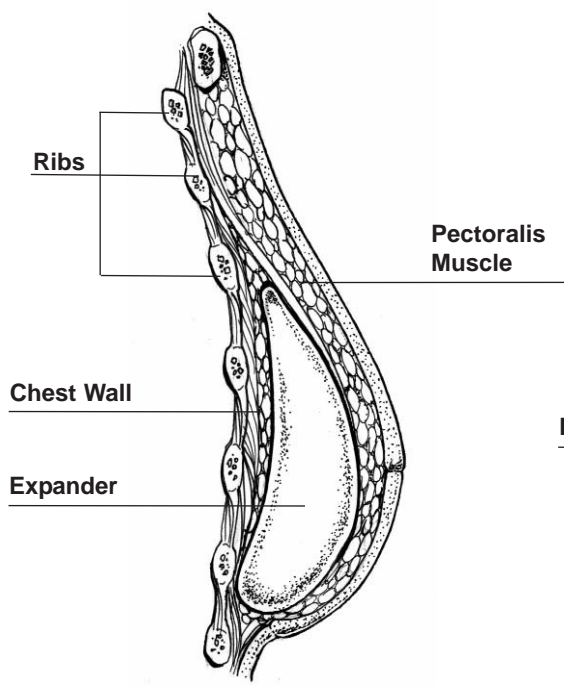
- Restores the body image through reconstruction with the least complicated surgical procedure
- Does not require extra hospitalization

- Will not interfere with treatments
- Because the muscle is gradually stretched, it is less likely to harden around the implant from scar tissue

Disadvantages:

- Frequent trips back to physician requiring needle sticks for injection of fluid to expand the muscle
- Slight discomfort after injection as the fluid stretches the muscle (usually only 24 hours)
- Difference in size of breasts during expansion process
- Potential for fluid to leak from the expander or permanent implant requiring surgical replacement
- Need for second out-patient surgical procedure to remove expander and replace saline implant if it leaks
- May not achieve the same droop (ptosis) as the other breast

Ask your reconstructive surgeon about other advantages and disadvantages of the tissue expander and saline implants. Ask your nurse or call the American Cancer Society and ask to speak to a Reach To Recovery Volunteer who has had the procedure.





ST. VINCENT'S BREAST HEALTH CENTER

St. Vincent's HealthCare

St. Vincent's Breast Health Center
1800 Barrs Street
Jacksonville, Florida 32204

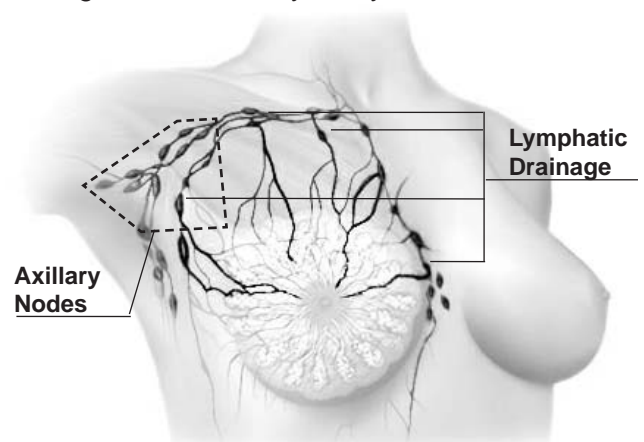
Sentinel Lymph Node Mapping

Sentinel lymph node surgery is a procedure that identifies the first (sentinel) node or nodes that receive lymphatic fluid from a cancerous tumor, thus identifying the dominant lymphatic drainage pattern. Tumors may drain to different node chains in the breast, according to the position of the tumor. (Refer to illustration.) This procedure identifies the nodes most likely to show whether or not the cancer has metastasized from the original tumor. This information is needed by the oncologist to determine the need for chemotherapy. This identification allows the surgeon and the pathologist to have a reliable guide for more accurate node evaluation.

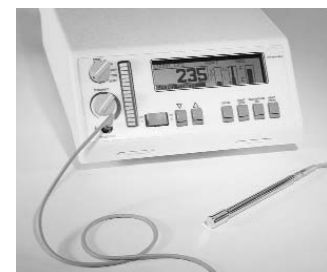
The area surrounding the tumor and/or the areola is injected with a dye and/or radiographic substance several hours before surgery. Before the incision is made on the breast, a hand-held gamma-detection probe identifies for the surgeon the greatest area of radiographic uptake. This guides the surgeon to the lymphatic chain that drains the tumor, allowing removal of the sentinel node(s) stained by the dye or identified by the hand-held probe. This single node (or nodes) is removed and during surgery is sent to pathology for immediate evaluation. The pathologist can often report to the surgeon during surgery. If cancer cells are present, a standard axillary lymph node dissection is most often done at this time requiring a drain and increasing recovery time. If the pathologist does not evaluate the nodes during surgery, additional surgery may be required later if the nodes are positive.

Correctly identifying the sentinel node(s) improves the accuracy of selecting which nodes to remove surgically and evaluate for spread of the cancer. It may also prevent unnecessary removal of nodes, which may not be in the lymphatic drainage field of the tumor. Reducing the number of nodes removed during surgery can reduce the potential for lymphedema, a swelling from lymphatic fluid accumulation in the arm. There is no reported incidence of lymphedema with sentinel node sampling.

Not all patients are candidates for this procedure. Pregnant women, women with known positive nodes, certain size tumors, women with DCIS, or women with more than one tumor in the breast may be ineligible. Your surgeon will inform you if you are a candidate



Neoprobe Scanner





Sentinel Lymph Node Mapping – Why?

Sentinel lymph node (SLN) mapping is a new procedure now performed to determine which lymph node(s) drains first from a cancerous tumor. Identifying the lymphatic node drainage field of the tumor allows the pathologist to closely evaluate the nodes and prevents removal of unneeded nodes.

The lymphatic system follows alongside the vascular (blood) system in every area of the body. The lymphatics pick up cellular waste and filter it through nodes (small, round, pin-point to olive-sized capsules). The lymph nodes in the breast are found in the underarm area (axillary), near the collarbone and near the breastbone. It is estimated that the largest majority of lymph fluid exits the breast into the nodes under the arm, called the axillary nodes. These are the nodes that surgeons traditionally remove for pathologists to examine to determine whether the cancer has spread. There are three levels of nodes in the axillary area. Surgeons may remove all or take a sampling of nodes from one or all three levels. The spread of cancer to the nodes is one of the chief considerations when determining treatment for breast cancer.

Before sentinel lymph node mapping, surgeons usually removed a broad sampling of axillary nodes for pathological evaluation. It is now known that according to where a tumor is in the breast, it may not even drain to the axillary nodes, but to other lymphatic chains found in the internal mammary or interpectoral nodes.

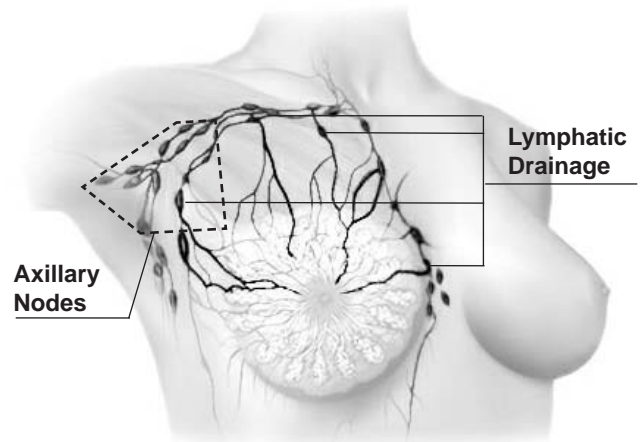
Removal of nodes from under the arm (axillary) increases a woman's risk for lymphedema, a swelling of the surgical arm from accumulated fluid. This complication has troubled and frustrated physicians and brought patients discomfort and pain. Unfortunately evaluating the axillary nodes (usually 15 or more) was considered imperative in order to make appropriate and adequate treatment decisions. Surgeons wondered how many nodes they should remove in order not to compromise a woman's future survival in comparison with her risk for lymphedema and discomfort associated with the second incision.

Sentinel lymph node mapping has given surgeons the answers. The sentinel lymph node is described as the first node(s) in the lymphatic basin that receives primary lymphatic flow from the tumor. A surgeon now has a road map to identify the lymphatic flow route to the correct lymphatic node drainage chain. The identification is made by first injecting the area around the tumor or the areola with a dye and/or radiographic substance several hours before surgery. Before the incision is made, a gamma-detection probe identifies for the surgeon the area of greatest intake or amount of the injected material. This allows the surgeon to remove the nodes in the area that have been stained by the dye identified as the sentinel nodes. This single node (or nodes) is removed and during surgery is sent to pathology for immediate evaluation. The pathologist can often report to the surgeon during surgery.

If cancer cells are present, a standard axillary lymph node dissection is most often done at this time requiring a drain and increasing recovery time. If the pathologist does not evaluate the nodes during surgery, additional surgery may be required later if the nodes are positive.

Correctly identifying the draining nodes can significantly increase the surgeon's accuracy of which nodes to remove and prevent removal of unnecessary nodes that may not be in the drainage field of the tumor or may be negative for cancer.

Ask your physician about the availability of this procedure in your facility.



Neoprobe Scanner





Seroma

A **seroma** is a collection of lymphatic fluid, with some blood cells, under the skin in the area of your surgical incision. This collection of fluid occurs in the space between the skin and the tissue where the surgery was performed. Seromas are the most common complication from breast surgery. They are more annoying than medically dangerous to patients.

A seroma occurs because the small lymphatic vessels were cut. These microscopic vessels spill their secretions into the area, creating a pooling of fluids. This occurs naturally following breast surgery; therefore, drains are usually put into the surgical area during surgery to collect the fluid. However, if small clots clog the drains, fluid will build up creating a seroma. Occasionally, an area in the incision does not seem to drain efficiently, even when the drains are working properly. If drains are removed too early, the fluid will accumulate, forming a seroma.

A seroma will feel much like a balloon filled with water. If you press down on the area, the fluid will move under your fingers. It is usually painless. However, if the fluid accumulates in the area of the incision, pressure on the incision line or a nerve can cause pain.

Treatments for seromas vary according to the amount of fluid or the pain caused by the accumulation. Your physician will evaluate the amount of fluid and your complaints of pain to

determine if aspiration is necessary. Fluid accumulation can increase the risk of infection in the area.

The fluid is removed in the surgeon's office. The procedure is slightly uncomfortable but is not painful. Fluid removal usually relieves any pain involved.

To remove the fluid the physician will:

- Cleanse the area with an antiseptic cleanser to reduce bacteria
- Insert a small needle attached to an empty syringe into the area
- Pull back on the plunger of the syringe to draw the fluid into the syringe
- Cover the aspirated area with a clean bandage

You will need to monitor the area for additional accumulation of fluid and for signs of infection. Report these problems to your healthcare provider. Aspiration of fluid is a simple procedure but, as with any other invasive procedure, it increases the risk of infection.

Seroma formation has **nothing** to do with your cancer, but is related to the amount of lymphatic fluid in the surgical area. When the area heals, these vessels will seal off. Fluid accumulation gradually diminishes, but some women have accumulation for weeks requiring repeated aspirations to remove the fluid.



Surgical Decision Evaluation

Lumpectomy/Mastectomy/Delayed or Immediate Reconstruction

You had your mammogram, possibly an ultrasound, and now your biopsy report is back, and the doctor says it is definitely cancer. Hearing the word "cancer" has probably created one of the most difficult times you have faced. After reviewing all of your reports, the physician tells you that you have surgical options. You can either choose breast conservation (often termed a lumpectomy) or a mastectomy (removal of the breast). The choice is yours, you are told.

Having this choice can be as taxing as hearing the word cancer for some women. Making surgical choices causes some women to feel overwhelmed. What do you do? What are the steps you should take to help relieve your anxieties and assure that you make an informed choice? For some women, the choice is simple; they have no trouble deciding. However, for most, the decision is an emotional roller coaster, creating much mental confusion and distress. They need help in working through the issue.

First, you need to know that it has been proven that survival is equal for both mastectomy and lumpectomy. So, we are not talking about differences in survival, only personal preferences. Both surgical procedures have advantages and disadvantages to be considered. There is potential for local recurrence

with breast conservation, but it is local and will not affect survival. Recurrence will require a second surgery, possibly a mastectomy. Mastectomy also has some disadvantages.

Tips for Making A Decision

- Select someone to accompany you to the physician and help you gather information. This person's role is to be supportive and encouraging, **not** to push you into any directions or decisions. Agree on a word or phrase that lets them know when you need space to think. It is essential that you make the decision that is best for you. This is your life, your future and only you can arrive at the decision that is best for you. This is not a decision you can take back.
- Ask your healthcare provider to explain the advantages and disadvantages of each surgical procedure. Take notes and ask questions.
- Make a list of advantages and disadvantages from your discussion with your healthcare provider. Add others to your list from your own research.
- Discuss the list with your selected support partner.
- Ask to speak with someone, a peer whose situation is similar to yours, who has had a lumpectomy or mastectomy. You can call the American Cancer Society and ask for the Reach To Recovery coordinator or your healthcare provider can supply you with names of women who would be willing to discuss their choice with you.

- Talk with the peer and ask questions. But, remember, this is one woman's experience. You may need to talk to more than one woman. This can often be accomplished by telephone.
- Discuss the findings with your support partner.
- Answer the questions on the Surgical Decision Evaluation to help you uncover your true feelings.
- Now comes the time when you alone must ponder the information and come to a final conclusion. Don't let anyone push you into a decision that you don't feel comfortable making. Women who are pressured are more likely to suffer depression after

surgery because of their continued anxieties over making the right choice. This choice must be one with which your heart agrees. Neither is a choice you want to make. But one is a necessary choice you need to make.

- After you have made a final decision, tell your support partner, "I have decided I want to have (lumpectomy/mastectomy/reconstruction), this is what I feel is best for me at this time. I know you may feel differently, but this is what I need to do. I appreciate your input and support and ask that you honor my decision with your continued support. I need you with me during this time in my life. Your support makes these hard times more bearable."

The following questionnaire can help determine your inclination toward the type of surgery you prefer.

Surgical Decision Evaluation

Answer the following questions to help uncover your true feelings. The statements are in pairs. Read both statements before you answer. Choose one answer between the two statements that best states how you feel at this time. You will choose between an A or a B for each section.

Circle only one letter between the two statements in each box.

A. I would **resent** losing my breast. A B
B. I would **accept** losing my breast.

A. My breasts are **very important** as to how I feel about my self-image. A B
B. My breasts are **not** that important as to how I feel about my self-image.

A. My goal is to **preserve** my body image (breast), if possible. A B
B. My goal is to **reduce** my **chances** of **local** recurrence (in breast) to the lowest level possible.

A. I **don't want** to lose my breast and be required to wear a prosthesis or have reconstructive surgery. A B
B. I would **rather** lose my breast to reduce the chance of recurrence to the lowest level.

A. I would, **without increased anxiety**, perform breast self-exam or go for clinical exams on the lumpectomy breast without increased anxiety. A B
B. I would **worry** about recurrence in the remaining breast tissues after lumpectomy.

A. I'm **not a worrier**; I would see my doctor as needed. A B
B. I **would worry** about the cancer coming back in my remaining breast tissue.

A. I would **agree** to go to radiation therapy five days a week for five to seven weeks to save my breast. A B
B. I would rather **not** have to travel back to the hospital for five weeks for radiation therapy.

A. I **don't mind** going to **radiation** for five to seven weeks to keep my breast. A B
B. I don't have time to keep going back to the hospital. **I want to get this over.**

A. To keep my breast, I could **accept changes** after radiation therapy such as increased lumpiness and a decrease in size. A B
B. I would **be anxious** about monitoring a breast that had lumpy changes after radiation.

A. These changes (lumpiness, change in size) are **minor** compared to not having my breast. A B
B. It would **overwhelm** me to feel my breast after having had cancer in it.

A. I feel that my breast is **important** to my sexuality and self esteem; without a breast I would feel less sexually attractive. A B
B. My partner does **not care** if I have a breast or not; our relationship would not change if I lost my breast.

A. I **do not think** I would ever feel sexy again without my breast. A B
B. I **do think** I could feel sexy again without my breast.

Add the number of A and B's you selected. Total A's _____ Total B's _____

The highest number shows your inclination to prefer this type of surgical procedure.

A= Lumpectomy B= Mastectomy

This is a guide, not the answer, as to your inclination toward surgical options.

If your total for mastectomy had the higher number, or if you simply prefer mastectomy, you now need to consider your options for reconstructive surgery. Continue to choose between the two statements in the same manner.

Reconstruction Decision Evaluation

Choose between the following statements to help uncover your true feelings. The statements are in pairs. Read both statements before you answer. In each box, choose one answer between the two statements that best states how you feel at this time.

Circle only one letter between the two statements/questions.

A. I **would dislike** wearing an external prosthesis (breast form) daily. A B

B. I **would rather** wear an external prosthesis than to have additional surgery. _____

A. I **don't** want to have to put on a **prosthesis**, because it would be a daily reminder of having to lose my breast to cancer. A B

I want my body image to be back to normal as soon as possible.

B. I would **do anything** to **avoid** additional surgery. _____

A. I **do want** to be able to wear low-cut clothing or go braless. A B

B. I **don't** want to wear low-cut clothing or go braless. _____

A. I **don't** want to have to put on a prosthesis to maintain my body image. A B

B. I **would rather** wear a prosthesis than to have more surgery. _____

Add the number of A and B's you selected. Total A's _____ Total B's _____

Your inclination to prefer reconstruction or no reconstruction procedure.

A= Reconstruction B= Prosthesis

Delayed or Immediate Reconstruction

Answer the following questions to help uncover your true feelings. The statements are in pairs. Read both statements before you answer. Choose one answer between the two statements that best states how you feel at this time.

Circle only one letter between the two statements/questions.

A. I would **rather have time to recover** from my mastectomy and treatments before I have reconstructive surgery. A B

B. I would **rather have all of my surgeries** performed at the time of my breast cancer surgery than to have to return after chemotherapy or radiation therapy.

A. **Additional surgery** is **too much** to undergo when my anxiety is so high about my cancer. A B

B. **Let's do it all now** and get it over with; I don't like putting things off that I need to do.

A. I want to **take my time** finding a reconstructive surgeon and studying the different types of reconstructive surgery. A B

B. I **understand** my reconstructive **options** and feel comfortable with the recommended reconstructive surgeon.

A. Reconstructive surgery is too important to **make a fast decision** when I am overwhelmed about my cancer. A B

B. Why should I have to **wait** to have my body image restored?

Add the number of A and B's you selected. Total A's _____ Total B's _____

A = Delayed B = Immediate Reconstruction

Remember, your decisions need to be made according to how **you feel** about the changes your surgical choice would have on you. Each option has advantages and disadvantages to consider. **Survival rates are equal**. Talk to a variety of healthcare professionals (surgeon, medical oncologist, radiation oncologist, plastic surgeon, nurse) and women about the types of surgeries to arrive at your final conclusion.



Vascular Access Catheter Dressing Change

Instructions for changing the dressing to your vascular access device (VAD):

1. Assemble all needed supplies: gauze pads, sterile package of iodine swabsticks, alcohol wipes, scissors, tape, paper bag to dispose of old dressing.
2. Wash your hands carefully for at least thirty seconds with an anti-bacterial soap or iodine soap as recommended by your healthcare provider.
3. Cut tape with scissors.
4. Open the packages of gauze by cutting with scissors. Do not touch the gauze with your hands.
5. Remove old dressing and tape by lifting from the corner. Do not pull on the catheter. Dispose of old dressing in paper bag.
6. Inspect the insertion site for redness, swelling, drainage or pus. Call your healthcare provider if you notice any of these symptoms.
7. Clean the area around the catheter with the iodine swabsticks. Start at the insertion site and rotate the swabsticks toward the edges using a circular motion. Clean about a 2-inch circle around the catheter. Use each stick only once and discard.
8. Place a sterile gauze or a transparent dressing over the catheter site. Use ointment only when prescribed by your doctor.
9. Tape all edges of dressing securely. Loop the catheter and tape securely over the dressing area.
10. Dispose of old dressing.
11. Wash your hands carefully with soap and water for fifteen seconds.

Additional Instructions:



TREATMENTS

TREATMENTS



Autologous Stem Cell Transplant

Autologous stem cell transplant is an aggressive therapy for breast and other cancers. Autologous means from "one's own body." Stem cells are immature blood cells that have not yet entered into the phase of their development that will determine what type of blood cell they will become. During an autologous stem cell transplant, these immature cells are collected from the patient's blood and after large doses of chemotherapy are returned (transplanted) to the patient to ensure bone marrow recovery.

Patient Criteria

Strict criteria must be met by the breast cancer patient prior to being accepted as a candidate. Most facilities require documented metastasis of cancer to the lymph nodes. Diagnostic tests will be administered to determine if the patient meets the criteria including the patient's overall health status. Listed are some basic standards considered by the treatment team:

- Age (18 - 60, may vary in different facilities)
- Lung functions in normal range
- Heart functions in normal range
- Kidney functions in normal range
- HIV negative
- No active infection
- Two weeks past surgery and all surgical wounds healed
- Neutrophil count greater than 1500 m²
- Platelet count greater than 100,000

- Prior dose of Adriamycin not greater than 450mg/m²
- Psychologically adjusted

Patients are reviewed by a multidisciplinary team and are required to sign a consent for treatment.

Step 1: Mobilization Process

Mobilization is the first step in the process of autologous stem cell transplant. A double lumen catheter is inserted. The patient is given chemotherapy medication (Cytosan or VP16), followed by stem cell growth factors (G-CSF) to stimulate the production of stem cells in the blood. When the white blood cell counts begin to rebound from the chemotherapy suppression, the stem cells are collected from the blood. The process of collection is similar to giving blood. Using the catheter, stem cells are removed from the patient's blood (process called leukapheresis or harvesting) and the remainder of the blood is returned to the patient. The process is called "harvesting." The removed stem cells are frozen and stored for later reinfusion.

The harvesting is performed for 4 hours over a period of 3 to 5 days. A daily calculation is performed to determine the number of stem cells collected and the number of days a patient will undergo leukapheresis. If an insufficient number of stem cells are harvested, the patient may have to undergo a second mobilization.

After mobilization, the patient's response is reevaluated through a number of staging procedures, such as CAT scan, bone scan and blood studies to determine their response to chemotherapy. Cardiac and kidney functions are watched closely as well.

During the mobilization process, frequent blood cell studies are performed to determine the need for blood products. Packed red blood cells or platelets are given when the red blood cell levels or platelets fall below acceptable levels.

The mobilization process is usually performed in an outpatient setting. Patients are allowed to remain in their home environment with their families.

Step 2: Dose Intense Chemotherapy Administration

After successful mobilization, the patient is given high-dose chemotherapy over a period of three to five days. After completion of the chemotherapy, the patient is allowed to rest for 72 hours. This treatment is also given in an outpatient setting.

Step 3: Autologous Stem Cell Transplant

At the end of this 72-hour rest period after high-dose chemotherapy, the previously removed and stored stem cells are returned to the patient. The process is very similar to a blood transfusion. The cells infuse back into the patient's body over a period of several hours through a central catheter. During this infusion, the patient is monitored for signs and symptoms of breathing problems or allergic reactions. The most common problem is from the chemical dimethyl sulfoxide (DMSO) used to preserve the frozen stem cells. DMSO can cause the patient to complain of a garlic taste for 24 to 48 hours. The room may even smell like garlic during this time.

Sometimes, patients are admitted to the acute care facility following the reinfusion depending on clinic policy. Vital signs and blood cell values will be monitored very closely as the blood counts fall to their lowest point (nadir). Red blood cells and platelets are transfused when needed to keep blood values in an acceptable range. Any signs or symptoms of infection are treated immediately with an anti-infective (antibiotics, anti-virals, anti-fungals).

Stem Cells Returned To Patient Through Central Catheter



Engraftment:

It usually takes approximately two weeks after transplantation for the stem cells to begin producing new blood cells. This period, called engraftment, is the highest risk period because the body's immune system has been damaged by the previous chemotherapy. Special precautions will be taken to prevent infection and bleeding. Blood samples are taken frequently to monitor blood values. As blood counts begin to increase, restrictions on activities will decrease. The treatment team will be prepared to treat any symptoms or infections that occur.

The Emotional Aspects of Making An Autologous Stem Cell Transplant Decision:

It is difficult to make a decision to have a stem cell transplant. Talk with your healthcare provider and ask questions that concern you and your family. Talking with the physician's nurse is also helpful for many people. Ask to speak to a patient who has experienced a stem cell transplant. A peer can often give insight that will help with your decision. You may also want to visit the treatment center and talk to the treatment team before making a decision. Remember, this is your decision and you need to feel confident that it is the right one.

Autologous stem cell therapy is an aggressive treatment requiring a great deal of physical and mental energy. The decision should be made in consultation with the patient, family, and multidisciplinary team.

Summary:

Autologous stem cell transplant gives patients the best chance to eradicate cancer cells with chemotherapy because the bone marrow reserve of their own stem cells permits the highest doses of chemotherapy.

Some insurance companies do not cover the cost because they may consider the procedure experimental. Check with your insurance provider. It is suggested that stem cell transplant be performed under a clinical trial.



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Bone Marrow Transplant

Bone marrow transplant is a procedure used for cancer patients whose bone marrow needs to be replaced because of cancer in the marrow, such as leukemia, or for patients who need high dose chemotherapy or radiation therapy for solid tumors, such as breast cancer. It is now recommended that if bone marrow for breast cancer is used that it be performed as part of a clinical trial.

What is the bone marrow?

Located inside the bones is a spongy material called bone marrow. The greatest amount of marrow is located in the large bones such as the thigh and pelvic bones. The bone marrow is where the body's blood cells are produced. The marrow produces red blood cells that carry oxygen to all parts of the body, white blood cells that fight infection, and platelets that cause the blood to clot if you are cut. The marrow is necessary for life because without healthy blood cells we have no defense against infection or bleeding.

Often, patients need high doses of chemotherapy to destroy cancer cells in the body. A side effect is that the blood cells in the marrow are also killed along with cancer cells. Since humans can't live without healthy blood cells, these cells need to be replaced to prevent overwhelming infection or life-threatening bleeding. This can be accomplished with a bone marrow transplant. A bone marrow transplant replaces the diseased or destroyed marrow with healthy, non-cancerous cells.

Types of Transplants:

- **Autologous transplant:** Patient's own marrow is removed before high dose chemotherapy and later returned to the body. This is the type most breast cancer patients receive. Their bone marrow is healthy, but is damaged by chemotherapy or radiation therapy.
- **Syngeneic transplant:** An identical twin's marrow is given to the patient.
- **Allogeneic transplant:** Marrow is given by another person whose blood type closely matches the patient's. This type of transplant is for people who have bone marrow that is diseased and does not produce healthy blood cells.

Who is a candidate?

Patients must meet strict criteria. Patients need to be in overall good health. Physicians evaluate the stage of disease, age, general health, previous medical problems, condition of the heart, lungs, liver, kidneys and other major organs. Older patients do not tolerate the complications as well as younger ones. Your physician will discuss the stage of your disease and physical factors that qualify or disqualify you for a transplant. Also in the decision making process is the consideration of how effective a transplant will be compared to other alternative treatments for your disease. Most bone marrow transplants are considered experimental and, therefore, patients are treated under a research protocol. Your physician will discuss the particular advantages and disadvantages with you if you are a candidate.

Deciding to have a transplant.

The decision to have a bone marrow transplant is often difficult. The procedure is physically and emotionally demanding. Most transplants require some period of hospitalization. Patients are usually unable to work or go to school for six months and full recovery may take up to a year. Physical complications vary from mild discomfort to life-threatening problems that may require hospitalization.

The transplant is performed in a medical center setting. The medical center may not be close and require you to travel to and live near the center for several months for close monitoring during the treatment phase. For some patients, it is hard to be away from home, family and friends.

What Does A Bone Marrow Transplant Cost?

Currently, a bone marrow transplant costs between \$75,000 and \$150,000. In addition, living expenses, travel and outpatient professional fees will need to be added to the cost.

Not all insurance policies will cover the transplant. Your insurance provider will need to be contacted and the details provided to determine if the cost of treatment will be covered. Usually transplant medical centers are very helpful with determining what your insurance will cover.

Questions To Ask Your Physician About A Bone Marrow Transplant:

- How will a bone marrow transplant benefit me?
- What other alternative treatments are available to me?
- What are the advantages of a transplant?
- What are the disadvantages?
- Which medical center do you recommend for my treatment?
- How experienced is this center in bone marrow transplant?

- How long will I be in treatment?
- How long will I be out of work/school?
- How long will recovery take?
- What are the long-term side effects?

Preparing for a Bone Marrow Transplant:

- After being accepted as a candidate, extensive testing of your heart, lungs, liver and other organs is necessary to ensure good general health and provide a baseline for measuring your progress.
- All dental work should be done before the treatment process begins.
- Sterility can be a problem after a transplant and this should be discussed with your physician. Egg or sperm banking should be discussed if you desire to have children in the future.
- Hair loss will occur. Before the procedure select wig, scarves or caps.
- Select books and hobby materials for days of isolation.

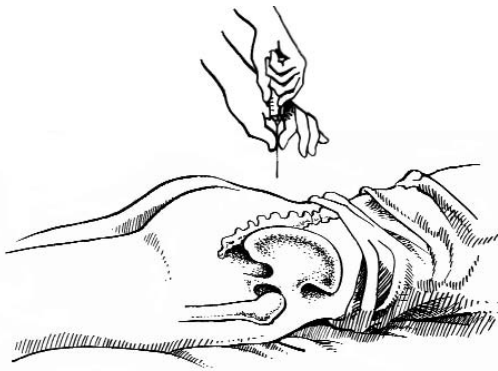
The Bone Marrow Procedures:

Central Line Catheter:

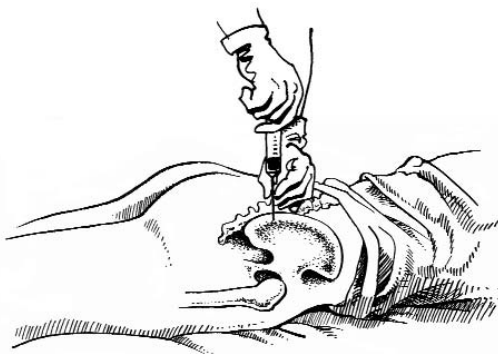
Before beginning chemotherapy, you will have a central-line catheter placed on the upper chest. The types of central lines are called a Hickman catheter, Groshong or PICC line. This central-line catheter will be used to administer your chemotherapy and blood products into a large vein. This prevents the continual sticking with a needle during treatment

Bone Marrow Harvest:

Bone marrow is removed from the large bones of the hips (from you if you are getting your own marrow) in an operating room and stored for later return to you after chemotherapy. If a donor is used for the marrow collection, the cells are given to the patient after the removal from the body. A quart or more of marrow is drawn using large needles. This process is called "harvesting."



Needle With Syringe Inserted Into Hip



Marrow Aspirated Into Syringe

Radiation Therapy:

For patients who have disease in their bone marrow or leukemics, total body radiation therapy will be needed. The purpose of this treatment is to destroy the diseased bone marrow with radiation so that the new, disease-free marrow can be given. This usually involves 9 to 10 treatments over 4 to 5 days. The treatments are painless but will cause hair loss and may cause nausea and some skin irritation. Most breast cancer patients do not require this type of treatment.

Chemotherapy:

Chemotherapy drugs will be given to kill cancer cells in your body. Ask your physician about the type of drugs and length of time they will be given. During this time your

healthcare team will monitor your progress by drawing samples of your blood from the central line to check your blood values. Because chemotherapy kills fast-growing cells, cells in your mouth, throat, skin, hair and digestive tract will also be affected. Diarrhea, vomiting, skin changes, hair loss, and fatigue are all signs that the chemotherapy is killing cells in your body.

Transplant Day:

On the day you are to receive the bone marrow transplant, the stored marrow will be given through your central line, just like a blood transfusion. The procedure takes several hours. Most patients do not feel anything during this time. However, occasionally an allergic reaction may cause a rapid heartbeat, chills, and hives. Medications are available if this should occur.



Bone Marrow Infused Through Central Line Catheter Over Several Hours

Engraftment:

It usually takes from two to 15 weeks after transplantation for the marrow to begin producing new blood cells. This period is called engraftment. This is the highest risk period because the body's immune system has been damaged by the previous chemotherapy. Special precautions will be taken to prevent infection and bleeding. Blood samples are taken frequently to monitor your blood values.

Bone marrow aspirations may be done to check the progress. As your blood counts begin to increase, the restrictions on your activities will decrease. The treatment team will be prepared to treat any symptoms or infections that occur.

Treatment Conclusion:

When your blood counts have risen sufficiently, you will be allowed to return to your home. If you are high risk or live far away, you may have to stay near the center for a few months. During the first few months, you will regularly visit your healthcare provider to monitor for and manage any complications. Your treatment team will give you detailed instructions on activities and self-care. Your contact with the public will be limited to prevent infections. Patients are encouraged to rest and monitor their diets for maximum nutrition to promote healing.

The Emotional Aspects of Making a Bone Marrow Transplant Decision:

Making a decision to have a bone marrow transplant is difficult. Talk with your physician and ask questions that concern you and your family. Talking with the physician's nurse is also helpful for many people. Ask to speak to a patient who has experienced a bone marrow transplant. A peer can often give you insight that will help with your decision. You may also want to visit the treatment center and talk to the treatment team before deciding. Remember, this is your decision and you need to feel confident that it is the right decision for you.



Breast Brachytherapy — Types

Breast brachytherapy (internal breast radiation) is a new treatment in the development phase for radiation for breast cancer. Traditional radiation therapy is now given from a machine that focuses the external ray onto the breast as a woman lies on a table. Instead of this type of radiation, radioactive substances are placed directly into the breast next to the cancer, or in the area that the cancer was removed. Several methods are being evaluated.

One method of brachytherapy is performed by inserting 15 - 20 small plastic catheters (tubes) into the breast tissue around the tumor to guide the radioactive materials to the correct area of the breast. Nine or more times during the next week, the catheters are connected to a brachytherapy machine that delivers high-dose internal radiation. The treatments last approximately ten minutes and are painless. The radiation oncologist removes the tubes at the end of treatment. The tubes are usually in place for a week.

Another type of brachytherapy under study is the insertion of a balloon type catheter into the cavity where the tumor is removed during lumpectomy. A radioactive seed is placed into the site and left for several days before the catheter and radioactive seed are removed. One experiment with internal radiation inserts a tiny coil into the biopsy cavity that is shielded in lead to prevent damage to the heart and lungs and the radiation is delivered for 25

minutes. The coil is then removed. The entire treatment was performed at the time of surgery.

Brachytherapy is new and still in clinical trials for radiation therapy to the breast. However, similar methods have been used for years in other area of the body such as the mouth, prostate and cervix. The procedure is being evaluated to determine if it is as effective in destroying breast cancers as external radiation.

Advantages of brachytherapy:

- Shorter treatment time (from five to seven weeks down to one week, day or during surgery)
- Does not delay chemotherapy for as long if radiation is given first
- Irritation to healthy breast tissues is less than with external radiation (redness and rashes)

Disadvantages:

- Because the catheters cause a break in skin, potential for infection is greater

These types of treatment with internal radiation are all in the study phase and are offered in clinical trials.



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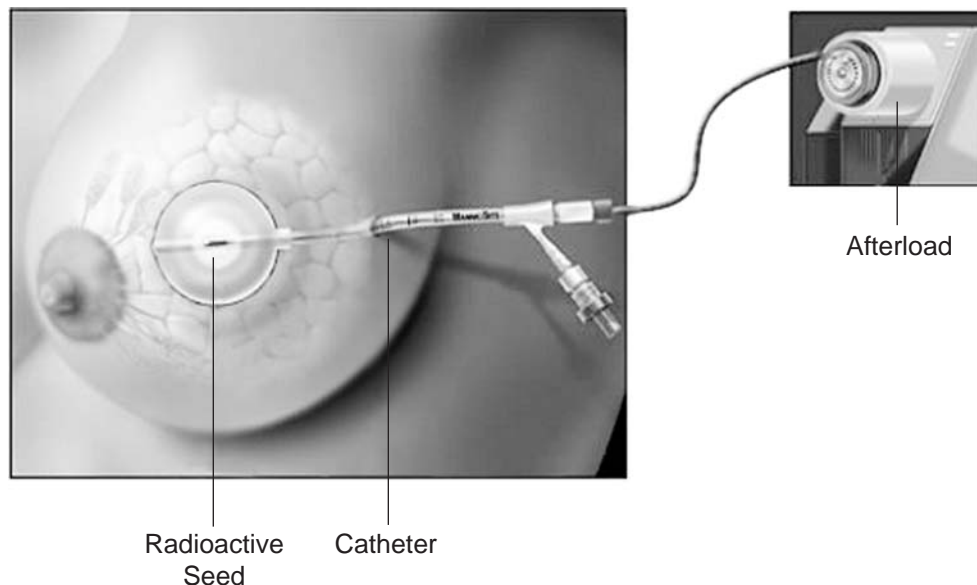
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Breast Brachytherapy — Mammosite®

Radiation therapy after a lumpectomy can now be delivered using a newer partial-breast method that requires fewer days for treatment. Traditional external beam radiation therapy requires from five to seven weeks for treatment. MammoSite® is a new minimally invasive method of delivering internal radiation. This newer method of breast radiation reduces treatment time to five days with ten treatments and is given on an outpatient basis. Delivered through a special balloon inserted during surgery, the procedure uses a special type of radiation seed and equipment.

Surgical Insertion

A MammoSite® deflated balloon is placed in the tumor cavity at the time of your surgery. The balloon has a small catheter (tube) that remains outside of the breast. The balloon is then inflated with salt water to fill the cavity, and a contrast agent (type of dye) is added to help the physician see the balloon more clearly. This fluid remains in the balloon during your entire treatment period. The catheter is plugged, and a bandage is placed over the surgical site before you go home after surgery.



Treatment

During each of the ten treatments, a radioactive “seed” that is attached to a wire, is placed into the balloon for several minutes by a machine called an “afterloader.” The afterloader is a computer-controlled machine that delivers the radiation. The seed is removed at the end of each treatment session. Between treatments or after the final treatment there is no source of radiation in your body. The radiation is directed at the tissues surrounding your removed tumor. These tissues have the highest risk for recurrence.

When the treatments are completed, the balloon is removed, and your breast radiation is complete.

Advantages:

- Radiation is targeted to the area where cancer is most likely to recur.
- Radiation therapy is delivered to the tissues surrounding the removed tumor and not through healthy breast tissues.
- Time for treatment is substantially shortened. Treatment can be completed in five days with ten treatments.

MammoSite® as Additional Therapy

Some physicians are adding MammoSite® therapy to external beam radiation as a boost to the tumor cavity.

Your physician will discuss with you the most appropriate use of MammoSite® therapy if they feel you are a candidate for it.



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Cancer Clinical Trials

Clinical cancer trials are intensive investigational studies that research how cancer progresses, the development of more precise methods of detecting and diagnosing cancer, and the planning of highly effective treatment and prevention strategies. Thousands of research studies are currently under way in the US. Most are conducted by the National Cancer Institute, and many others by major medical centers and/or pharmaceutical companies. Researchers must follow the tenets of the medical practice and provide the current standard of treatment. If determined safe and effective at the completion of the trial, the US Food and Drug Administration (FDA) grants approval for their widespread commercial use by patients.

Clinical trials are part of the long, slow and often expensive process that improves standard treatments. Typically, it takes up to 14 years and \$70 million for a new drug to become established as standard treatment. Before any testing is done with humans, researchers conduct rigorous preliminary experiments in the test tube and on animals to determine which drugs are most likely to affect the cancer and make educated guesses on how to administer them. If the laboratory research is promising and the FDA approves the drug for investigation, scientists begin testing with humans in three phases. Patients who participate in a clinical trial have access to the newest approved therapies for testing on humans, ones that may not be otherwise available to their physicians.

The potential benefit for a patient to volunteer to participate in a clinical trial varies considerably depending upon the stage of the research. Some people choose to enter the trial during the last phase because they want to be among the first to benefit from the new treatment if it proves superior to the current standard of care. Some people volunteer for altruistic reasons, hoping to help solve the mysteries of the disease. Fewer than 3 percent of patients participate in clinical cancer trials. Many experts believe that if more people volunteered, cancer treatment could be improved significantly.

Three Phases of Clinical Trials:

1. Phase I trials are designed to find out if a promising new therapy is worthy of further investigation. In the case of a new drug, researchers learn about its effects by gradually increasing the dosage and analyzing the responses, including side effects. Only a few people are recruited to participate and they usually have advanced cancer with no other treatment possibilities. These medications have been previously tested on animals.

2. Phase II trials confirm the value of the drug and determine the dosage and administration of the drug. Many of the participants have had a relapse or recurrence. Researchers may study the blood for tumor markers and measure the extent or size of the cancer in the body while continuing to monitor for side effects.

3. Phase III is the final phase and requires a large number of patients to receive either the standard therapy or the newer therapy in order to compare beneficial survival results and quality of life during treatment. If one drug is found to be more effective than the standard one, the trial is stopped and all participants are eligible for the more successful treatment. If there is any evidence that the newer drug is inferior or has unusually toxic side effects, the experimental medication is discontinued. Phase III trial participants have a better chance of gaining from treatment than non-participants because they will either receive the best standard treatment known or an experimental therapy with the potential to be even more effective. Once a drug has been through the final stages of testing and is found to be safe and effective, the FDA is likely to approve it for commercial use. However, even when a new drug becomes “standard,” scientists may continue to study it for side effects.

Informed Consent

Your doctor or nurse will explain in detail the type and purpose of the trial. You will be given an informed consent form to read and sign. This form must include the expected benefits, other treatment options, assurance that your personal records will be kept confidential, provisions for compensation or injury, the negative aspects, and a statement indicating that your participation is voluntary and you may withdraw at any time.

This consent form and ultimate decision can sometimes be overwhelming. Ask your healthcare provider to help you fully understand the study before signing the consent form. Signing the form means you understand the potential benefits and risks of the treatment and you want to participate. However, you are not legally bound to complete the

trial. Participating in the trial does not prevent you from getting any additional medical care you may need. If you decide to participate in the trial, you will need to contact your insurance provider to ask if it covers any charges. Be sure the researchers are aware if your plan does not cover the costs of experimental treatments.

By participating in a clinical trial you may have access to newer medications for breast cancer, and you will definitely help determine through your participation which treatment protocol is more effective.

Questions About Clinical Trials

- What phase is the clinical trial you are recommending? (Phase I, II or III)
- Who is sponsoring the study? (Needs to be approved by reputable national group like the National Cancer Institute, a major teaching institution, or FDA.)
- What is the purpose of this study?
- What treatment(s) would you recommend if I decide not to participate in this study?
- If I participate in the study, what advantage might I have compared to standard recommended treatment?
- Will there be additional blood tests, biopsies, or scans that I will be required to have if I enter this clinical trial? If so, do they create any additional risks?
- Does the trial require any hospitalization?
- How will participating in the trial affect my daily life compared to standard treatment? (Can I continue to work and pursue social activities?)
- Will I be able to take my regular medications? (blood pressure, heart, and diabetic)
- Will I have access to pain or nausea medications under this study or will there be restrictions while on the trial?

- Will I be able to participate in any alternative or complementary therapies if I am in the trial? (diets, herbs, vitamins, acupuncture, etc.)
- How long will I be on the clinical trial?
- Where will I receive my treatments and be evaluated while on the trial? (at local cancer center or another site)
- Is the test drug/combination of drugs available outside the clinical trial? (Some drugs may be available to your physician outside the clinical trial.)
- How will the success of the treatment be evaluated? (blood works, scans, etc.)
- How much additional time will participating in the trial require over standard treatment?
- Will there be any extra expenses or will all costs of the trial be covered?
- Will my insurance company cover the cost of the trial?
- If extra costs are involved, where can I find funding? Does your office help me find funding?
- Will you (my personal healthcare team) be involved throughout the trial or will a new treatment team be in charge?
- Who will monitor my overall health while I participate in the trial?
- What type of follow-up will I have when the trial is completed?

How to Find a Clinical Trial

The most obvious place to start is with your oncologist. You can also contact an NCI designated clinical cancer center. The Cancer Information Service (CIS), a program supported by the National Cancer Institute, can provide you with the names and numbers of centers near you (1-800-4-CANCER). When

contacting CIS, request a Physician's Data Query (PDQ) search that will compile information about the latest nationwide cancer treatments for your specific type and stage of cancer. This information is updated monthly.

You can also access the PDQ at www.cancertrials.nci.nih.gov. Patient advocacy groups such as the National Alliance of Breast Cancer Organizations (NABCO) and the American Cancer Society (800-ACS-2345) also have patient information on participating in clinical trials and other relevant information on new trials.

To Participate or Not To Participate

The decision is often not an easy one to make. It is very personal, and one that can only be made after you discuss the advantages and disadvantages with your physician and clinical trials nurse. Ask the questions you have about participating in the trial and carefully think about the answers. When your final decision is made, you need to feel that you have chosen what is best for you. Some women prefer the "tried and known" while others feel that they are getting an even better chance by taking a newer drug or drug combination. Remember, no one has the right answer or an absolute answer for you—that is why it is called a "trial."



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Chemotherapy — Infusion Tips

- **Eat a good breakfast and drink plenty of fluids** the morning of your treatment, unless your physician advises otherwise. Nausea is greater on an empty stomach. Also, fluids will cause your veins to be easier to find if you require an IV stick.
- **Keep your arms and hands well lubricated** with moisturizing lotion several times daily. During treatment your skin will become very dry. Moisturizing your skin will also help the initial needle puncture be less painful by not having to pierce hard, dry skin.
- **Stay as active as possible** before your treatment. Walking or mild exercise enhances your circulation and causes your veins to protrude, making them easier to find for an IV stick or blood drawing. It also reduces stress, increasing your natural endorphins that create an enhanced sense of well-being.
- **Buy a small rubber ball** to take with you to your chemotherapy treatment. Several minutes before the IV stick, squeeze the ball to help your veins plump up. Or you can simply make a fist and then relax it, repeating this for several minutes. If your nurse finds your veins still hard to locate, ask to have a warm damp towel placed over the area for several minutes.
- **Distract yourself** while your nurse inserts the needle, watching doesn't help either of you.
- **Relax** by practicing deep rhythmic breathing while repeating a calming word or visualizing a pleasant scene during the IV stick and infusion.
- Remember, it is very important to **report any burning or pain when the IV medication starts or during the infusion**. Some drugs may cause a temporary discomfort when infusing through small veins; however, many drugs can cause extensive damage if they leak into surrounding tissues. Always report any discomfort to the nurse immediately so that the site may be evaluated.
- **Take books, tapes or other materials** to distract you during the infusion. Limit the activity or movement of your arm while the IV is infusing to prevent dislodging the needle. Also, remember to use the bathroom just prior to your infusion. Maneuvering an IV pole is difficult, and this action could easily dislodge a needle. Ask your nurse for assistance if you find this may present a problem.
- After the infusion has been completed and the needle is removed, **report any pain, discomfort, burning, blistering or redness at the injection site**, even if it recurs later at home.

■ **If the chemotherapy leaks** into the surrounding tissues (extravasation), the nurse will need to treat the site and then your treatment team will closely observe the site. Some chemotherapy drugs are vesicants (cause blisters) and can cause extensive damage if they leak from the vein to the tissues. You will need to be referred to a plastic surgeon for evaluation if there is any blistering at the site.

■ How many IV sticks are enough for a nurse to attempt? Nurses vary in their ability to insert IV needles. Some say that after two tries you should feel comfortable in asking for someone else to attempt the next stick. If repeated sticks to locate a good vein become a constant problem, talk to your physician about an implanted IV port that is placed under your skin.

Questions concerning your chemotherapy:

- What kind of chemotherapy will I receive?
- What are the side effects of the drugs?
- Where will I receive my treatments?
(Physician's office, clinic, hospital)
- How will treatments be administered?
- How long will I receive this treatment?
- How long will each of the treatments take?
- Do I need to bring someone with me to these treatments?
- Do I need to use birth control during treatments?
- Can I conceive and bear a child after treatments?
- Do I continue to take my regular medication or vitamin supplements?
- Can I continue my usual work or exercise schedule during treatments?
- How will you evaluate the effectiveness of the treatment?

Chemotherapy treatments to control the spread of breast cancer have proven very beneficial to many women. Survival from breast cancer is at an all time high. Your healthcare provider will provide you with information on your cancer and treatment. Additional information may be obtained from your local American Cancer Society or the National Cancer Institute by calling 1-800-4CANCER.

Additional information about Chemotherapy:



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Chemotherapy — Neoadjuvant

Neoadjuvant chemotherapy means having chemotherapy treatment before other treatments such as surgery or radiation therapy. Chemotherapy is sometimes administered prior to breast surgery to reduce the size of the tumor, making it easier to remove. This can be very important when a tumor is large compared to the size of the breast and the patient and physician have decided on breast-conserving surgery (lumpectomy) to remove the lump. Neoadjuvant chemotherapy, however, is used most often in treating inflammatory breast cancer or any cancer that appears very aggressive. The treatment plan is to control the tumor first by chemotherapy and then to follow with surgery and radiation treatments.

A great advantage of neoadjuvant chemotherapy is that the oncologist can monitor how well the tumor will shrink or respond to the selected chemotherapy treatment. If the tumor is shrinking or responding as anticipated, the oncologist knows that the drug(s) selected is effective against the tumor. If it proves not to be effective, the oncologist can change the drug to another type early in the treatment cycle and continue to monitor the tumor's response.

If neoadjuvant chemotherapy is a part of your treatment plan, ask your oncologist why this therapy was selected for your breast cancer treatment.

Additional information about Neoadjuvant Chemotherapy:



Chemotherapy — Regional Delivery Devices

Chemotherapy is most often given by intravenous infusion (IV) into a vein and sometimes by pill. However, when the cancer has spread to other parts of the body, chemotherapy may be delivered directly into the area of the tumor, providing a larger than usual dose of the drug without affecting healthy cells. This type of chemotherapy is called regional, as it goes to a certain area of the body. When chemotherapy is taken by IV or pill it is called systemic, meaning it goes all over the body. Regional chemotherapy increases the chances of destroying localized cancer cells while lowering the risk of systemic side effects from treatment. More of the drug can be directed at the tumor and at the same time lower the risks of treatment.

There are several types of regional chemotherapy delivery systems that may be used in metastatic chemotherapy treatments.

Intra-arterial Chemotherapy—chemotherapy is injected into the tumor through the artery (large, major blood vessel) supplying blood to the area. Intra-arterial chemotherapy is done in a hospital or clinic using a special pump that can override the pressure of the blood flow in the artery and allow the drug to travel to the targeted area. Areas that may require treatment using intra-arterial chemotherapy are the head, neck and liver.

Intraperitoneal Chemotherapy—chemotherapy is injected directly into the peritoneum (abdominal and pelvic) cavity. A small catheter is placed in the abdomen and

attached to a special chamber-like device worn on the chest or abdomen. Your health-care provider fills the chamber with the drugs that flow through the catheter into the cavity. This procedure, performed in a hospital or clinic, is used to treat the abdominal cavity when cancer cells invade the lining of the wall and secrete fluid into the abdominal cavity.

Intraventricular and Intrathecal Chemotherapy—chemotherapy is injected directly into the spinal fluid to treat cancer that has metastasized to the brain or spinal fluid. The drugs are either injected directly into the spinal cord or are placed in a small rubber bulb on the scalp called an Ommaya reservoir. A surgeon implants the bulb under the scalp and threads a small catheter into a ventricle of the brain. The chemotherapy drugs are injected into the Ommaya reservoir to deliver them directly to the spinal fluid that continuously flows over the brain.

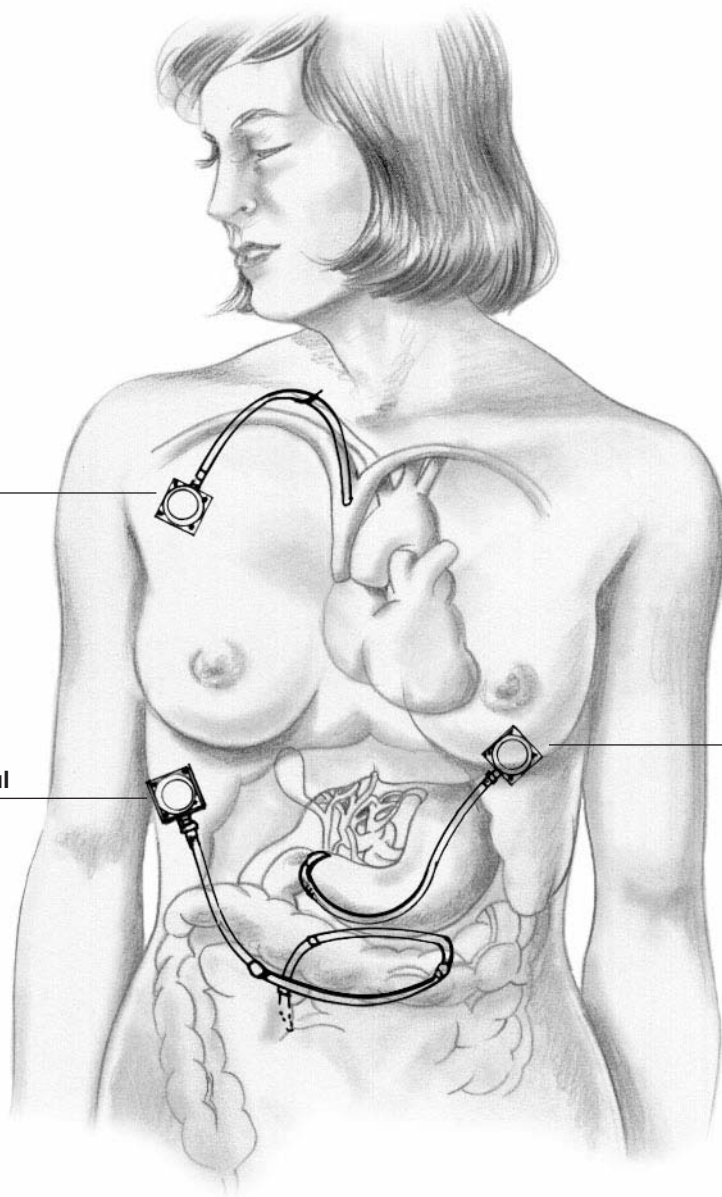
Questions to Ask Physician:

- What type of local treatment will I receive?
- Will I have to have surgery to have the line/reservoir implanted?
- Will I receive my treatments in a hospital or clinic?
- How often will I receive treatment?
- What side effects can I expect from treatment?
- How will you evaluate the effectiveness of treatment?

Intra-Arterial

Intra-Peritoneul

**Intra-Hepatic
Artery**





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Chemotherapy — How It Works

Treatment for breast cancer often involves the use of drugs referred to as chemotherapy. The word chemotherapy comes from two words, “chemo” meaning chemical and “therapy” meaning treatment. A medical oncologist, a physician specializing in the treatment of cancer, prescribes and monitors this treatment.

After carefully reviewing all your medical records and performing a physical exam, your healthcare providers will recommend a treatment plan, often including chemotherapy. This plan, referred to as a treatment protocol, will consist of one or a combination of the following types of treatment:

- Surgery
- Chemotherapy
- Radiation therapy
- Hormonal manipulation
- Stem cell therapy
(now recommended to be performed as part of a clinical trial)
- Bone marrow transplant
(now recommended to be performed as part of a clinical trial)
- Observation only

Treatment protocol decisions are made by your physician(s), decided in consultation with other physicians or through more formal multidisciplinary conferences. Many hospitals or cancer centers conduct multidisciplinary

conferences where physicians specializing in different areas of treatment (oncology, radiology, surgery, pathology, primary care, etc) and other healthcare providers discuss each case and come to an agreement on a treatment protocol. After the most appropriate therapy is selected, the healthcare provider discusses with the patient the reason for the selection and the potential side effects. Regardless of the method used to determine your treatment protocol, it is very important that you understand the plan and have any questions answered. Ask for written information on your disease and the treatment that is deemed appropriate for you.

There are approximately 15 different types of breast cancer and many factors that influence individual treatment decisions. It is imperative that you **do not compare your treatment to another patient's treatment**. Carefully analyze what friends, family and co-workers say and what you read in newspapers, magazines, the internet or hear on television and radio. **Treatment decisions are individually formulated**. Rely on your healthcare providers and treatment team for accurate information based on your cancer and treatment.

A combination of chemotherapeutic drugs may be used to fight your cancer. Each drug, however, is used to kill any cancer cells that may be left in the body after your surgery that could continue to grow and divide. The drugs selected have different side effects and work

in different ways to kill cancer cells. Chemotherapy drugs work by killing rapidly dividing cells, both cancerous and healthy cells. Other rapidly dividing cells in your body that may also be affected include hair cells which may result in varying amounts of hair loss; gastrointestinal cells causing a sore mouth or throat; and blood cells which can produce lower blood counts and fatigue. Most of these cells recover rapidly and the side effects subside quickly. Your treatment team will inform you what side effects to expect from the recommended chemotherapy.

Most chemotherapy drugs used to treat breast cancer are given through an IV (intravenous—needle through a vein), and a few are given orally by mouth. If a patient's veins are hard to locate, or some types of chemotherapy drugs that have a potential to damage the skin are to be given, a permanent device may be implanted by a surgeon. This port, called a "life-port" or "port-a-cath," is placed under the skin, usually on the chest wall.

The frequency of treatment will vary according to the type of drugs selected. Treatments are usually started several weeks after surgery and are administered in the physician's office or cancer center. Some drugs may be administered by wearing a battery-operated infusion pump, about the size of a cell phone, for around-the-clock administration. Your oncologist will explain how your treatment will be delivered.

Many horror stories about chemotherapy treatment have been told and heard. Fortunately, times have greatly changed with the discovery of new medications and the advancement of technology. A medication for nausea has all but eliminated the nausea and vomiting associated with chemotherapy.

Immunotherapy drugs have been developed that boost the immune system and relieve many of the symptoms resulting from low blood counts. Your treatment team will discuss the treatment protocol and plans for managing possible side effects. Every effort is taken to ensure that side effects are kept to a minimum.



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Chemotherapy — Why Do I Need It?

“Why do I need to have chemotherapy after I have had surgery and there is no sign of cancer in my body?” Most patients ask or wonder why they need treatment after surgery when the doctors can find no other cancer present in the body. The purpose of chemotherapy is to rid the body of any **microscopic** remains of cancer after surgery. Tiny cells from the cancer may have invaded your blood or lymphatic system. This invasion means that the blood may have carried cancer cells to other parts of your body and are too small to be seen by any type of test, x-rays, or scans available. These cells can travel throughout your blood and/or lymph system, enter distant organs, and begin to grow. It may take years before this new growth of cancer cells is large enough to be seen by any x-ray or scan. Chemotherapy is recommended to prevent this growth. Chemotherapy enters into the blood system and travels to all of these potential sites.

Chemotherapy after surgery, **adjuvant chemotherapy** (in addition to surgery), can be likened to using a water hose to put out the remaining ashes on a smoldering campfire. You use the water on the fire because there are some wisps of smoke rising from the ashes. You don't know if the fire will rekindle or not. To eliminate the lingering doubt, you spray the ashes with a water hose. The ashes may have never rekindled, but for safety's sake, you take every precaution to prevent future problems. This precaution can prevent a future disaster.

When your doctor recommends chemotherapy after surgery, even though there is no evidence that cancer cells are still growing, your physician is taking precautions to assure that no future problems arise. Your healthcare provider is dousing the ash pile (giving chemotherapy) for safety's sake (to prevent any recurrence).

Hormonal therapy after surgery or chemotherapy can be compared to throwing a wet blanket over the ashes. Just as a wet blanket would keep the smoldering ashes from coming to life, hormonal therapy prevents cancer cells from dividing and growing but it does it in a different way from chemotherapy.

Hormonal therapy works by fooling or tricking the cancer cells while chemotherapy works by killing the cells. Certain hormones in the body cause breast cancer cells to grow. Hormonal therapy drugs, most often tamoxifen, resemble the hormones the cancer cells need in order to grow. The cancer cells, believing the drug is a true growth hormone, allow the hormonal therapy drug to enter its cell sites. The hormonal therapy tricks the cancer into thinking it is the real growth factor when, in reality, it is a fake. Because it is a drug, it stops the growth process from taking place as usual. The hormonal therapy drug prevents the growth of the cancer cell.

This trickery works much like a lock and key. The hormonal therapy may be compared to a key and the cancer cell to a lock. This process is similar to having a key that will fit into a car door lock but the same key, even though it fits into the ignition starter, cannot start the engine. Thus, the car cannot be started even though there is a key in the lock. Tamoxifen and other anti-hormonal therapies fit into the hormonal receptors on cells but do not start or promote cell growth.

Hormonal therapy, like the wet blanket, must be used for a longer period of time than chemotherapy (the water hose) to prevent the rekindling of the ashes. Hormonal therapy is usually given for five years, whereas chemotherapy is usually given over a period of several months.

When your oncologist suggests chemotherapy or hormonal therapy, he/she is taking every effort to prevent recurrence of your cancer.



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Chemosensitivity/Chemoresistance Testing

Determining which chemotherapy treatments to give to a patient is a complex and challenging decision. An oncologist (cancer physician) must base this decision on the individual patient and her unique breast cancer. Breast cancer is not just one type of cancer, but many. There are numerous types based on the tissue structure of the organism, and each type can have varying degrees of how rapidly it will grow.

Traditionally, chemotherapy treatment decisions are based on results from clinical drug trials or studies. Drugs or drug combinations that show the greatest positive patient response rates become recommended therapies. Unlike treating bacterial infections such as a sore throat where cultures and drug sensitivity testing are done to determine which is the best antibiotic for a particular patient and her infection, women with breast cancer are treated by studying the data results from clinical trials that show women's best responses to various drugs.

The same drug treatment does not work for every breast cancer tumor even when the tumor has the same histological (tissue structure) classification. Some tumors may respond very well to the drug while others show little or no response. So, how can the best drug for an individual patient be determined? One approach is called chemosensitivity testing. Chemosensitivity testing is basically the same concept as culture and sensitivity testing for bacterial infections such as sore throats. Cancer cells are tested before beginning treatment to determine which drug will deliver the best cancer-kill response to the tumor.

Chemosensitivity Basic Process:

- A fresh or new sample of the tumor is obtained and sent to the lab (cannot use a previous tumor sample that has been frozen or fixed in pathology)
- The cancer cells are separated from the other cells in the sample of the tumor. The cells are then broken apart into single cells.
- These single cells are exposed to various chemotherapy agents or drugs (either single agents or multiple drugs) for approximately one hour and are washed again.
- Treated cells and one non-treated cell culture are then placed in soft agar with growth media where they are able to proliferate.
- Cells that did not respond to the chemotherapy will begin to grow into a colony of cancer cells.
- To determine sensitivity and resistance, the number of colonies that have grown from the treated cells is compared to the sample of untreated cells. The time needed to determine the results can vary between hours to days according to the particular lab and the specifics of testing procedures. The most appropriate cancer-killing drug or drug combination can then be determined.

Numerous variations of the chemosensitivity process are being performed. However, the end goal is to determine which drug is most effective against a patient's tumor.

Chemosensitivity testing is available in various labs across the country.



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Hormonal Therapy

Hormonal therapy refers to the different types of cancer treatments, including surgery (removal of ovaries) and medication. Examples of hormonal therapy are estrogens, progestins, androgens (male hormones), and steroids. For most breast cancer patients, the goal of hormonal therapy is to deprive cancer cells of the estrogen hormone. Estrogen can encourage the cancer cell's growth by producing growth factors. Without estrogen, the cancer cell's growth may be controlled.

Hormones naturally circulate in the body through the bloodstream and affect certain organs and cells, such as the breast in women and prostate in men. Tumors in these organs often depend on hormones to grow. These hormone dependent breast cancer tumors contain estrogen receptors (ER). When estrogen attaches to these receptors, it can cause the growth of cancer cells. Cancers that have these receptors are known as estrogen receptor positive (ER+). When the action of one hormone is blocked, the growth of the cancer cells is halted. Some patients, however, have tumors that are

estrogen receptor negative (ER-) which means that their cancer grows without stimulation from estrogen. Hormonal therapies are not as effective in patients with estrogen receptor negative (ER-) tumors.

Hormonal therapies have been used for more than 100 years. The first type of hormonal therapy was surgically removing the ovaries in premenopausal women with advanced breast cancer. Surgeons removed the ovaries because they make the largest amount of the female estrogen and other female sex hormones in premenopausal women. Without the ovaries, the amount of estrogen in the body is greatly reduced. The ability of the estrogen positive cancer tumors to grow is decreased.

Hormones or hormone suppressants (anti-hormonal) are added to enhance chemotherapy in some treatment plans for cancers that are influenced by their hormonal environment. Hormonal therapy is used to change the hormonal environment of women who have cancers that are stimulated by estrogen or progesterone.

Hormonal Therapy for Breast Cancer

Class	Action	Drugs
SERMs (Selective Estrogen-Receptor Modulators)	Bind to estrogen receptors in breast cancer cells, starving cancer cells	Tamoxifen (Nolvadex) Evista (Raloxifene) Fareston (Toremifene)
Aromatase Inhibitors	Prevent production of estrogen in adrenal glands	Aromasin (Exemestane) Femara (Letrozole) Arimidex (Anastrozole) Megace (Megestrol)
Other Hormonal Therapies	Treat breast cancers that are dependent on estrogen for survival	Zoladex (Goserelin Acetate) Faslodex (Fulvestrant)

These drugs do not have the same side effects as chemotherapy. In contrast to the appetite and weight loss associated with most cancer treatments, hormonal therapy can boost the appetite and cause weight gain. In this case, you may be advised to reduce calorie intake, to avoid becoming overweight.

Hormonal therapy generally alters sexual functioning in some way. It may directly change the balance of body chemicals necessary to achieve a normal sexual response. Although these hormones are not as sexually damaging as chemotherapy, they can cause some menopausal symptoms, including hot flashes and dry vagina. Because tamoxifen actually acts like a weak form of estrogen on vaginal tissues, in menopausal women it can have the positive benefit of increasing vaginal lubrication.

The hormones themselves can sometimes decrease sexual desire. Women with breast cancer are sometimes treated with androgens (male hormones) when other hormone treatments do not work. Androgen treatments (testosterone) can boost a woman's sexual desire, but in large doses can also deepen her voice, cause acne, and increase facial hair. If a physician prescribes an androgen, the drug dosage will be carefully monitored to prevent these side effects.

Your physician will tell you if you are a candidate for hormonal therapy and which type of treatment. The decision is based on your age and the results of your tumor's hormone receptor study.



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Medical Oncologist and Your Treatment Plan

The medical **oncologist** is an internal medicine physician who specializes in the treatment of cancer. The oncologist evaluates your case to determine if treatment with chemotherapy or hormonal therapy is appropriate.

It is very important that you feel comfortable in your relationship with this physician because of the long period of continued treatment. Your choice of an oncologist should be based on training and experience, ability to treat you effectively, and how well your personalities relate. There will be many questions that you will need to have answered during treatment, and you should feel comfortable discussing your health, as well as your feelings, with your oncologist.

When you go to the oncologist, your medical history, mammography report, biopsy pathology report and any previous lab work will be reviewed carefully. A complete physical exam will be performed and possibly additional testing, such as a bone scan, liver scan or a CAT scan, may be ordered. After all the factors and results are evaluated, you will have a customized program recommended for you. Factors considered in determining treatment are:

- Your general health
- Your medical history
- Your menopausal state

- Cell type of cancer
- Size of tumor
- Lymph node involvement
- Invasive or in situ disease
- Growth rate of tumor
- Degree of change from original breast tissue
- Estrogen and progesterone receptor status
- HER2 status
- Metastasis outside of the breast
- Your desire for treatment

The treatment plan formulated is often referred to as a treatment protocol. This plan will consist of one or more of the following components:

- Chemotherapy, by mouth or into a vein
- Hormonal manipulation; anti-hormonal therapy
- Stem cell therapy
- Bone marrow transplant
- Observation only

Chemotherapy is given by injection into a vein or by mouth.

Hormonal therapy is used to alter the hormonal environment of women who have cancers that are estrogen or progesterone positive. The drug Nolvadex® (tamoxifen citrate), or Evista® (raloxifene). Anti-hormonal drugs, are used widely to prevent the stimulation of estrogen on any remaining cancer cells that may be left in the body. The drugs enter the bloodstream and attach to the receptor sites on cancer cells to prevent their growth. These drugs do not have the same side effects as chemotherapy. Side effects resemble menopausal symptoms such as hot flashes and vaginal dryness, and are usually well tolerated by women. Your physician will tell you if you are a candidate for hormonal therapy.

The small size of some tumors having negative lymph nodes, combined with adequate surgery and menopausal status, may place some women in the category of observation. Their potential for recurrence may be so small that close observation by a physician is the best treatment.

During the consultation with your oncologist, you may wish to ask the following questions:

- What type of treatment is appropriate for my cancer?
- When will my treatments begin and end?
- How will I receive my treatments? (I.V., mouth, life-port)
- Where will I receive my treatments? (clinic, office)
- Can or should someone come with me for my treatments?
- How long will each treatment take?
- Will I be able to drive myself home?
- What are the names of the drugs I will receive?

- What side effects will I experience?
- Will I be given medication for the side effects?
- Should I eat before my treatments?
- Do I continue to take previous medication?
- Can I continue to take vitamins or herbs?
- Will I receive any other tests during my treatments?
- Will I continue to have my menstrual period?
- Should I use birth control?
- Will I be able to conceive and bear a child after this treatment?
- What physical changes should I report to you during treatment?
- Will I need radiation therapy?
- Can I continue my work or exercise schedule during treatment?
- Do you have written information on the treatment I will receive?
- How often will I return for check-ups after treatment?
- How will you evaluate the effectiveness of my treatments?
- Do I need to be on a special diet during treatment?

Your oncologist will be the major source of information regarding your treatments and follow-up care after treatment.

Questions to ask about my cancer and treatment:



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Oncotype DX™

Oncotype DX™ is a new diagnostic test that assesses the potential of breast cancer recurrence in women with early stage breast cancer and predicts the likely benefit from certain types of chemotherapy. This information helps physicians and patients make decisions based on a woman's individual cancer. This information allows physicians and patients to make more informed decisions about breast cancer treatment options.

Oncotype DX analyzes a patient's tumor sent to the laboratory from her biopsy specimen for a specific set of genes that are found in more aggressive cancers. The genes analyzed help to determine a recurrence score for the tumor. The genes studied at the laboratory are known to be involved with potential for recurrence.

Oncotype DX™ Recurrence Score Report

Results of the test are returned to the physician with a recurrence score from 0 - 100. The recurrence score corresponds to the potential for breast cancer recurrence within a period of 10 years from the time of diagnosis.

Scores

- 17 or below is considered low risk, but does not mean that cancer will never recur.
- 18 - 30 is considered an intermediate risk for breast cancer recurrence, but does not mean that cancer will never recur.
- 31 or above is considered high risk for breast cancer recurrence, but does not mean that cancer will recur.

Knowing the genetic profile of a cancer allows your physician to plan and tailor a treatment plan for you and your cancer. The profile is based on the latest in technology for understanding recurrence potential. The study also assesses your likely benefit from certain types of chemotherapy.

Oncotype DX is an appropriate test for patients when:

- Breast Cancer is stage I or II
- Breast cancer is ER positive
- Pathology report shows that lymph nodes are negative (cancer free)
- Hormonal therapy (like tamoxifen) is being considered as a treatment

Oncotype DX was specifically designed for stage I and stage II breast cancer, and it is not appropriate for use in women with ductal or lobular in situ cancer or for women with later stage disease.

Benefits from testing:

- You do not have to undergo any additional testing or procedures. Tumor removed during surgery is shipped to the company for testing.
- Your doctor is sent a recurrence score to determine your potential risk of breast cancer recurrence within 10 years of your initial diagnosis.

- Scoring your potential for recurrence provides a better understanding of the individual characteristics of your tumor.
- Your recurrence score also allows your doctor to assess the likely benefit resulting from certain types of chemotherapy.
- Decisions about treatment can be based on the latest information and technology on tumor recurrence and the benefits of chemotherapy and hormonal therapy in early stage breast cancer.



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Radiation Oncologist and Radiation Therapy

A radiation oncologist is an internal medicine physician who specializes in the treatment of diseases using radiation treatments. After your cancer is evaluated and it is determined that the use of radiation therapy could destroy any remaining cancer cells which may be left in your body, you will be referred to a radiation oncologist. Most patients who have a lumpectomy or breast-conserving surgery are referred to a radiation oncologist for evaluation prior to their surgery.

Radiation therapy (treatment by high-powered x-rays) is an effective weapon against breast cancer because it damages and prevents cell reproduction. When a cell is about to divide and is radiated, it cannot divide and it dies. Radiation therapy is used to destroy cells in the area of the breast that is radiated. Chemotherapy kills cells that have spread to other parts of your body through the blood or lymphatic system. Often both methods are used to give the best possible chance for eradication of the disease.

On your first visit to a radiation oncologist, the physician will carefully review your pathology report, mammogram records or films, your surgery recommendations or surgical records, results from any diagnostic tests performed, and your medical history. A physical exam will be performed and recommendations made for your treatment. If this recommendation includes radiation therapy to your breast area, it will be helpful if you ask the following questions:

- How many radiation treatments will I receive?
- When will these treatments begin?
- How long will each treatment last?
- How will the area to be radiated be marked?
- What kind of soap and bath do you recommend?
- What kind of skin reaction can I expect and how can I best protect my skin?
- Is there anything that I cannot use during my treatments (deodorant, powders, perfumes, etc.)?
- Can I wear my bra or prosthesis during the treatment period?
- Will I be able to perform my normal duties during treatment?
- What side effects may I expect during or after treatment?
- How will the treatments affect my breast after treatment is completed?
- Do you have written information on radiation therapy?

It is important that you understand the benefits and possible side effects of radiation therapy.



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Second Opinions

A cancer diagnosis can create anxiety, confusion and panic. The mind often shuts down or wildly spins while multiple and irreversible decisions must be made. You need questions answered and all available information before you can make an informed decision about treatment options. While some people are satisfied after discussing their options with their physician, others need an additional or second opinion to validate a diagnosis or suggested treatment protocol. For other women, a second opinion may only create more anxiety and confusion. Another reason to have a second opinion may be a requirement of your insurance provider. You may need to contact your provider to find out whether a second opinion is required before treatment is initiated.

Physicians' Response to Second Opinions

Some women feel that they may offend their physicians if they ask for or want a second opinion by implying their recommendations are erroneous. They do not want to erode their relationship by being perceived as "second guessing" their physician. Dr. Vincent T. Devita, Jr., former Director of the National Cancer Institute, argues, "I've taken care of cancer patients for a long time. I have never taken care of a doctor who didn't get a second opinion." Wanting a second opinion is not discounting your physician's recommendations as incorrect or inaccurate. It is acquiring necessary information and exploring all options on which to base a decision that is right for

you. Most physicians encourage second opinions and view them as a validation of their recommendations or an opportunity to learn from other specialists.

Second opinions are helpful when:

- You need reassurance that your diagnosis is accurate as reported.
- You are not confident of your physician's knowledge, experience, or judgement.
- You have questions your physician has been unable to adequately answer.
- You want assurance that this is the most current and appropriate treatment available for your type of cancer.
- You question the side effects and long-term risks associated with the recommended treatment.
- Your physician is not familiar with or does not offer certain treatments you have heard or read about.
- Your physician does not participate in clinical trials for breast cancer or have access to experimental medications in trials.
- You feel uncomfortable with your physician's recommendations.
- Your family and/or support partner has unanswered questions about your treatments.
- Your insurance provider requires a second opinion.

- You want to learn more about newer therapies not offered by your treatment team.

How and Where to Get a Second Opinion

- Ask for a recommendation from your own oncologist, surgeon, radiation oncologist or primary care physician. If you are timid or hesitant to ask, say something like, "There are many difficult decisions to make. I would feel more secure and comfortable if I could hear from someone else to confirm these decisions. Could you recommend someone for a second opinion?" Sometimes, having a support partner initiate the conversation or request the second opinion is more comfortable for the patient.
- You may also ask your primary care physician (family physician, Ob-Gyn, internist) for a list of recommended physicians or centers. Some physicians or facilities will not provide a second opinion unless another physician refers the patient for a consultation. In those cases, the consulting physician will report the findings to your referring physician.
- Call a major cancer treatment center to ask if they offer second opinions for breast cancer. Cancer centers usually have specialized tumor conferences where a multidisciplinary team of expert physicians (radiologist, surgeon, pathologist, medical oncologist and radiation oncologist) review individual cases and make a collective treatment plan decision.
- The National Cancer Institute has accredited cancer centers across the country based on their comprehensive and high standards of care. These centers can be found by calling 800-4-CANCER or 301-496-4000 or by visiting their Web site at www.cancer.gov. Centers are listed by state. Many will review your case and make treatment recommendations.

Some centers offer second opinion services based only on your diagnostic test reports, films, slides, and history. Others may want you to be physically present. Remember, you do not have to be treated at these facilities. The recommendations can be forwarded to your physician and, if the treatment is available, you can receive treatment in your local facility.

- Ask friends and peers who were treated for cancer for recommendations of physicians or centers.

When Requesting a Second Opinion Ask:

- When is an appointment available for a second opinion?
- Will the opinion be offered by a multidisciplinary group of physicians or an individual physician?
- How much does a second opinion cost? (Some centers have one fee and some send a bill from each reviewing physician.)
- Will my insurance company be billed or am I responsible for charges at the time of the appointment?
- Are payments required in cash or credit card and do you have to file your own insurance? If paying cash, ask for a cash rate (usually the same as Medicare reimbursement).
- Are scheduled payment plans available?
- Do I have to be physically present for the evaluation?
- Do I need a referral from a physician or do you accept self-referrals? (Often your primary care physician will request the second opinion if you need a referral.)
- Who is the second opinion report sent to? (referring physician, directly to patient or both.)
- Will I have the opportunity to discuss the report recommendations with a reviewing physician(s) if I have questions?

- Will my physician be able to talk with a reviewing physician about recommendations?
- What reports, records or films do you need for me to send to you? Do you accept copies? (Do not use the mail to send original copies. Use a carrier such as Federal Express who can track the package and provide quick delivery.)
- Do I sign a release for you to acquire my records or do I need to contact each physician for my records and send them to you?
- How soon after the physician(s) review my case can I expect to hear the second opinion recommendations?
- If after reviewing my case, additional diagnostic tests are recommended, will those tests need to be made in your center or a center of my choice?
- Do you provide any written patient information about your recommendations for procedures and/or treatments?
- Is a patient educator available to discuss the side effects of recommended treatments?
- May I record the multidisciplinary conference discussions or can the final recommendations be recorded and given to me?

When seeking a second opinion, clarify the questions that you want answered. Make a list of your questions and concerns before the visit and take the list with you. Be sure that all requested lab and diagnostic test results are sent to the physician or center before your visit to ensure that the needed information is available before the consultation. Call several days prior to your appointment to find out if the information has arrived. If a center is simply reviewing your test results and you will not be present, call to be sure the center has received all needed tests and reports to

provide a viable opinion. The consulting physician will send his or her treatment recommendation either to you or your physician or copies to both.

Second Opinions Delay in Treatment

Second opinions require arranging appointments, consulting with other physicians and perhaps having additional tests. This takes time. Some women fear if they delay their treatment, their condition could progress. Most experts agree that the few days or weeks it takes to get a second opinion usually do not create dangerous delays. However, ask your physician if there is any threat to your life or recovery if you take a few days or weeks to learn about treatment options before making a final decision.

When Second Opinions Don't Solve Treatment Questions

At times, a second opinion is not enough. Occasionally, a physician may offer conflicting or different opinions. A third or fourth opinion may be needed. However, do not use the endless search for opinions as an excuse for not making final treatment decisions. If you are unable to make decisions, you may need to talk to a mental health professional. Fears can be a roadblock to decision making.

Reimbursement for Second Opinions

Call your insurance provider to determine if your policy provides reimbursement for second opinions. Even if it is not covered, a second opinion may be the best investment in your cancer treatment. A second opinion provides peace of mind and it may help you find a treatment that is best for your needs. Meeting your goals for your recovery is priceless.

Radiation Treatments:

The radiation oncologist will monitor your treatments. Treatments are given in a clinic or hospital on an outpatient basis. This first session will include special exams, such as CT scans or special x-rays, to determine the area to be treated. To ensure that the radiation beam is aimed correctly each day, a technician will outline your chest with tiny, freckle-sized dots of semipermanent ink. Although the marks will eventually fade away, they need to remain until treatment is completed, so soap and scrubbing on the area must be avoided during the treatment period. This visit may require one hour or longer. Treatments are given five days a week, Monday through Friday, for five to seven weeks. Each treatment time requires approximately 15 minutes, with the actual time under radiation being only a few minutes.

Radiation therapy is delivered by a machine that produces high-energy x-rays from radioactive substances. The radiation is directed to the area in your body where disease was found or where there is a potential for microscopic disease. The treatments are painless and you cannot see the rays. You will lie on your back on a table in a treatment room. Once you are positioned correctly, the technicians go into an adjacent room where they can monitor you on closed circuit TV and talk to you over an intercom during the procedure.

The machine is then turned on. Radiation equipment is large and often noisy. The machines may click, or sound something like a vacuum cleaner as they move around to aim at the cancer from different angles. Radiation therapy is painless; but some women may have a sensation of warmth or mild tingling—this is normal. Once the machine delivers the prescribed dose to your

body, usually within a minute, it is turned off and the technologist returns to help you up from the table. You can then dress and leave.

Most people in good physical condition do not need to be accompanied to their radiation treatment and can drive themselves. In fact, many continue to work or engage in normal daily activities following treatments.

It is important to avoid any products that could irritate the area or interfere with the radiation treatments. Do not use any products such as deodorants, powders or soaps that contain aluminum as they can leave a residue on your skin. Ask your treatment team which products you may use during your treatments. Many women are concerned about perspiration odor under the surgical arm. Surgery removes much of the gland under the arm that contributes to perspiration odor. However, you can wipe the area with alcohol or dust with cornstarch.

The effects of the treatments will be monitored by your radiation oncologist throughout the treatments. Some women experience mild fatigue, slight skin discoloration in the area resembling a sunburn, sore throat, or difficulty swallowing. These treatments do not make you radioactive, nor are you a danger to your family. Most women find that they are able to maintain a relatively normal lifestyle with added rest periods to compensate for the fatigue.

For additional information, call your local American Cancer Society for a radiation therapy booklet.

Summary:

You need to trust and be comfortable with your treatment decisions. Sometimes this may mean a second or even a third opinion. These opinions ensure that you have done everything possible to participate in the information-seeking and decision-making process. On the other hand, if you feel comfortable with your physician's recommendations without consulting anyone else, **this is the right decision for you**. Second opinions should help answer questions and reduce your anxiety about decisions, not cause additional stress.



Stem Cell and Bone Marrow Transplant Glossary

The following is a list of terms that you may hear used during discussions with your healthcare provider. Always ask your healthcare providers to explain terms you do not understand. This allows you to make informed decisions about your care.

Absolute granulocyte count

The number of mature white blood cells capable of fighting infections.

Allogeneic bone marrow transplant

Marrow received from a donor for a transplant.

Alopecia

The loss of hair.

Apheresis

The collection of immature white blood cells, called progenitor cells, from a catheter in a vein.

Aspiration

Process of removing cells using a needle and syringe from the bone marrow of the hips by applying suction.

Autologous bone marrow transplant

Bone marrow from your own body.

Biopsy

The removal of cells or a tissue sample for evaluation by a pathologist.

Bone marrow

The soft, spongy portion of large bones where blood cells are produced.

Bone marrow aspiration

The process of removing cells using a needle and syringe from the bone marrow of the hips by applying suction.

Bone marrow transplant (BMT)

The process of replacing damaged or diseased bone marrow with healthy bone marrow from a donor or the patient.

Central-line catheter

A small flexible tube inserted into a large vein usually on the chest to give medications and blood products, and draw blood samples. A Hickman catheter is an example.

Chemotherapy

Commonly referred to as medications used in cancer treatment to kill cancer cells.

Clinical trials

Organized research to evaluate a new treatment for a specific disease.

Colony stimulating factors

Medications (hormones) that stimulate the development of cells in the bone marrow.

Cytomegalovirus (CMV)

A virus that can cause problems for people with a low resistance to infections.

DMSO (dimethyl sulfoxide)

The preservative used to store aspirated bone marrow before it is returned to the patient.

Electrolytes

Components of blood, such as potassium and sodium, that help the body carry out everyday functions.

Engraftment

Period of time when new bone marrow is in the process of producing new blood cells.

Granulocyte

Portion of the blood that fights infection.

Graft-versus-host (GVHD)

A reaction between the new marrow and the patient.

Growth factor

Hormones given to a patient to stimulate blood cell growth.

Harvest

The removal of bone marrow from large bones.

Human leukocyte antigen (HLA)

A special marker found on white blood cells used to match donors of bone marrow with recipients.

Immunosuppression

Period of time when the immune system, determined by the number of white blood cells, is suppressed. When white blood counts are low, the body loses its ability to resist infections.

Infusion

The process of putting fluids into a vein.

Irradiated blood products

Blood components that have been radiated to destroy foreign white blood cells.

Leukapheresis

The process of collecting a patient's whole blood and separating out needed components of the blood for return to the patient when needed. After the special components have been collected, the remaining blood is returned to the patient. Components are stored for use when needed. In bone marrow transplants the progenitor cells (pre-mature white blood cells) are collected.

Metastatic cancer

Cancer that has left its original site, moved to another part of the body and is growing.

Mucositis

Inflammation and irritation of the cells that line the gastric tract (mouth, throat, stomach, intestinal tract).

Neutropenia

Condition when the number of white blood cells is very low. Patient is susceptible to infections.

Neutrophil

The most common type of white blood cell.

Platelets

Type of blood cells that cause the blood to clot.

Progenitor cells

Immature blood cells that develop into white blood cells.

Protective Isolation

Environment that is ultra-clean to prevent the spread of infection.

Protocol

A plan of care or treatment.

Reinfusion

The process of putting back into the body a fluid that has been previously removed.

Stem cells

Immature cells that develop into either red or white blood cells or platelets.

Syngeneic bone marrow transplant

Bone marrow that is taken from an identical twin and given to the other.

Total body radiation

Radiation therapy given to the entire body.

Total parenteral nutrition (TPN) or hyperalimentation

A highly nutritional intravenous fluid given when one is unable to eat.

White blood cells

Cells that help fight infection.



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Subcutaneous Injection Instructions

Subcutaneous injections are medications given into the body by a needle and syringe. The tissues injected are called subcutaneous (just beneath the skin). You may need to learn to give yourself some medications by self-injection (shots) to help you manage your health at home,

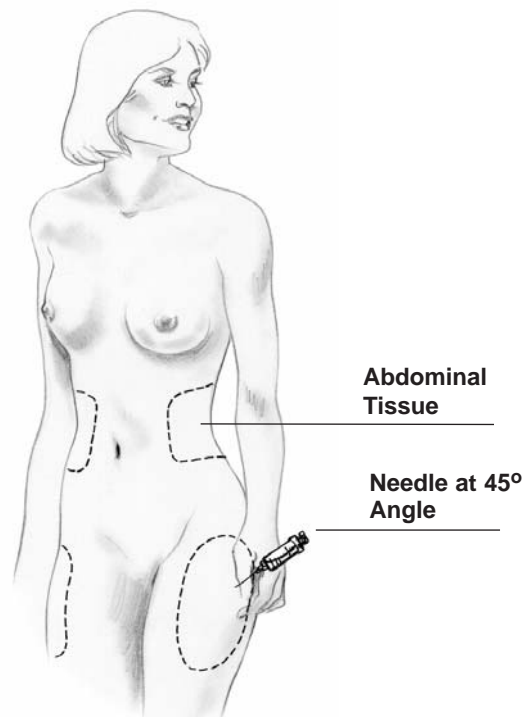
Instructions for Self-Injections:

- Gather your supplies and medication
- Wash your hands with soap and water.
- Assemble the needle and syringe according to the manufacturer's directions.
- Draw the drug into the syringe.
- Place a protective cap over the needle until you are ready to inject.
- Select a site and cleanse the area by using an alcohol pad, wiping in a circular motion.
- Allow alcohol to dry.
- Grasp the area surrounding the site of injection and pinch together slightly.
- Inject the needle at an angle of 45 to 90 degrees.
- After the needle is in place, release your grasp of the tissue.
- Gently pull back on the plunger of the syringe to determine if the needle is in a blood vessel. If blood appears, withdraw the needle and select a new site.
- If blood does not appear, inject the solution slowly.

- Withdraw the needle quickly at the same angle it was inserted.
- Massage the area gently with the alcohol pad.
- Replace the needle cap and dispose of the needle in a proper container. Ask your nurse or pharmacist how to properly dispose of the needle.

Most people feel more comfortable if they first practice the procedure on an orange before injecting themselves.

Subcutaneous Sites For Self-Injection





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Thoracentesis

Thoracentesis is the removal of accumulated fluid in the lung cavity. In breast cancer patients, the fluid accumulation is caused by breast cancer spreading to the lungs. The cancer cells cause the lungs to fill with fluid. The fluid accumulation causes difficulty breathing. **Thoracentesis** removes the fluid, relieving the symptoms. After documenting the area of fluid accumulation with x-rays, your physician will perform thoracentesis.

Thoracentesis procedure:

- A healthcare provider will explain the procedure and ask for you to sign a written consent form.
- You may receive a medication to relax you but not cause you to sleep (you will be asked to move into various positions).
- You will be asked to sit up on the side of the bed and lean over the bedside table or to straddle a chair backwards to position your back toward the physician and expand your rib cage.
- A nurse will help you remain in the position and serve as your coach throughout the procedure.
- It is important that you **not move** during the procedure.
- **If you feel you have to cough or move, inform the nurse and physician beforehand.**
- The physician will inject medication to numb the area.
- After the injection you will feel no pain, only pressure, from the procedure.
- The thoracentesis needle is inserted between the ribs, and into the lung filled with fluid.
- The needle has an empty syringe into which the withdrawn fluid is aspirated when the physician applies suction.
- If necessary, medication may be inserted into the same space and you may be connected to a drainage device to remove the fluid for a period of time. Your physician will inform you **prior** to the procedure if this is the treatment plan.
- The needle is withdrawn and a bandage placed over the area.
- The aspirated fluid is sent for evaluation.
- Your vital signs (pulse, respiration, and blood pressure) will be monitored carefully.
- **Inform your healthcare professional of any distress you are experiencing during or after the procedure.**



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Transfusion of Platelets

During cancer treatment, many chemotherapy medications can cause a drop in the number of platelets or components that cause blood clotting in your body. Low platelet counts cause you to bruise easily, to ooze continuously from any scratch or cut and to be at high risk for life-threatening bleeding (hemorrhage). To decrease these symptoms, your physician will periodically take a blood sample to determine if your platelets are at a level that requires a transfusion of platelet cells.

If you need a platelet transfusion, a sample of your blood will be drawn before the transfusion to identify your blood type and correctly match the donor platelets. The transfusion is given through specially filtered tubing and an IV needle inserted into a vein or intravenous port, if you have one. A registered nurse will administer the platelet transfusion. The transfusion is given rapidly (within an hour). The nurse will monitor you during the entire transfusion and for a short period of time afterwards. You will have frequent blood pressure readings, along with pulse, respiration, and temperature checks during the transfusion.

The local blood bank makes every effort to assure that the platelets you receive are safe and a correct match for you. However, allergic reactions may occur during the transfusion or within 48 hours after the transfusion is completed. Symptoms may include:

- fever or chills
- flushing of the face
- rash or itching (hives)
- shortness of breath
- wheezing
- low back pain
- nausea or vomiting
- weakness
- chest pain
- blood in the urine (wine colored urine)
- decreased urine output
- yellowing of the skin or unexplained fever for up to six months

If you experience any of these symptoms, notify your healthcare provider immediately.

All donated blood is now tested for the HIV (AIDS) virus and for many other viruses (HAV, HBV, and CMV). The test is nearly 100 percent accurate, so you may feel confident of the safety of the transfusion if one is necessary.

After your platelet cell infusion, your platelet counts will return to a higher level and you should notice less bruising and be at less risk for bleeding.

If you do not understand the above information, or have other questions, please ask your nurse to answer your questions about platelet cell transfusions.



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Transfusion of Red Blood Cells

During cancer treatment, many chemotherapy medications can cause a drop in the number of red blood cells in your body causing fatigue, shortness of breath and a number of other related problems. To decrease these symptoms, your physician will determine if your blood counts show that your red blood cells are at a level that requires a transfusion of red blood cells.

A sample of your blood will be drawn before the transfusion to identify your blood type and correctly match the donor blood. The transfusion is given by a trained registered nurse through filtered tubing and an IV needle into a vein or an intravenous port, if you have one. The transfusion will be given slowly, gradually increasing the flow rate, over a period of several hours. The nurse will monitor you during the entire transfusion and for a short period of time afterwards. You will have frequent blood pressure readings, along with pulse, respiration, and temperature checks during the transfusion.

The local blood bank makes every effort to assure the blood products you receive are safe and a correct match for you. However, allergic reactions may occur during the transfusion or within 48 hours after the transfusion is completed. Symptoms may include:

- fever or chills

- flushing of the face
- rash or itching (hives)
- shortness of breath
- wheezing
- nausea or vomiting
- weakness
- chest pain
- low back pain
- blood in the urine
- decreased urine output
- yellowing of the skin or unexplained fever for up to six months

If you experience any of these symptoms, notify your healthcare provider immediately.

All donated blood is now tested for the HIV (AIDS) virus and many other viruses (HAV, HBV, CMV). The test is nearly 100 percent accurate, so you should feel confident of the safety of the transfusion, if one is necessary. After your red blood cell infusion, your blood counts will return to a higher level and you should experience an increase in energy and overall well-being.

If you do not understand the above information, or if you have questions, please ask your healthcare provider to answer your questions about **red blood cell transfusions**.

Diagnosis of discharge cause and type:

A thorough exam of the breast should be performed to check for a lump and to find out which duct or ducts are involved. Fluid from the breast will then be examined. This can be done by sending it to a lab for analysis to see if it contains blood, bacteria, etc. Some testing can be done in the physician's office. For example, a discharge can be checked for blood by applying a chemical to the breast fluid.

Mammography is helpful in determining if there is anything in the breast that would indicate an underlying cause. In cases where no lump can be felt or no suspicious area appears on mammography or ultrasound, the physician can have a special test, a ductogram (galactography), performed. This test is usually performed if the discharge contains blood or is from one or two ducts on the same breast. A radiologist inserts a small catheter into the duct producing the discharge. A radiographic fluid is then injected and the area is examined by mammography. If it is necessary to remove the duct, the surgeon can have the duct injected and stained with a dye. Only the diseased duct is removed, saving a large portion of the breast.



Treatment Choices for Breast Cancer

<p>Stage 0 In Situ</p>	<p>Ductal Carcinoma In Situ:</p> <ul style="list-style-type: none"> - Excisional biopsy with or without radiation therapy—according to aggressiveness of cells. - Total mastectomy—if aggressive, multifocal, difficult to follow. - Observation only—in elderly or special cases. <p>Lobular Carcinoma In Situ:</p> <ul style="list-style-type: none"> - Excisional removal of cancer. - Observation only. - Total mastectomy one or both breasts with or without lymph nodes. <p>Clinical Trials:</p> <ul style="list-style-type: none"> - Tamoxifen with excisional biopsy or observation only.
<p>Stage I</p>	<p>Surgery:</p> <ul style="list-style-type: none"> - Lumpectomy with lymph nodes removed and radiation therapy. - Total mastectomy with lower nodes removed. - Modified radical mastectomy with lymph nodes removed. <p>Treatment:</p> <ul style="list-style-type: none"> - Chemotherapy—according to aggressiveness of cells, age, ER/PR status. - Hormonal therapy—according to ER/PR status. <p>Clinical Trials:</p> <ul style="list-style-type: none"> - Sentinel lymph node biopsy (defines draining nodes of tumor and may prevent axillary dissection). - Combination of chemotherapy drugs. - Chemotherapy before surgery.
<p>Stage II</p>	<p>Surgery:</p> <ul style="list-style-type: none"> - Lumpectomy with lymph node removal followed by radiation therapy. - Total mastectomy with lymph nodes removed. - Modified radical mastectomy with lymph nodes removed. <p>Treatment:</p> <ul style="list-style-type: none"> - Combination of chemotherapy drugs for premenopausal and post-menopausal with negative hormone receptors. - Hormonal therapy if tumor receptors positive. - Radiation therapy following mastectomy if 4 or more nodes positive, tumor over 5 cm or chest wall involvement. <p>Clinical Trials:</p> <ul style="list-style-type: none"> - New combination of chemotherapy drugs. - Hormonal therapy only after surgery for certain patients. - Hormonal therapy after chemotherapy for some patients.

<p>Stage IIIA</p>	<p>Surgery:</p> <ul style="list-style-type: none"> - Modified radical mastectomy with lymph nodes removed. - Lumpectomy with radiation therapy. <p>Treatment:</p> <ul style="list-style-type: none"> - Combination chemotherapy. - Radiation therapy to chest wall or axilla. - Hormonal therapy if receptor positive. - Chemotherapy before surgery. - Radiation therapy before surgery. <p>Clinical Trials:</p> <ul style="list-style-type: none"> - High dose chemotherapy (stem cell or bone marrow, in clinical trials only). - Sentinel node identification.
<p>Stage IIIB</p>	<p>Surgery:</p> <ul style="list-style-type: none"> - Lumpectomy with radiation therapy. - Lumpectomy after pre-operative chemotherapy followed by radiation. - Modified radical mastectomy with lymph nodes removed. <p>Treatment:</p> <ul style="list-style-type: none"> - Combination chemotherapy. - Radiation therapy to chest wall or axilla. - Hormonal therapy if receptor positive. - Chemotherapy before surgery. - Radiation therapy before surgery. <p>Clinical Trials:</p> <ul style="list-style-type: none"> - High dose chemotherapy (stem cell or bone marrow, in clinical trials only). - Sentinel node identification.
<p>Stage IV</p>	<p>Surgery:</p> <ul style="list-style-type: none"> - Lumpectomy with lymph node removal and radiation therapy. - Modified radical mastectomy with lymph node removal. - No surgical removal of breast (in some cases). <p>Treatment:</p> <ul style="list-style-type: none"> - (Treatment may precede surgery and surgery may not be performed). - Combination chemotherapy. - Radiation therapy to chest wall or axilla. - Hormonal therapy if receptor positive. - Chemotherapy before surgery. - Radiation therapy before surgery. <p>Clinical Trials:</p> <ul style="list-style-type: none"> - High dose chemotherapy (stem cell or bone marrow, in clinical trials only). - Sentinel node identification.

<p>Inflammatory Breast Cancer</p>	<p>Surgery:</p> <ul style="list-style-type: none"> - Modified radical mastectomy (following chemotherapy). <p>Treatment:</p> <ul style="list-style-type: none"> - Chemotherapy before surgery. - Combination chemotherapy. - Radiation therapy to chest wall or axilla. - Hormonal therapy if receptor positive. - Radiation therapy before surgery. <p>Clinical Trials:</p> <ul style="list-style-type: none"> - High dose chemotherapy with stem cell transplant (in clinical trials only). - Bone marrow transplant (in clinical trials only).
<p>Recurrent Breast Cancer</p>	<p>Surgery:</p> <ul style="list-style-type: none"> - Recurrence in one location, surgery to remove cancer. <p>Treatment:</p> <ul style="list-style-type: none"> - Radiation therapy in place of or in combination with surgery. - Multiple site recurrence, chemotherapy or hormonal therapy. <p>Clinical Trials:</p> <ul style="list-style-type: none"> - New chemotherapy drugs. - High dose chemotherapy with stem cell transplant (in clinical trials only). - Bone marrow transplant (in clinical trials only).
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TREATMENT SIDE EFFECTS

TREATMENT
SIDE EFFECTS



Abdominal Pain During Treatment

Problems in the abdomen (stomach or colon), can be a source of much discomfort during cancer treatment. Some people have pre-existing problems before their cancer diagnosis and treatment may increase the intensity and frequency of these problems.

Chemotherapy destroys cells in the process of division. The cells that line the stomach and colon are cells that rapidly divide and are often damaged temporarily by chemotherapy. Chemotherapy also decreases the healthy bacteria in the colon causing increased cramping and gas. If you have a history of lactose intolerance (milk) that causes gas after you drink or eat a product containing milk, the condition may become even more severe during treatment. The good news is that when treatment is over, the cells will return to normal functioning and symptoms will decrease.

Pain Descriptions:

Abdominal pain can be a dull ache, cramping or burning during chemotherapy treatment. The most common complaint is a burning sensation caused by irritation of the cells. Sharp pain that does not stop in a few minutes may be an indicator of a more serious problem. Chemotherapy drugs can cause movement of food to either increase or decrease through the colon. Rapid movement is associated with diarrhea (loose or watery stools) and slow movement is associated with constipation. Diarrhea often has a cramping pain, followed by excessive watery

bowl movements. Constipation has a duller cramping pain and an increase of flatulence (gas).

Tips for managing discomfort:

- Avoid aspirin, ibuprofen or any medication unless prescribed by your physician because they may increase irritation.
- Stop smoking and avoid alcoholic beverages, as both increase irritation.
- Take any medication with food, unless your healthcare provider tells you to take it on an empty stomach.
- For burning, gnawing pain avoid beverages that are very hot or very cold.
- Avoid caffeinated beverages (soda, coffee, strong tea). Drink lots of fluids that are not carbonated or do not have high sugar content.
- During periods of irritation or pain, eat a diet that is low in fiber or has a soluble fiber source (rice, bananas, oatmeal, mashed potatoes, applesauce, skinless chicken or turkey).
- For cramping pain, lie down and relax for a while. Take deep, slow breaths and exhale slowly. If pain continues and you have noticed that abdominal gas has increased, walking will often help you pass the trapped gas and relieve the pain. Determine if milk increases your cramping and pain. If so, avoid milk products.

Over the Counter Medications:

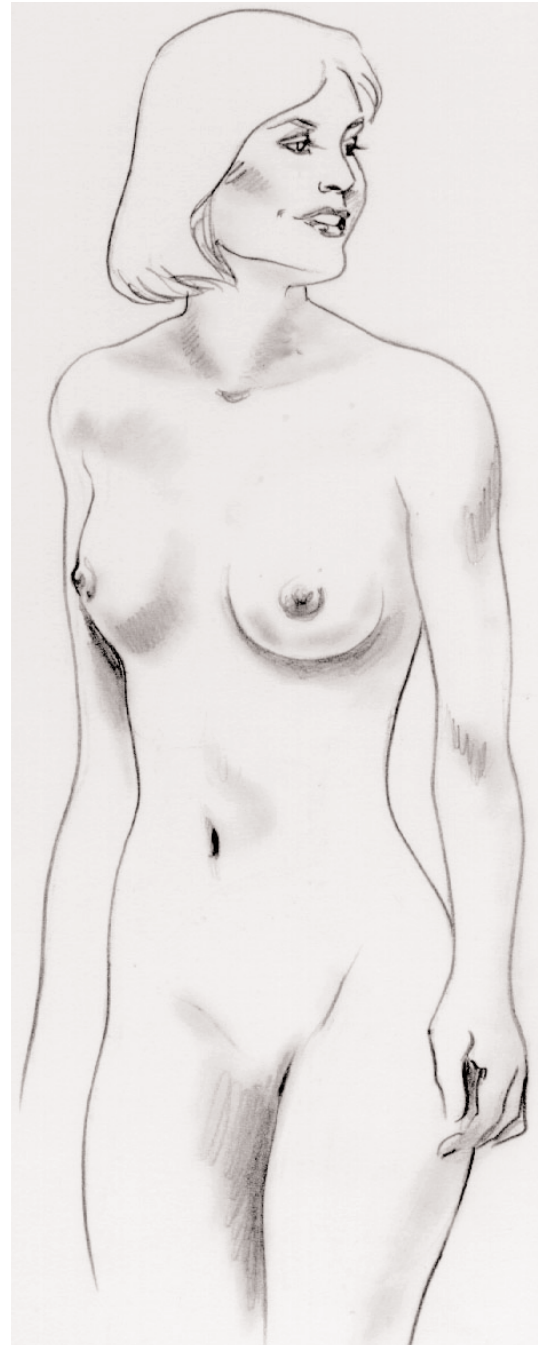
Ask your healthcare provider if you may take:

- Maalox
- Mylanta
- Pepto-Bismol
- Tums
- Tagamet
- Gas-X or Beano for gas
- Lactaid (for milk intolerance)
- Stool softener for constipation

Report to a physician:

- Diarrhea with any sign of old (black or tarry) or fresh blood
- Diarrhea episodes of 4 - 6 times in a 24 hour period
- Vomiting with any sign of old (looks like coffee grounds) or fresh blood
- Vomiting more than 4 - 6 times in a 24 hour period
- Abdominal swelling or an abdomen that is tight when touched
- No bowel movement in 3 days after efforts recommended by healthcare provider for constipation
- Fever over 100.5
- Feeling weak, dizzy or fainting

Mark the areas where you are experiencing sharp or aching pain. Return this sheet to your healthcare provider.





Alopecia — Hair Loss

Alopecia is a temporary or permanent loss of hair that occurs as a side effect of chemotherapy or from radiation therapy directed to the head. Chemotherapy for breast cancer produces **temporary** alopecia that varies from thinning to complete baldness. Some medications damage the hair cells, causing the hair follicle to produce weak, brittle hair that either breaks off at the surface of the scalp or falls out. The kind of drug and the length of time the drug is administered will determine how long alopecia will last. Most hair loss usually occurs three to four weeks after the administration of drugs. The amount of hair loss varies according to the drug and the dosage of the drug. However, the amount may vary among patients even when they are given the same dosage and number of chemotherapy treatments. It is an individual response. Ask your healthcare provider when you should expect to lose your hair. Hair loss may also occur in other body sites such as the eyebrows, eyelashes, pubic, and facial hair. However, these hair follicles have a slower growth rate and seem to suffer less damage.

Hair re-growth starts during or shortly after treatments are completed. When the hair grows back it may have a different texture and slightly different color. Very often the hair has a wavy pattern or is curly and darker. Most women like the texture and manageability of their new hair.

Drugs used in treating breast cancer which result in a high degree of hair loss include:

- Doxorubicin (Adriamycin®)—hair loss usually in 3 to 4 weeks; 90 percent average loss
- Methotrexate—3 to 4 weeks; 33% average loss
- 5-Fluorouracil (5FU)—minimal hair loss
- Bleomycin—rare occurrence
- Mitomycin—hair loss varies
- Taxol and Taxotere—total hair loss

Hair loss is sometimes more difficult to face than the loss of all or a part of a breast. Hair loss is obvious, visible evidence of the cancer process and the first public indication of the battle with cancer. Hair loss further compounds the change in body image and sense of diminished femininity. When hair loss occurs, acknowledge the loss and grieve, but don't feel guilty. Some people may try to offer consolation and support by pointing out how insignificant hair loss is compared to battling a life-threatening disease, but most can say this because they have never lost their hair. After grieving, talk about your feelings with people whom you trust and feel comfortable. Remind yourself that hair loss is positive, displaying the proof that chemotherapy is killing cells—good and bad. Talk with and visit other women who have suffered alopecia and now have their own hair

back. Support such as this may be found in breast cancer support groups in which women are in all stages of breast cancer treatment. Some women have had great fun buying different colors and styles of wigs.

Before hair loss begins, several things may be done to minimize the trauma. A short haircut that is easily managed minimizes the hair thinning appearance and makes complete hair loss somewhat less alarming. Some women prefer to let someone shave their head if they know that their chemotherapy causes complete hair loss.

Select a wig prior to losing your hair when the natural hair color and style can be closely matched. Wear the new wig occasionally before you have significant hair loss to help in the adjustment. In addition, the change will not be as noticeable to other people. If you have long hair you may be able to have your hair cut and a wig made from your own hair. Ask a cosmetologist if she can refer you to companies that do this. Some insurance companies may cover the cost of a wig if the physician writes a prescription. Wigs, however, are tax deductible as a medical expense. Turbans or hair nets worn at home will help control the loose hairs as they fall out. They are also excellent to sleep in and wear when wigs become too hot. Sporty hats and caps worn with scarves are another way many women look and feel fashionable during treatment.

Proper care of your hair may minimize hair loss and thinning and protect new hair growth.

- Shampoo hair with protein-based shampoo and follow with a conditioning rinse.
- Shampoo less often, every three to five days.

- Gently dry hair with towel; pat hair dry.
- Dry hair on low temperature setting or allow to dry naturally.
- Minimize use of electric curlers and curling irons; a curly perm prior to treatment may be helpful.
- Avoid use of hair clips, barrettes, and ponytails with elastic bands.
- Use hair spray sparingly.
- Avoid hair dyes that weaken hair further.
- Avoid excessive brushing and combing of hair.
- Purchase a satin pillowcase for sleeping to reduce hair tangling.
- Once treatment begins, wear a hair net or turban at night to prevent falling hair from getting on bed linens.

Contact your American Cancer Society about the Look Good, Feel Better program where trained cosmetologists will help you with your changing hair needs and makeup application.

Additional suggestions:



Anemia — Low Hemoglobin

Anemia is a condition caused by a low hemoglobin blood count. Hemoglobin is the portion of the red blood cells that attaches to oxygen. When the hemoglobin is low, the entire body is deprived of needed oxygen and side effects result. Cancer treatment including chemotherapy and radiation therapy will often cause anemia. This is an expected side effect of treatment that will subside when treatments are completed. Your physician will perform studies of your blood to observe any changes in your blood counts. If anemia is identified and you are not currently receiving cancer treatment, the cause will need to be identified and steps taken to correct the problem. Anemia may also be from bleeding or blood-related diseases. Normal range for hemoglobin counts: 12-16g/100 ml for women and 14-18g/100 ml for men.

It is important that you report to your physician any sudden increase in the following:

- headaches
- fainting
- shortness of breath
- chest pain

Symptoms observed with **mild** anemia:

- fatigue
- paleness
- shortness of breath during exertion or exercise
- increase in heart rate

Symptoms with **severe** anemia:

- extreme fatigue
- headache
- dizziness, fainting
- irritability
- shortness of breath during mild exertion and at rest
- increase in respiration at rest
- potential for chest pain
- increased pulse rate

Your physician will monitor your hemoglobin closely. Constantly feeling fatigued can be demoralizing. However, understanding that anemia is a result of treatment and is self-limiting may be helpful. If your hemoglobin levels drop very low, a blood transfusion of packed red blood cells (RBCs) may be administered. Managing fatigue will decrease the effects on your lifestyle. Ask your health-care provider for the teaching sheet on fatigue.

Additional instructions on management of anemia:



Anxiety — Recognition & Management During Treatment

A diagnosis of cancer is a frightening event in anyone's life. Fear is a normal response. At the time of diagnosis you may find yourself experiencing anxiety that you have never had before. A cancer diagnosis is unlike many previous stresses you have experienced; it threatens your own body, whereas many other stressors have been from outside circumstances. So, the anxiety you experience after a cancer diagnosis may be completely new to you. Many people become frightened due to this new experience and feel that "I am completely losing it." This is common. You are normal. Understanding this new type of anxiety and how to manage it is necessary to reduce the anxiety you may be experiencing.

Anxiety occurs when you experience an overwhelming event and are uncertain how to solve the problem. This challenges you to make decisions and because you have never faced this problem before, you may find yourself fearful of making the right decision or the consequences of a decision that you make. Anxiety is experienced by everyone, but the same experience can bring different fears for different people. Some people may have severe anxiety and others may not.

Anxiety Symptoms:

- Nervousness (hands and body may shake or you may simply feel jittery)
- Emotionally sensitive (cry easily, become angry)

- Concentration and memory are significantly reduced (can't remember what is said to you or what you have said or done)
- Sleep is disturbed (insomnia)
- Eating patterns change (some can't eat, others may want to eat all the time)
- Physical symptoms of nausea, diarrhea or constipation, rapid heartbeat, sweating, heart pounding or beating rapidly, shortness of breath, dizziness or increase in blood pressure)
- Relationships change (you may find yourself over-dependent on those around you or withdrawing emotionally)
- Daily activities become difficult to perform
- Excessive worry about the future
- Muscle tension and headaches
- Fatigue

Dealing with Anxiety:

- Recognize that it is normal to experience anxiety when life brings a new event into your life in which you have little information or training on how to solve the problem.
- Understand that learning how to solve the problem starts with understanding your disease and the steps that you have to take to solve the problem.

- Identify people on your healthcare team who can give you specific information about your disease and what decision you will be required to make. This is essential because there are many types of cancer and even the same type of cancer you have may be treated differently in someone else. Only the healthcare professional who has all the information about your cancer can lead you to solve your particular problem.
- Find people who support you in your quest to solve your problem by helping you and not demanding that decisions be made their way. You need to be able to talk openly without fear of upsetting them, and they in turn need to be understanding and helpful.
- Take steps to reduce anxiety by reducing the work load in other areas of your life while you solve this problem that needs your attention. Do not feel guilty when you cannot do things you have always done such as car pool or volunteer work—you have to concentrate on solving your cancer problem now. This is priority!
- Do not turn to alcohol or recreational drugs. Talk to your physician about prescription drugs to help with reducing your anxiety that would allow you to get rest and calm down enough to get through the initial part of the diagnosis. This is the hardest time, and when you get through the initial steps of finding the right information and making decisions, anxiety will naturally reduce. Anxiety is not a weakness, it is a sign you are human.
- Use your faith and hobbies as a place to focus your attention away from your cancer.
- Keep a diary or a journal of how you are feeling. Write down your fears, your questions, and answers to the questions, and each day list something good that happens to you or what you are thankful for. You will be surprised at how writing down your journey through cancer will help you emotionally.
- Learn to add something daily that adds joy to your life (hot bath, reading, playing with children, listening to music-whatever makes your heart feel peaceful).
- Learn how to relax by slow, deep breathing. On expiration, concentrate on a joyful thought. Do this for at least 15 in and out respirations. (Relaxation Response)
- Consider a professional counselor (licensed counselor, psychologist, or psychiatrist). Counselors have the skills to help identify weakness in coping skills and to help develop new skills to handle life's stresses. If medication is needed in addition to coping skills, a psychiatrist is the most appropriate choice.

Medications for Anxiety:

- Lorazepam (Ativan®)
- Diazepam (Valium®)
- Clonazepam (Klonopin®)
- Alprazolam (Xanax®)
- Chlorpromazine (Thorazine®)
- Buspirone (BuSpar®)
- Haloperidol (Haldol®)

Anxiety is a normal part of a cancer diagnosis. Dealing with anxiety is a necessary step to prevent compounding your future health problems. Taking steps to manage your anxiety is a sign that you are moving toward a successful recovery.



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Appetite Stimulation

Chemotherapy drugs often cause a patient to lose her normal appetite and may cause a change in the taste of some foods. Some people report that sweet foods, salty foods, meats, or caffeine have a different taste during cancer treatment. The sense of smell may be affected and a premature feeling of fullness in the stomach when eating may occur.

The consequences of no appetite are often a reduction in calories, weight loss, muscle wasting, weakness, and fatigue. It is necessary for you to be able to take in enough calories and nutrients to maintain a good nutritional state to prevent and fight infections. This can be difficult when you do not have a good appetite.

The following suggestions will help you find ways to increase your calorie and nutrient intake and stimulate your sluggish appetite:

- Eat the most when you feel the best
- Eat with family and friends
- Gently clean your mouth before meals with mouthwash (non-alcoholic) to combat a bitter or metallic taste
- If your mouth is sore, use oral pain relief rinses as recommended by your physician
- Eat more frequent meals: five to six small meals a day rather than three large meals may be helpful
- Do not drink fluids 30 minutes before a meal or drink excessively during a meal
- Tell family members the foods that you have a taste for during this time
- Select high protein foods such as milk, yogurt, eggs, beans, nuts, and puddings if meats have lost their appeal to you
- Avoid foods that make you nauseous
- Allow others to prepare foods, if you find food preparation takes your appetite away
- Avoid the area of food preparation before eating
- Try eating meats that are cooled to room temperature or refrigerated, instead of hot (reduces the smell that may stimulate nausea)
- Eat snacks that are high in protein or high in carbohydrates between meals: ice cream, puddings, yogurt; use peanut butter on fruit, celery or crackers
- Drink juices instead of soft drinks
- Add dry milk or Ensure to ice cream to make milkshakes
- Plan to get as much exercise as possible; this increases your appetite
- Avoid high fat foods (fried) that often create a feeling of fullness
- Chew foods thoroughly
- Avoid gas forming foods such as cabbage, broccoli, or carbonated liquids such as soft drinks or beer
- Exercise moderately before eating to stimulate appetite
- Get fresh air, loosen tight clothing, and rest after meals

Notify your physician if:

- Vomiting is not controlled in 24 hours
- Diarrhea is not controlled in 24 hours
- You are unable to eat solid foods because of mouth or throat irritation
- Your mouth is constantly dry
- You have constipation that is not relieved with recommended laxatives
- You continue to lose weight because of not being able to eat

Additional recommendations about your diet:



Atrophic Vaginitis

Atrophic (deterioration) vaginitis (inflammation of the vagina) is a condition in which the lining of the vagina becomes thin due to estrogen withdrawal. This condition is normal after menopause if estrogen replacement therapy is not used. Treatment for breast cancer with chemotherapy or anti-hormonal (tamoxifen) therapy causes normal levels of estrogen to greatly decrease, which results in increased thinning of the vaginal tissues. For the breast cancer patient, estrogen replacement therapy is not usually allowed; thus, atrophic vaginitis is a problem.

The cells that line the vagina are dependent on estrogen for their lubrication and elasticity. Without estrogen, the cells change. Sexually active women experience more of the symptoms. This deterioration or thinning of the lining results in dryness of the vagina.

Vaginal dryness causes:

- Vaginal discharge
- Itching
- Painful intercourse
- Spotting after intercourse
- Increased potential for vaginal infections

If you experience any of these symptoms, **report them to your healthcare provider.** Some women experience very mild symptoms that are not worrisome.

Self-management of the symptoms include:

- Eat a diet high in vitamins C and E to promote and repair tissue health.
- Cleanse the area around the anus after each bowel movement to prevent contamination of the vaginal area.
- Use a water-based lubricant liberally before intercourse (Astroglide).
- Purchase an over-the-counter, water-based vaginal lubricating product to be used on a regular basis such as Replens. This acts as a protectant covering to the walls.
- Apply and massage mineral oil into the outside tissues of the vaginal opening several times a week.
- Avoid strong douche or deodorant products.
- Avoid deodorant or scented pads during menstrual period.
- Avoid using tampons.

Additional interventions for vaginitis:



Bladder Infection

A bladder infection is an inflammation (irritation) or infection found in the urinary bladder. The infection is usually caused by bacteria from other parts of the body that enters the bladder through the urethra (opening to the bladder). The bacteria then multiply and cause inflammation and infection.

Signs and symptoms:

- Burning, stinging or pain during urination
- Frequent urge to urinate
- Pain in the abdomen over the bladder
- Low back pain
- Blood in urine (may look pink to a dark color resembling cola)
- Fever
- Bad-smelling urine
- Painful sexual intercourse
- Lack of urinary control (dripping or complete loss of control)

Risks increase with:

- Patient with a low resistance to infection as a result of disease or treatment
- Increased sexual activity which irritates urethra and allows bacteria to enter
- Excessive alcohol consumption
- Wearing poorly ventilated underclothing
- Sitting in bath water that contains bath salts or bubble bath products

- Prolapsed (falling down of) female organs, which put continual pressure on bladder
- Low fluid intake

Preventive measures:

- Drink a minimum of eight 8-ounce glasses of water every day
- Take showers instead of tub baths
- Use a water-soluble lubricant (such as Astroglide® or K-Y Jelly®. Do not use Vaseline; it may increase risk of infections) during intercourse
- Avoid wearing tight-fitting undergarments for long periods of time
- Use cotton-crotch underpants and pantyhose
- Drink a glass of water and empty bladder within 15 minutes after intercourse to clear out any bacteria that may have entered the urethra
- Avoid feminine hygiene sprays or deodorants
- Clean the anal area thoroughly after bowel movements; wipe from the front to the rear to avoid spreading stool in the genital area
- Avoid postponing urge to urinate
- Seek prompt medical treatment for urgency or pain during urination

Complications:

- Infection in the bladder that is not treated can result in a kidney infection and could lead to kidney failure

Treatment:

- Notify physician at first symptom. Diagnostic tests may include urinalysis (study to see what is in your urine) or a urine culture to determine the type of organism causing the infection.
- Treatment is usually with antibiotics taken orally—antibiotics should be completed as ordered, even when symptoms are not present.
- Urinary analgesics for the burning and pain may be ordered by your physician.
- Increase water intake (8 glasses daily) to help clear urinary track.
- Avoid alcohol and limit caffeine intake from coffee or soft drinks during treatment.
- Drink cranberry juice to acidify urine.

Notify Healthcare Provider’s Office:

- If pain or fever increases after the first 24 hours of medication
- If symptoms of urgency to urinate, stinging or pain are still present in one week after medication
- If there is evidence of continued blood in urine
- If new, unexplained symptoms develop

Additional interventions:



Bladder Problems During Chemotherapy

Chemotherapy destroys rapidly dividing cancer cells, but it is also toxic to the cells which line the urinary system. However, these cells will repair themselves when treatment is completed.

The most common problem is called cystitis, an irritation of the lining of the bladder wall.

Symptoms of Cystitis:

- Increased urge to urinate
- Frequent urination
- Burning during urination
- Painful urination
- Inability to completely empty the bladder
- Unusual waking at night to urinate
- Vague aching pain in the lower abdomen
- Blood in the urine

During chemotherapy treatments, you need to urinate when you feel the urge-do not try to hold your urine. Chemotherapy drugs are eliminated through urine for several days after treatment. It is also helpful to increase your fluid intake to at least two quarts a day to increase urination and dilute the concentration of medication in your bladder. You need to empty your bladder on a frequent basis and before you go to bed at night.

Hemorrhagic Cystitis

Hemorrhagic cystitis is the onset of blood in the urine that is accompanied by pain. The

amount can range from light pink urine to bright red blood. Chemotherapy patients can develop this condition immediately following treatment or the onset can be delayed for months. Two chemotherapy drugs, cyclophosphamide (Cytoxan) and ifosfamide, have hemorrhagic cystitis as a potential side effect. If your platelets (clotting factors in blood) are low or if you have had repeated episodes of urinary tract irritation, this increases the potential. Immediately report the condition. It can develop into a serious bleeding problem or into an infection.

Medications Used During Chemotherapy to Prevent or Treat Bladder Irritation:

- Analgesics or pain medication. Some are designed to sooth the urinary track.
- Antibiotics if a urine culture shows signs of infection or as a preventive measure.
- I.V. fluids during drug administration or afterwards if you are unable to drink adequate fluids.
- Mesna is a medication that protects the bladder lining during chemotherapy and is used with some chemotherapy drugs.



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Blood Counts — Understanding Their Importance

During breast cancer treatment your health-care provider will regularly monitor your blood counts by drawing blood from your finger, arm or port (a surgically implanted device). These blood profiles evaluate your response to the effects of chemotherapy, check for infections, and detect changes in your blood chemistry. Chemotherapy works by killing cells that are dividing, thus affecting blood cells that are constantly dividing in order to replenish themselves.

Main blood counts that will be monitored:

- **Red blood cells (RBCs)**—carry the oxygen to all parts of your body and remove carbon dioxide waste products
- **White blood cells (WBCs)**—combat infection and provide immunity
- **Platelets**—determine how your blood will clot
- **Electrolytes**—potassium, magnesium, sodium, chloride, glucose, and carbon dioxide

- **Hemoglobin (iron)**—portion of the red blood cells that attaches to oxygen and carries it to the cells

When you have your blood drawn, remind the technician drawing the sample not to use your surgical arm. Your healthcare provider will share a copy of the results from your blood work-up with you. The results will list the blood component and your present blood

count. Frequently occurring blood components evaluated during chemotherapy treatment include:

Your healthcare provider will study your lab results and adjust your medication accordingly if any blood values are found to be outside of the normal ranges. Your healthcare provider can explain the implications of any abnormal values to you and provide you with a copy of your blood work.

Blood Component	Normal Values:
Red blood cells (RBCs)	4.2-5.4 million/mm ³
White blood cells (WBCs)	5,000 - 10,000/mm ³
Hemoglobin (Hgb)	12 - 16 g/dl
Platelets	150,000 - 400,000/mm ³
Electrolytes	
Sodium	136-145 mEq/L
Potassium	3.5-5.0 mEq/L
Chloride	90-110 mEq/L
Carbon dioxide	23-30 mEq/L
Glucose	60-120 mg/dl
Blood Urea Nitrogen	5-20 mg/dl
Magnesium	1.5-2.5 mg/dl



Blood Count Abnormalities

A regular part of your cancer treatment plan will be an evaluation of your blood by sending a sample to a laboratory to see if the different components are in normal range. Before your treatment begins the physician will draw blood; this provides a test result showing what is normal for you. Blood abnormalities help the physician determine many aspects of your health, including evaluating the impact of the chemotherapy on your normal blood cells. Chemotherapy can cause a decrease in the red blood count (causing anemia and fatigue), white blood count (causing an increased potential for infection) and electrolytes (causing an increase or decrease in chemicals that regulate many body functions). Major electrolytes are calcium, magnesium, potassium and sodium.

Abnormal Blood Counts:

Your healthcare team will keep you informed if they detect any changes that need medical attention. Some changes are expected from chemotherapy and are considered normal while you are undergoing treatment.

Things You Can Do:

- Eat a healthy, balanced diet including a variety of foods.
- Avoid foods with empty calories (sugary drinks) and select drinks and foods high in nutritional value.
- Drink at least two quarts of fluid a day.
- Limit nausea that prevents your intake of fluid or food by taking nausea medication as prescribed.

- Prevent vomiting by taking medication as ordered. If prescribed medication is not controlling nausea and preventing vomiting, report this to your healthcare provider immediately. Nausea can prevent adequate nutritional intake and vomiting can create severe electrolyte changes.
- Report diarrhea if it continues longer than a day, or you have 4 - 5 loose stools a day. Take medication as prescribed by your healthcare provider. Diarrhea can also cause severe electrolyte imbalances.
- Report any overwhelming fatigue, dizziness or fainting. Tell family members to report any changes in level of consciousness (ability to stay awake).
- Report any fever over 100.5. High fevers over a period of time can also cause the body to lose fluid.
- Report any muscle cramping or twitching or numbness of hands or feet.
- Report any fast, pounding or irregular heartbeat.
- Report any increase in blood pressure, if you are aware of it.

After reporting your symptoms, your healthcare provider will evaluate the symptom(s) and your blood test results to see what intervention is most appropriate. The most important thing you can do is to communicate openly with your healthcare provider about what you are experiencing.



Candidiasis of the Skin

Moniliasis or Yeast Infection

Candidiasis of the skin is a yeast infection from overgrowth of the fungus *Candida albicans*. This fungus is normally found in the intestinal tract and vagina. The fungus moves on to the skin and begins to grow, causing irritation of the skin. The infection is most often found in the folds of skin in warm, moist parts of the body such as the groin or under the breasts. It can affect the skin of the vagina, vaginal lips, underarm areas, spaces between the fingers and toes, inner thighs, and the base of the spine.

Candidiasis of the skin is identified by patches of flat areas with the following characteristics:

- Bright red patches with poorly defined borders
- Skin may break and the area weeps fluid
- Skin appears moist and may become crusty
- Itching may become severe
- Occasionally may form small white blisters with pus inside

Risk for Candidiasis of the skin increases with:

- Use of antibiotics
- Use of steroids (prednisone)
- Diabetes

- Obesity
- Excessive sweating
- Immunosuppression from chemotherapy

Preventive measures:

- Avoid a diet high in sugar
- Keep skin dry and clean
- Wear cotton underwear
- If possible, expose irritated areas to sunlight and air
- Wear loose cotton clothing. Avoid synthetic or wool fibers while infected.
- Avoid heat and activities which cause sweating
- Protect skin from injury

Treatments:

- Anti-fungal powders applied to infected areas
- Anti-fungal pills taken by mouth (Diflucan)
- Acidophilus tablets may help prevent recurrence
- Adding yogurt, buttermilk, or sour cream to your diet may also reduce recurrence

Fungus of the skin should be treated as soon as possible. Secondary bacterial infections can occur from the broken skin requiring additional treatment if not treated promptly. Secondary infections can be identified by pain, tenderness in the area, and warmth of tissues.



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Capsular Contracture

Capsular contracture is displacement or disfigurement of a breast implant. This condition occurs when the body's immune system views the implant as foreign tissue. The immune system causes the tissues around the implant to become inflamed. The tissues may then become fibrous and firm. The fibrous tissues compress the implant. This results in distortion or change in shape of the implant, displacement on the chest wall, or pain.

Sometimes, by using his/her hands, the physician can physically break up the fibrous tissue and free the implant (can be uncomfortable or painful). In some cases, this will not release the tissues around the implant and both the implant and the fibrous tissues must be

surgically removed. A new implant can be placed in a new pocket made by the surgeon after removal of the fibrous tissue and old implant. Only the surgeon can determine which procedure is most appropriate (physically breaking up the contracture or surgery).

Capsular contracture is not related to the implant or the surgery, only to the way an individual's body responds to a foreign substance (the implant). It is impossible to determine before surgery whose body will reject the implant and form a fibrous shell causing problems. Women with a history of forming raised, firm scars are at higher risk for capsular contracture.



Cellulitis — Infection of Surgical Arm

Cellulitis is a non-contagious infection of the connective tissues beneath the skin. After breast surgery, the surgical arm is at high risk for cellulitis from the removal of lymph nodes from under the arm or from radiation therapy to the area. The ability of the body to remove lymphatic fluid from the arm is greatly reduced after lymph node removal. This causes the lymphatic fluid to remain in the arm creating swelling. Lymph node removal also increases the risk for bacterial infection if the arm is injured by a small cut, insect bite, burn or animal scratch. The bacteria enter and quickly grow in the accumulated fluid.

Signs and symptoms of cellulitis:

- Sudden tenderness in arm
- Increase in swelling and a feeling of hardness to the skin
- Redness in a small area that spreads rapidly during the first 24 hours
- Generalized feeling of fatigue
- Achy muscles
- Occasionally, a thin red line will be visible under the skin from the site of the injury toward the heart
- Fever occurs after infection progresses
- Chills and sweats may occur

Causes:

- Staphylococcus bacteria
- Streptococcus bacteria

Risk increases with:

- Any injury that breaks or irritates the skin
- Diabetic conditions
- Immunosuppression from chemotherapy
- Skin exposed to radiation treatments

Preventive measures to avoid skin damage:

- Wear protective gloves when doing dishes, working in the garden or using strong chemicals
- Wear long sleeves to prevent sunburn, animal scratches or insect bites
- Wear sunscreen on the affected arm
- Keep arm and hand well lubricated with lotion that does not contain alcohol
- Avoid blood pressure readings, injections, and blood draws on the surgical arm
- Avoid long exposure to strong chlorine in swimming pools
- Wear a thimble when sewing to avoid skin pricks
- Avoid constricting clothing or jewelry on the surgical arm
- Avoid cutting cuticles
- Avoid nail salons using electric files
- Use insect repellent to prevent insect bites
- Keep arm swelling down by elevating arm above the level of the heart whenever increase is noticed
- Avoid activities that require the arms and hands to be positioned at a level lower than the heart for long periods of time



Chemotherapy — Allergic Reaction

Occasionally, people taking chemotherapy will have an allergic reaction, also called hypersensitivity reaction, from a drug. Allergic reactions are difficult to predict because each individual has a different immune response. This individual immune response is our body's way of warning us that our body does not accept this drug.

Allergic reactions from chemotherapy drugs may occur within minutes, especially if the body has been sensitized previously to a similar substance. Common allergic reactions people have are hay fever, asthma, hives, and food allergies. Chemotherapy allergic reactions have similar symptoms with the onset being minutes to days after the drug is given.

Common symptoms of an allergic reaction:

- **Hives** - Hives starts with itchy, raised, red blotches on the body. The center of the red blotches may be lighter in color. Onset may be as long as 36 hours after a drug is given. However, the blotches rarely last more than 24 hours. If this type of reaction occurs once, the second onset of the lesions may occur within minutes.
- **Swelling** - Another reaction is swelling that occurs when fluid in the body leaks into layers of the skin.

This often occurs in the tongue, lips, eyelids and airways. Swelling in the airways causes difficulty breathing and can be deadly if not reported and treated immediately.

- **Flushing** - Flushing is a temporary redness of the face and neck caused by dilation of the blood capillaries. This is very visible and may be accompanied with a generalized feeling of warmth.
- **Rash** - This is the most common type of drug allergic skin reaction. It appears as areas of red, small, flat lesions that may have small raised lesions occurring as a rash on the body. This rash can occur up to weeks after a drug is given but most commonly happens within the first 10 days. The rash usually starts on the trunk and moves to the arms and legs. The rash is usually a bright red, and the skin may feel hot, burning and itchy. A severe type of the rash will eventually blend the small lesions into large areas that will cause peeling or wet to dry open sores. Fever may be present in this condition.

Drug associated with allergic reactions:

The drugs most often associated with allergic reaction for breast cancer are Taxol® (paclitaxel) and Taxotere® (docetaxel). However, any other drug has the potential to cause an allergic reaction.



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Chemotherapy's — Impact on Appetite

Chemotherapy may impact your ability to eat in various ways:

- Poor appetite means that you have no desire to eat, you are not hungry, or food does not have any taste when eaten.
- Early satiety means that you feel full after only eating a small amount of food.
- A food taste change means that during treatment, some foods will taste differently to you.
- Dry mouth occurs when you have a lack of saliva to lubricate food during chewing and swallowing.
- Sore mouth causes difficulty in chewing and swallowing.

Suggestions for Improving Nutritional Intake:

- Eat small meals every two to three hours instead of large heavy meals.
- Eat foods that are high in protein if you are unable to tolerate meat (milk shakes, yogurt cheese, peanut butter, nuts)
- Avoid sugary drinks such as tea or soda and replace with milk, milk shakes and fruit juice.
- Avoid heavy meals of fried foods.
- Avoid gas producing foods such as beans, cabbage, broccoli and carbonated drinks.
- Avoid smelling cooking odors if they increase nausea. Ask family members or friends to take on the task of cooking during this time.

- Prepare, before your next chemotherapy, a variety of foods that refrigerate or freeze well so that you will have them available during acute times of nausea.
- Eat cold meats such as turkey or ham if meat smells increase nausea.
- Cold foods have fewer odors. Allow cooked foods to cool before trying to eat.
- Avoid spicy seasonings that can increase irritation.
- Try a variety of seasoning on foods that may not have taste to you.
- Drink at least two quarts of fluid a day to stay hydrated.
- Suck on hard candy such as lemon drops, chew gum or suck on ice chips to increase saliva and decrease a bad taste in the mouth.
- Avoid mouthwash that contains alcohol. Rinse mouth with equal amounts of baking soda and salt (1/2 - 1 teaspoon) in 8 ounces of water and rinse four or more times a day.
- For extremely dry mouth, ask your health-care provider about artificial saliva to use during times when you are experiencing extreme dry mouth.
- Avoid drinking lots of fluid during a meal.

Being able to eat and drink to maintain your fluid balance and your nutritional status is essential. Do not disregard this as something that is of no importance to your healthcare team. They need your help in monitoring your ability to eat and drink adequately during treatment.

Notify Your Healthcare Provider If You Experience:

- Trouble swallowing food when eaten
- Abdominal pain or burning sensation
- Nausea that prevents you from eating and is not relieved by medication
- Vomiting that causes you to lose food after eating
- Mouth sores
- If you are unable to eat after trying interventions listed above

Special Instructions:



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Chemotherapy — Patient Reminder

During cancer treatment with chemotherapy or radiation therapy, your blood cell counts will be lowered, putting you at a higher risk for infections.

Report any of the following symptoms immediately to your healthcare provider so an appropriate evaluation can be made for treatment.

- **Fever greater than 100.5°F**
- **Chills**
- **Sore throat**
- **Cough with sputum (saliva mixed with mucus) production**
- **Pain or burning when urinating**
- **Redness or discharge from any wound, incision, or sore**
- **Mouth sores**
- **Clear blisters on skin**

(Keep this as a reminder of symptoms to report to your healthcare provider if they occur.)

Call our office at:



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Constipation

Constipation is a condition of the bowel in which the feces are dry and hardened and passage is difficult and infrequent, usually causing pain. Some chemotherapy drugs used to treat breast cancer cause the colon to become less active in movement resulting in constipation.

Suggestions to reduce or prevent constipation:

- Eat more high fiber foods, such as fresh raw fruits, fresh raw vegetables, whole grain cereals, breads and pastas, dried beans and peas, nuts, corn, popcorn, raisins, dates, prunes and prune juice. These foods absorb water and keep the stool soft.
 - Drink lots of fluids, especially water – 3,000 ccs. of fluid a day is recommended (one cup has 250 ccs. of fluid this equals 12 cups a day)
 - Avoid cheese and refined products made with white flour. Increase physical activity; physical activity promotes the movement of stool through the intestines.
 - Drink a warm fluid early in the morning to stimulate the colon.
- Take as recommended a cellulose, bulk-producing product, such as Metamucil, to increase fiber in your diet.
 - Establish a time for elimination that is regular and unrushed.
 - If constipation occurs and the above methods do not give results, consult your physician about a mild laxative or a stool softener to prevent constipation.
 - If you do not have a bowel movement in 72 hours, consult your physician or nurse.

Special Instructions for constipation:



Costochondritis

Costochondritis is inflammation of the cartilage between the sternum and one or more ribs. The inflammation occurs after the patient has been involved in strenuous or repetitive activities that stretch the cartilage. This causes inflammation to set in and the result is pain in the chest area. It is often mistaken for breast pain because of its location on the chest wall. Pain can be differentiated from breast pain if it increases with a deep breath or when raising the arms above the head.

Signs and symptoms of costochondritis:

- Sharp pain in the chest area, on one side
- Pain worsens with movement that stretches the ribs, such as raising the hands above the head
- Tightness in the chest often causing shortness of breath
- Pain when taking a deep breath
- Pain that is elicited when pressure is placed on the sternum

Causes:

- Activities which stress the cartilage such as sports, heavy lifting, or carrying a heavy shoulder bag
- Trauma or a blow to the chest wall
- Upper respiratory infection causing excessive coughing

Preventive Measures:

- Avoid activities that stress, strain, or cause trauma to the rib cage

Treatment:

- Ibuprofen or an anti-inflammatory medication on a regular schedule
- Narcotic pain medication if pain is severe
- Chronic conditions may require steroid injections into the inflamed area
- Rest from activities which stress the rib cage
- Heating pad or ice packs



Cough During Chemotherapy

Coughing is a natural reflex of the body. It is a sudden, noisy release of air from the lungs caused by irritation in the air passage. Coughing is a sign that the body is trying to clear the airways of something or that something is irritating to the airways. Because there is an increased potential for infections during chemotherapy, a cough should be reported for evaluation by your healthcare team.

Coughs may be caused by:

- **Allergies** - Something in the air around you that you are breathing or a reaction to a food or medicine can cause you to cough. Usually with the allergic cough, you will also have a runny nose or red, itchy eyes. The irritation from the offending substance can cause mucus to form in your sinus cavities. The mucus can drip down your throat and cause a tickling that stimulates a cough. When the irritating substance is removed, the cough clears up.
- **Common Cold Virus or Infection** - Coughing is also present with the common cold and is also present if a bacterial infection develops. This is usually accompanied with fever, a runny/stuffy nose and phlegm that starts as clear discharge but may turn to green/yellow mucus if infection develops. The cough may continue for weeks, but it eventually clears up.
- **Tumors** - Tumors in the lungs, airways or lymph nodes near the lungs can cause a chronic cough.
- **Gastric Reflux or Heartburn** - This cough is aggravated by certain foods that are irritating and cause a backup of leakage from the stomach into the esophagus that causes a cough. This condition may increase when lying down flat after a meal.
- **Chemotherapy** - Chemotherapy drugs vary in side effects in different people. Some people may have an irritating cough that has allergy symptoms. It may be a dry cough, or you may have symptoms of clear mucus and phlegm.

Medications for Allergy Cough:

You may have an over-the-counter medication recommended to control allergy symptoms or a prescription may be given. Allergy sufferers are often prescribed Zyrtec®, Claritin®, or Allegra® for symptoms. If you have allergies, avoid irritating substances such as dust or cigarette smoke.

Medications for Gastric Reflux or Heartburn Cough:

For gastric reflux- and heartburn-stimulated cough, you need to avoid foods that aggravate your symptoms such as caffeine or spicy foods. Over-the-counter medications such as Maalox®, Mylanta®, Roloids®, or Tums® may be helpful. Over-the-counter medications that decrease gastric acid production, such as Tagamet®, Pepcid®, or Zantac®, may be helpful as well and may be recommended by your healthcare provider. Another class of drugs stops the enzyme pump process and is recommended for short-term use only. Examples include Nexium®, Prevacid®, Prilosec®, Protonix® or Aciphex®.

Medications for Infections:

For coughs caused by infection of the airways, an antibiotic will be prescribed. It is important to take the medication as directed and to complete the entire course even if you feel better.

Cough Medication Types:

1. Antitussive medications suppress your cough and can be non-narcotic or narcotic. Over-the-counter cough syrups have the ingredient dextromethrophan, which is found in many formulas. Brand names are Benylin DM®, Novahistine DM®, and Pertussin®.
2. Narcotic formulas such as Hycodan® require a prescription. This is a narcotic antitussive (anti-cough medication), which will help relieve your cough.
3. Decongestant formulas contain pseudoephedrine that is a generic ingredient of various cough preparations.
4. Antihistamine formulas contain ingredients that decrease allergy symptoms and are similar to Benadryl®.

Reporting Your Cough to Your Healthcare Team:

Any cough should be reported to your healthcare provider during chemotherapy treatment. They will evaluate your symptoms and make recommendations for decreasing or treating the cough.

When reporting a cough:

- Describe your cough (dry, coughing up phlegm and the color)
- When the cough started
- When do you cough (all the time, at night after lying down, etc.)
- If you have other symptoms such as fever, runny nose, swollen eyes, pain in the chest
- If you are short of breath
- If you have coughed up blood tinged phlegm
- If you have fever or chills
- What you have done to treat your cough



Dehydration During Chemotherapy

Dehydration is the loss of body fluids necessary for optimal function of the body. It occurs when the output of body fluids exceeds the intake of fluids. A person can live a long time without eating but can live only a short time without adequate fluids.

What Causes Dehydration?:

- Nausea that prevents drinking or eating
- Vomiting, which is a direct loss of body fluids
- Diarrhea, which is loss of body fluids from excessive bowel movements
- Fever, which causes the body fluids to be lost at a more rapid rate
- Bleeding, which causes a loss of blood
- Not drinking enough fluids to maintain the needed level for adequate hydration
- Overuse of diuretics or laxatives

Dehydration causes electrolytes, such as sodium (salt) and potassium, to become too high or low and cause changes that can be life-threatening if not corrected. One of the first symptoms caused by electrolyte imbalance from dehydration is fatigue. Many people suffer fatigue from simply not drinking enough fluid. This can progress to confusion and disorientation and can eventually lead to unconsciousness if the body fluid is not replaced. Because dehydration can be a serious problem, it is important to report to your healthcare provider any inability to eat

or drink, frequent vomiting or episodes of diarrhea.

Signs and Symptoms of Dehydration:

- Dry mucous membranes (dry mouth)
- If you slightly pinch your skin, it stands up like a tent when you take away the pressure
- Mucus secretions are thick
- Fatigue
- Headache
- Low urine output

Treating Dehydration:

- The best treatment is prevention. Drink two quarts of water (8 glasses) a day. Don't wait until you are thirsty; drink frequently. Have a bottle of water that you carry with you.
- If you are nauseated, take nausea medication as ordered and try sipping on fluids. Popsicles or crushed ice are good substitutes when you are nauseated and you can't drink.
- If you vomit, take your nausea medication. If this does not control the vomiting, contact your healthcare provider for additional interventions. Keep a record of how many times you vomit and report this when calling. (Four to five episodes a day can put a person at high risk for dehydration.)

- If you have diarrhea, take medications as ordered and take steps to control your diarrhea as recommended by your health-care provider. Keep a record of how many loose stools you have a day. (Four to six loose stools a day can put a person at high risk for dehydration.)

Dehydration can be the start of a serious problem. Take steps to stay well hydrated, and if you are unable to keep fluids down, or you are losing fluids, call your healthcare provider.



Diarrhea

Diarrhea is the frequent passage of stools that have a liquid consistency, with or without discomfort. Chemotherapy destroys the rapidly dividing cells that line the intestines, often resulting in diarrhea. The degree and duration of diarrhea depends on the drug, the length of time the drug is given, and the amount of the drug given. Diarrhea can also occur from increased stress, milk product intolerance, or a bowel impaction from hard stool accumulation. If the diarrhea persists more than 24 hours, it will be necessary to determine the cause. Notify your healthcare provider if your diarrhea lasts longer than 24 hours and is not controlled with over-the-counter diarrhea medication.

Suggestions to reduce or stop incidents of diarrhea:

Eat a low-residue diet, high in protein and calories such as:

- cottage cheese, cream cheese, eggs (not fried), boiled lowfat milk, yogurt, and buttermilk
- broth, bouillon, and consommé
- fish, chicken, or ground beef that is baked, broiled, or roasted until tender
- rice, pudding, custards, and cooked cereals such as cream of wheat or rice
- bananas, applesauce, peeled apples (apples contain pectin, an antidiarrhea agent), apple juice, grape juice
- white bread, toast, or crackers made with refined flour
- macaroni, noodles, and white rice
- baked, boiled, or mashed potatoes
- smooth peanut butter
- cream soups

Avoid foods that irritate or stimulate your intestinal tract:

- whole grain breads or cereals
- nuts, seeds, coconut
- fried, greasy foods
- fresh fruits other than those listed above
- raw vegetables
- rich desserts
- popcorn, potato chips, pretzels
- strong spices and seasonings such as chili powder, licorice, pepper, curry, garlic, horseradish
- olives, pickles, relishes
- gas-forming foods such as broccoli, onions, and cabbage
- caffeine containing products such as coffee, soft drinks, and chocolate
- alcoholic beverages
- tobacco products



Esophagitis — Inflammation of the Esophagus

Esophagitis is inflammation of the esophagus (area from back of mouth to stomach), usually caused by chemotherapy or radiation therapy. The lining of the mouth, throat, and the entire gastric tract may experience ulceration (irritation), hemorrhage (bleeding), and secondary infection as a side effect of treatment. Pain and difficulty swallowing make it hard to eat and drink. Esophagitis, resulting from treatment, is self-limiting and will improve when treatment is completed. Other causes of esophagitis are dehydration and protein malnutrition.

Early signs of esophagitis:

- A feeling as if there is a lump in your throat when swallowing
- Dry, scratchy throat
- Problems swallowing solid or dry foods
- Pain when swallowing

To minimize esophagitis, AVOID:

- Foods that are very hot or cold
- Spicy or acidic foods
- Hard and dry foods
- Alcohol and tobacco products
- Alcohol-based mouth washes
- Caffeine beverages and chocolate beverages
- Carbonated beverages
- Acidic fruit juices, such as orange

To promote comfort and healing:

- Choose foods that are eaten at room temperature.
- Choose foods that are soft and moist.
- Add liquids such as gravy, cream sauces, and mild salad dressing to foods.
- Cut food into small pieces.
- Use blender to puree foods.
- Drink at least eight 8-ounce glasses of fluid daily.
- Eat a diet high in protein; add milk and milk products, such as yogurt and sour cream.
- If severe, use liquid supplements such as Ensure[®], Carnation Instant Breakfast[®] or Isocal[®].
- Use antacids every three to four hours to decrease heartburn.
- Use topical analgesics prescribed by your physician, such as Viscous Xylocaine[®] to deaden the area prior to eating or drinking.
- Use systemic analgesics such as liquid Tylenol[®] as prescribed to control pain.
- Practice good oral hygiene. Cleanse mouth after eating; gargle a solution of baking soda and water (1 teaspoon in 2 cups of water), or a mixture of salt (1/2 teaspoon) plus baking soda (1 teaspoon) and water (4 cups).
- Use any medication prescribed by your physician as ordered.

It is very important to maintain adequate nutrition during periods of esophagitis. Contact your clinic for a referral to a nutritionist if you need assistance in finding foods you can eat.

Contact your healthcare provider if:

- Unable to maintain adequate nutrition
- Unable to control pain
- Spitting up blood
- Coughing up blood
- Fever greater than 100.5° F

Special instructions for esophagitis:



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Extravasation

Extravasation occurs when the chemotherapy drug given in your vein leaks into the tissues surrounding the vein. Even though your nurse takes many precautions to assure extravasation does not happen, the vein may have been previously damaged when receiving chemo-therapy causing it to become weak and leak the chemotherapy drug into the tissues. Damage may be due to small veins in the arm and the inability to see the complete vein. Extravasation causes pain and burning. Your nurse will treat the extravasation according to the type of drug given and the cancer center or clinic's treatment policy.

Your healthcare providers will carefully observe the area over the next 24 hours and the following weeks to effectively treat and prevent any complications. You may notice warmth or swelling in the area and there may be some pain. Carefully observe the site for changes and immediately report any changes to your healthcare provider.

Report the following symptoms to your nurse:

- Increase of pain in the area
- Increase in swelling and redness after the first 24 hour period
- Any blisters which form in the area
- The rupture of blisters or the appearance of an open wound
- Any signs of an infection (yellow or greenish-yellow drainage)

If you have any questions, call your health-care provider. The nurse who will be managing this will be:

Thank you for your cooperation in helping to manage this complication during your treatment.

Specific instructions for extravasation:



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Fatigue Management

Fatigue is a feeling of lack of energy, weariness or weakness. It is associated with a desire for rest or sleep. Fatigue may also be accompanied by irritability, tearfulness, decreased ability to make decisions, withdrawal, apathy, feelings of hopelessness and helplessness, impaired concentration, increased insomnia or sleepiness, and loss of appetite.

Major causes of fatigue are a result of:

- Illness (flu, colds, viruses, etc.)
- Anemia (low hemoglobin)
- Metabolic imbalance
- Malnutrition
- Disruption of patterns of rest and sleep
- High levels of stress
- Immobility and sensory deprivation
- Depression
- Treatment of cancer with chemotherapy or radiation therapy

If you experience chronic fatigue and do not know the cause, consult a healthcare provider to identify and treat the problem. Chemotherapy or radiation therapy for breast cancer treatment commonly causes fatigue and will disappear when treatments are completed. This fatigue has nothing to do with your cancer but is associated with the treatments.

Management of fatigue during treatment includes:

- Rest as often as needed; a nap during the day may be helpful; going to bed earlier or sleeping later may also give the extra rest needed.
- Pace your activities and do not plan to accomplish more than your energy reserves allow to prevent exhaustion.
- Try to keep a regular schedule for rest, meals and activities.
- Plan some form of exercise. Walking is an excellent choice; it may only be for a short distance but this is necessary since exercise has been proven to increase energy.
- Seek assistance with household chores or activities such as meal preparation or childcare.
- Watch your diet carefully to ensure maximum nutritional intake. Eat foods that are high in protein; avoid empty calories found in soft drinks and many sugary snack foods.
- Drink adequate amounts of fluids. Avoid caffeine and alcoholic beverages; drink lots of juices.
- Ask your healthcare provider about vitamin supplements.
- If you are unable to eat solid food, try dietary protein supplement products such as Ensure®.



Fecal Impaction

Fecal impaction is the accumulation of hard stool in the lower bowel caused by constipation. The stool becomes so hard that it cannot be passed during a normal bowel movement.

Signs and symptoms:

- Severe constipation, absence of bowel movements
- Sense of fullness in the rectum, but inability to pass stool
- Possible loss of urinary control
- A firm mass that can be felt in abdomen
- Pain or cramps
- Thin watery discharge from rectum (unlike most diarrhea, it will be more of a leaking of watery stool because it is coming from above the blockage)
- Possible loss of appetite and weakness

Causes:

- Absence of normal bowel movements, constipation
- Pain from hemorrhoids or anal fissure which make bowel movements painful
- Barium, swallowed for x-rays of the colon, that is not expelled
- Loss of nerve supply to the colon
- Insufficient fiber and liquid in the diet

Risks increase with:

- Bed rest for any condition

- Decreased fluid and fiber intake
- Stress
- Chronic or long-term use of laxatives
- Medications for pain, anti-Parkinson drugs, atropine, tricyclic antidepressants, or tranquilizers
- Some chemotherapy drugs

Preventive Measures:

- If confined to bed, drink extra fluids and increase amount of fiber in diet.
- If constipation develops, use a mild laxative or stool softener.
- Set aside a regular time each day for a bowel movement and do not hurry. One hour after breakfast is best.

Treatment:

- A fecal impaction is diagnosed when the healthcare provider feels the hard stool with his finger during a rectal exam.
- A series of enemas are given to soften and permit passage of the hardened stool
- If the series of enemas does not loosen the impaction, a healthcare provider must manually remove the stool from the rectum.
- Stool softeners may be recommended after the removal of an impaction.
- An increased amount of exercise to promote bowel movements is recommended if you can walk without difficulty.

- Diet should be high in fiber (fruits, vegetables, cereals).
- Drink eight 8-ounce glasses of water a day.

Notify healthcare provider if:

- You have signs or symptoms of a fecal impaction.
- Any bleeding from the rectal area is observed.
- Any pain in the rectum occurs and lasts for longer than several hours.
- Signs and symptoms of impaction reappear after treatment.

Additional instructions:



Fever During Treatment

Fever is an abnormally high body temperature. Average body temperature is approximately 98.6 degrees. When body temperature raises three degrees above this baseline, this is a sign that the body is responding to an infection. Infections during chemotherapy treatment need to be reported to your healthcare provider for evaluation. Elevated temperature may be an expected response to some types of drugs used for cancer treatment.

Increased Potential for Infection

- Chemotherapy treatments (especially at the time when your white blood count falls to its lowest; your healthcare provider will tell you when)
- IV port or line in place
- Recent surgery
- A cut or break in the skin that has not healed
- Mouth sores from chemotherapy

Signs and Symptoms of Infection:

- Fever over 101.5 degrees
- Redness or swelling in an area that is tender when touched
- Pain
- Discharge of pus (pale yellow, thick discharge)
- Cough that produces phlegm that is yellow/green in color
- Pain or frequent urination

- Blood in the urine
- Abdominal pain
- **WARNING:** When the blood count is very low (neutropenia), fever and the ability to produce pus as a sign of infection may be absent in presence of an infection. Pain and tenderness may be the only sign of infection.

Lab Tests

Complete Blood Count (CBC)

CBC is a study of the blood to look for a low white blood cell count that puts one at higher risk for infection. It also looks to see if the white blood count is elevated from infection and is the cause of the fever.

Cultures

Cultures determine the source of what is causing the infection. Cultures may be taken from:

- Blood
- Urine
- Body discharges
- IV port/catheter
- Throat
- Stool, if chronic diarrhea

Notify Your Healthcare Provider:

- Fever 100.5 degrees or higher (Report when fever started and the highest level it has reached)
- Shaking chills
- Any signs and symptoms of infections as listed above
- Be prepared to tell the names of your chemotherapy drugs, the date of your last treatment, and if you have an implanted port or IV line.



Frozen Shoulder — Adhesive Capsulitis

Frozen shoulder is pain and stiffness in the shoulder joint preventing use of the arm. The term “frozen” relates to the inability to move the shoulder without pain rather than to the temperature of the shoulder.

After breast cancer surgery, it is possible to experience a frozen shoulder if the range of motion is not restored to the surgical arm with proper exercise and arm use. Adhesions (constricting bands of tissue) may form after surgery if the arm is not used in seven to ten days. Adhesions decrease the ability to move and, if not exercised in spite of the limitations, will increase to the point where the shoulder cannot be moved without pain.

Signs and symptoms:

- Stiffness in the shoulder area when the arm is moved
- Pain in the shoulder when the arm is moved
- Feeling of grating or cracking during arm movements in the area of the shoulder
- Pain that radiates to the arm or to the neck
- Inability to move shoulder
- Intolerable shoulder pain during movement

Preventive measures:

- Begin arm range of motion exercises when physician gives permission.
- Do the exercises on a regular basis several times a day.
- Begin to use the surgical arm in daily activities. Resist the urge to become “one-armed” after surgery.
- Join an exercise group or consult a physical therapist if you are unsure you are doing the exercises correctly.

Medical intervention:

- Diagnostic tests that may include x-rays or MRI of the shoulder.
- Treatment may involve manipulation of the shoulder to break up adhesions in the area. This may be done in a clinic or hospital under anesthesia.
- Wearing a sling between treatment sessions may help the pain.
- Heat applied to the area may reduce pain for some, others feel that ice may relieve more pain; ask your healthcare provider which method is preferred.
- Surgery may be necessary in some cases to remove adhesions or repair the capsule of the shoulder.
- Medications may be prescribed for symptoms of pain.

Medications:

- Non-steroidal anti-inflammatory drugs such as ibuprofen (Advil®, Motrin®) may be taken to relieve pain. Use the medication before attempting range of motion exercises.
- Injections of cortisone and local anesthesia into the shoulder joint to reduce inflammation and relieve pain.
- Pain medications ordered by physician.

Activity:

- Physical therapy may be required at this point in treatment.
- Resume normal activities as soon as possible.

Notify Physician If:

- You are unable to move your arm or do the range of motion exercises given after your surgery for breast cancer.
- Pain increases in the area.

Additional instructions:



Future Fertility After Treatment

"Will I be able to have children after cancer treatment?" is a common question young women ask about treatment. Often they feel that asking questions about future fertility is not as important as seeking treatment for their cancer. However, both are important. Seeking information about future fertility is something you need to know about if you would like to have children after treatment.

Impact on Fertility from Cancer Treatments:

Surgery

Breast cancer surgery causes no change in your future fertility. If you are premenopausal, you may find that from the stress of surgery you may miss a period. This is not uncommon. When the stress is over, your normal state of fertility will return. Breast surgery has no future impact.

Radiation Therapy

If your surgery is followed by radiation therapy to the breast area, the stress of treatment may temporarily alter your fertility, but there is no future impact.

Chemotherapy

Chemotherapy is the main cause of future infertility. Chemotherapy drugs change the hormonal balance of the body, causing the majority of women to experience some menopausal symptoms during treatment. If a woman completely stops her menstrual period during treatment, she may or may not have it return. The nearer a woman is to

menopause, the more likely she is to not have her fertility return after treatment. The younger a woman is at treatment, the greater the chance that her ability to conceive and carry a child will return. However, it is difficult for a physician to accurately predict which patient will have their fertility return. Age, the drugs selected, the length of time the drugs are given and the general health of a woman are all factors affecting the return of fertility.

Drugs that May Cause Infertility:

- cyclophosphamide
- 5-fluorouracil
- methotrexate
- doxorubicin

Present Options:

- Egg banking is a procedure in the early stages of development. Eggs can be harvested and frozen for future fertilization. The ovaries are stimulated to release more than one mature egg at ovulation by giving a drug like tamoxifen (the same drug that is given after breast cancer). The released eggs are retrieved by a physician and frozen. Usually it takes two cycles to retrieve approximately four eggs. The eggs can be fertilized at a later time and then implanted. At the present time, the success rate of egg banking is low, but it is an option for women without a selected sperm donor.

Embryo Freezing

Another procedure that is more successful is embryo (fertilized egg) freezing. The same drug stimulation uses tamoxifen to produce and release more than one mature egg at an ovulation. A physician retrieves the eggs and performs a fertilization procedure with sperm from a donor. Then the fertilized egg (embryo) is frozen for future implantation. The success rate is still not high, but is an option for women who desire children in the future.

Other Options

Other options are adoption and using a surrogate mother.

Questions for your Physician about Fertility before Treatment:

- What impact do you think the chemotherapy will have on my ability to conceive in the future?
- Do I have time to consult with a fertility specialist to discuss my options?
- Do you have a recommendation for the name of a fertility specialist?
- What time frame do I have to seek this consultation before I start treatment for my cancer?



Gastritis — Stomach Irritation

Gastritis is irritation of the stomach. The irritation may be chronic (occurring often) or acute (occurring suddenly). Gastritis may result in a gastric ulcer if not treated.

Signs and symptoms:

- Burning sensation in the stomach
- Dull, annoying pain in the chest
- Abdominal pain and cramps
- Swollen abdomen
- Acid taste in the mouth
- Belching or gas
- Weakness
- Appetite loss
- Possible low-grade fever
- Vomiting (occasionally)
- Black, tarry stools (due to bleeding)

Causes:

- Excessive stomach acid caused by stress, alcohol, excessive caffeine, smoking, eating foods not easily digestible that are fatty or spicy, and some medications
- Bacterial infection (*Helicobacter pylori*)
- Viral infection (usually contagious and acute with vomiting)

Risks increase with:

- Increased stress
- Surgery
- Chemotherapy
- Radiation Therapy
- Use of drugs such as aspirin, non-steroidal anti-inflammatory medications (Motrin®, Advil®, etc.), cortisone, some antibiotics and other drugs.

Preventive measures:

- Do not drink alcoholic beverages.
- Eat moderately.
- Don't skip meals.
- Avoid foods you find hard to digest (fatty or spicy).
- Don't smoke.
- Avoid medications that upset your stomach, if possible.



Hives — Urticaria

Hives are an allergic disorder characterized by a skin rash with raised areas that itch and are red. They can occur anywhere on the skin, but often start on the trunk of the body. Hives are the body's immune system reaction to a substance that it perceives as foreign. The body releases histamines to combat the "foreign" substance resulting in hives.

Frequent signs and symptoms:

- Itchy, small, red bumps on the skin
- Bumps swell and produce enlarged pink to red areas, called wheals
- Wheals join together and form larger areas of raised, skin-colored lesions called plaques
- Wheals and plaques can change shape and fade in minutes or hours
- Swollen lips
- Shortness of breath
- Wheezing
- Tight or constricted feeling in the throat
- Sudden onset of nausea accompanying the rash

Cause is from release of body histamines caused by:

- Medications
- Insect bites
- Cancer, especially leukemia
- Animal allergies

- Some foods (especially eggs, fish, nuts)
- Infections (bacterial, viral, or fungal)
- Blood product transfusions
- Iodine x-ray dye
- Pollen, dust, mold

Preventive measures:

- If you have hives, try to identify the source and avoid it in the future.
- Learn the names of medications or other products that cause hives and make this information available to your family and medical professionals when receiving care.
- Keep an anaphylaxis kit (recommended by physicians, contains the drug epinephrine) if you experience severe reactions. Learn how to inject your own medication in case of an emergency.

Treatment:

- Hives can be life-threatening and require emergency care; a physician or medical professional should be contacted immediately.
- Antihistamines are given to reduce the allergenic reaction.
- Cool, moist compresses may be applied to skin rash.
- Epinephrine may be given by injection for severe cases.



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Hot Flashes

Hot flashes are sensations of increased body temperature. A vague sensation that the flash is about to occur usually precedes a feeling of increased body heat. A hot flash usually begins in one region of the body and spreads quickly. A sudden wave of warmth in the face, neck, and chest occurs. The hot flash usually lasts from a minute to several minutes. Researchers attribute hot flashes to irregular expansion and contraction of the small blood vessels of the skin, producing perspiration and blushing. Hot flashes are usually caused by a lack of estrogen.

The sensation from a hot flash is unexpected and can be very bothersome. However, most women will notice a pattern in the time of day when their hot flashes tend to occur. Nearly 90 percent of women going through menopause experience hot flashes. Women treated for breast cancer with chemotherapy medication or anti-hormonal medication Tamoxifen may also have symptoms of hot flashes.

Menopausal women may have their symptoms treated with estrogen replacement therapy. However, most breast cancer patients are not given estrogen replacement therapy until several years after their surgery. These women have to learn to cope with symptoms without help from hormonal medication. The best management technique is to control body temperature and the immediate environment. Hot flashes can be associated with nausea, dizziness,

headache, irregular heartbeat pattern, and sweating. **Hot flashes are not a disease, even though they may feel that way.**

Suggestions to cope with hot flashes:

- Notice a time or pattern for your hot flashes. Expecting them can give you some sense of control.
- Dress in light, layered clothing so that outer garments can be removed during a hot flash.
- Avoid hot environments, if possible.
- Drink cold liquids; avoid hot drinks.
- Sleep in a cool room; have bed coverings that can be quickly removed.
- Turn on an electric fan.
- Avoid highly seasoned foods.
- Avoid large amounts of caffeine products (coffee, tea, soft drinks).
- Avoid alcohol products.
- Avoid stressful situations that can stimulate you emotionally.
- Avoid activities that can increase body temperature such as hot baths, saunas, and sunbathing.
- Learn mental visualization techniques that can reduce the intensity of the sensation.

It is important to report the extent of your hot flashes to your healthcare provider. Medications are available by prescription to reduce the vasomotor (nerves controlling muscles of the blood vessel walls) response that causes hot flashes. Some women respond favorably to the medications while others report no response. Vitamin E supplements have been shown to decrease hot flashes for some women. Antidepressant drugs called selective serotonin reuptake inhibitors (SSRIs) have been found effective for the treatment of hot flashes for some women. Talk to your healthcare provider about medications and supplements to help control your hot flashes.

Additional suggestions for hot flashes:



Hypercalcemia — Elevated Blood Calcium

Calcium is a mineral in the blood, along with sodium and potassium, that maintains the normal rhythm of the heart, regulates the body's water balance, and is responsible for muscle contractions, nerve impulses and other functions of the body. Your doctor checks your calcium levels by drawing a blood sample for "chemistry" or "electrolytes" analysis. Hormonal changes or many of the prescribed medications used for cancer treatment can create an imbalance of calcium in the blood. Hypercalcemia is elevation of calcium levels in the blood.

Hypercalcemia may occur when cancer has spread to the bones, causing calcium to be released into the blood. In addition, breast cancer may cause certain hormones to be released into the body that control calcium levels in the blood. Elevated blood levels of calcium are not caused by your diet, but are effects of your cancer or cancer treatment. The condition causes muscle weakness and leaches calcium out of bones, making them vulnerable to fractures. Acute hypercalcemia can even cause cardiac arrhythmia (irregular heart rhythm) and kidney failure. The symptoms may gradually appear or they may happen suddenly. Symptoms vary according to the levels of calcium in your blood. They are often difficult to distinguish from some of the side effects of chemotherapy.

Calcium Lab Blood Levels:

(norms may vary slightly in different labs)

Normal	8.5 - 11 mEq/liter
Low (Hypocalcemia)	Below 8.5 mEq/liter
Moderate High (Hypercalcemia)	12 - 14 mEq/liter
Severe High (Hypercalcemia)	Above 14 mEq/liter

Hypercalcemia may present with a combination of various symptoms:

- Lethargy (extreme feeling of sluggishness)
- Excessive sleepiness
- Loss of appetite
- Depression
- Nausea and vomiting
- Extreme muscle weakness
- Stomach pain
- Constipation
- Blockage of bowels (late stage)
- Excessive thirst
- Dry mouth
- Frequent urination
- Irregular heartbeat
- Low pulse rate
- Elevated blood pressure
- Mental confusion, sudden onset of forgetfulness
- Extreme conditions: coma or seizures



Hyperkalemia — Elevated Potassium Levels

Potassium is a mineral in the blood, along with sodium and calcium, that maintains the normal rhythm of the heart, regulates the body's water balance, and is responsible for muscle contractions, nerve impulses, and other functions of the body. Your healthcare provider checks your potassium levels by drawing a blood sample for "chemistry" or "electrolytes" analysis. Cancer treatment medications and conditions resulting from cancer can create an imbalance of potassium in the blood. A high level of potassium is called hyperkalemia. Hyperkalemia can complicate cancer treatment and cause serious medical problems if not treated promptly.

Potassium Lab Blood Levels:

Normal	3.5 - 5 mEq/liter
Low (hypokalemia)	below 3.5 mEq/liter
High (hyperkalemia)	above 5 mEq/liter

Frequent signs and symptoms of high potassium levels:

- Extreme weakness
- Muscle spasms
- Numbness and tingling in hands, feet
- Paralysis if condition is prolonged
- Rapid, irregular heartbeat
- Occasionally a slow heartbeat
- Nausea

- Diarrhea
- Abdominal cramping
- Reduced urine output; severe, no urine output
- Change in mental status

Possible causes:

- Medication containing potassium supplements
- Potassium sparing diuretics
- Burns or crushing injuries
- Chronic kidney disease
- Side effects from treatment with chemotherapy medications
- Blood transfusions from stored blood

Preventive measures:

- While on medication containing potassium or chemotherapy treatments, keep all scheduled appointments for blood work to monitor levels.
- Inquire about immediate donor blood for transfusions.



Hypernatremia — Elevated Sodium Levels

Sodium (salt) is a mineral in the blood, along with potassium and calcium, that maintains the normal rhythm of the heart, regulates the body's water balance, and is responsible for muscle contractions, nerve impulses, and other functions of the body. Your healthcare provider checks your sodium levels by drawing a blood sample for "chemistry" or "electrolytes" analysis. Many cancer medications and conditions resulting from cancer can create an imbalance of sodium in the blood. A high level of blood sodium is called hypernatremia. Elevated levels of sodium can complicate cancer treatment and cause serious medical conditions if not treated promptly.

Sodium Lab Blood Levels:

Normal	135 - 145 mEq/liter
Low (Hyponatremia)	below 135 mEq/liter
High (Hypernatremia)	above 145 mEq/liter

Signs & symptoms of high sodium levels:

- Confusion
- Nervousness
- Restlessness
- Agitation
- Elevated blood pressure
- Increased pulse rate

- Intense thirst with dry, sticky mouth
- Tissue swelling (edema) causing firm, rubbery skin
- Decreased urine output
- Shortness of breath
- Flushed, dry skin
- If severe, convulsions

Possible causes:

- Inability to drink fluids
- Severe vomiting or diarrhea
- Cortisone drugs
- Excessive intake of sodium
- Kidney disease
- Tube feeding of only high protein formula

Diagnosis:

- Complete blood workup
- Elevated sodium levels
- Urine specimen studies

Treatment:

- Fluids: water and IV fluids
- Restricted sodium diet: do not add salt to foods when preparing or eating
- Treatment of the underlying cause or condition
- Diuretic medications
- Avoid foods containing large amounts of sodium: sauces, salted snacks, chips and nuts
- Severe imbalance may require hospitalization

Special instructions on hypernatremia:



Hyperventilation — Panic Attack

Panic attacks begin when one feels overwhelmed by fear of a future situation or is in a fearful situation and responds by breathing rapidly or **hyperventilating**. Hyperventilation occurs when a person breathes more rapidly than normal. Carbon dioxide is exhaled in greater amounts causing the levels in the blood to decrease; thus creating an imbalance between oxygen and carbon dioxide. The imbalance changes the acid balance in the blood and affects the heart. This effect on the heart may cause one to feel as if she may faint or have a heart attack.

Cancer diagnosis and treatment may create new anxieties that cause great concern for patients. Often, these concerns are a result of fears and questions that have not been clearly explained. Understanding how hyperventilation affects the body allows a patient to stop or control an impending attack.

Signs and symptoms of a panic attack:

- Numbness and tingling around the mouth, hands and feet
- Sudden weakness
- Uncontrollable panic
- Uncontrolled muscle spasms in the hands and feet
- Tightness in the chest with or without chest pains (feels like a heart attack)
- Dizziness or lightheadedness
- Feeling faint or fainting

The symptoms of a panic attack, which starts with hyperventilation, are very frightening. Attacks usually last for several minutes but sometimes may continue for hours. Even though the attack is frightening, **no physical harm** is done to the body. The harm is the distress and often the embarrassment it causes the person.

Prevention:

To prevent a panic attack from occurring requires **gaining control**. For breast cancer patients that means learning about the disease and what to expect during treatments. Talk to your healthcare providers about your concerns and your fears. Ask questions to clarify issues that you find fearful or confusing. Talk to a peer who has experienced what you are going through or to a patient educator with a specialty in cancer. Counseling or psychotherapy by a trained professional may help you understand what you can do if you experience panic attacks.

Relaxation exercises

Relaxation exercises including such practices as meditation, yoga, and cognitive therapy can reduce anxiety by decreasing tension in the muscles. Find what works for you and practice relaxing each day for a period of time. A simple exercise is to:

- Find a quiet place.
- Sit in a comfortable position while closing your eyes and relaxing all of your muscles.
- Concentrate on your breathing.
- Take in a very deep breath.
- Exhale slowly while repeating a word that brings a sense of peace or safety (peace, love, spiritual phrases or names, etc.) or visualizing an image (sea shore, park, garden, mountains, etc.)
- Keep your focus on your breathing and the repeated phrase or image; if your mind wanders, simply return to your breathing and the repeated phrase or image.
- Continue this relaxation response for 15 to 20 minutes, if possible.
- Slowly open your eyes and readjust to your surroundings.

This exercise can also be practiced with your eyes open if you are in a situation where it is uncomfortable or inappropriate to close your eyes, such as getting an injection or waiting on a physician.

When a panic attack starts:

- Cover your mouth and nose completely with a paper bag. Breathe slowly into the bag and rebreathe the air. The air in the bag contains carbon dioxide. Breathe slowly in and out of the bag for one to three minutes. Re-breathing the carbon dioxide in the bag helps balance the oxygen and carbon dioxide ratio in the body.

- Try breathing without the bag. One breath every six seconds is a normal rate.
- Repeat breathing into the bag until the symptoms disappear.
- Carry a paper bag with you. When you feel an attack coming on, find a private place and breathe into the bag.
- Don't smoke; nicotine is a stimulant.
- Keep caffeine intake down (cokes, tea, coffee, chocolate, and medications containing caffeine are stimulants).
- Exercise on a regular basis to reduce generalized anxiety.

Notify your healthcare provider if a panic attack is accompanied by an irregular heart-beat. If panic attacks continue, seek the help of a professional counselor. Panic attacks are agonizing and stressful. Talk to your healthcare provider for more recommendations on dealing with panic attacks.

Additional instructions on panic attacks:



Hypocalcemia — Decreased Calcium Levels

Calcium is a mineral in the blood, along with sodium and potassium, that maintains the normal rhythm of the heart, regulates the body's water balance, and is responsible for muscle contractions, nerve impulses, and other functions of the body. Your healthcare provider checks your calcium levels by drawing a blood sample for "chemistry" or "electrolytes" analysis. Many of the prescribed medications to treat cancer and conditions caused by the cancer can create an imbalance of calcium in the blood. Hypocalcemia is a decreased level of calcium in the blood.

The symptoms may gradually appear, or they may happen suddenly. Sudden development of very low blood calcium causes nerve fiber irritability and muscle spasms, called tetany. Symptoms of low calcium vary according to the levels of calcium in your blood. Some symptoms of hypocalcemia may be difficult to distinguish from the side effects of chemotherapy.

Calcium Lab Blood Levels:

(norms may vary slightly in different labs)

Normal	8.5 - 11 mEq/liter
Low (Hypocalcemia)	Below 8.5 mEq/liter
Moderate High (Hypercalcemia)	12 - 14 mEq/liter
Severe High (Hypercalcemia)	Above 14 mEq/liter

Hypocalcemia may present with a combination of various symptoms:

- Anxiety
- Irritability
- Twitching around the mouth
- Muscle cramps, especially the legs
- Numbness and tingling of nose, ears, fingertips, toes
- Painful muscle spasms of hands and feet
- Weakness of bones with increased risk of fractures
- Abdominal cramps
- Diarrhea
- Irregular heartbeat
- Lower blood pressure
- Extreme conditions, seizures

Potential causes:

- Inability of the body to absorb calcium
- Prolonged diarrhea
- Insufficient dietary intake of calcium
- Severe infections
- Blood transfusions
- Low magnesium levels
- Cortisone drugs
- Decreased function of the parathyroid gland
- Chronic kidney disease
- Inflammation of the pancreas

Diagnostic tests:

- Complete blood profile
- Electrocardiogram
(to measure activity of the heart)

Treatments for mildly low calcium levels:

- Increase consumption of foods high in calcium: milk, cheese, yogurt, and dark green leafy vegetables.
- Take vitamin D supplements for absorption. (Ask your dietitian if this is necessary; in many areas of the country daily normal sun exposure provides adequate calcium.)
- Limit caffeine intake.
- Exercise regularly.
- Avoid smoking.

Treatments for extremely low calcium (tetany):

- Medications to raise blood levels of calcium or treat underlying problems
- IV fluids
- Blood tests to evaluate effectiveness of treatment and calcium levels
- May require hospitalization

Follow-up treatment:

- Blood samples to monitor calcium levels
- Prescribed medication
- Diet containing recommended amount of calcium

It is important to report any signs of hypocalcemia to your healthcare provider.

Additional instructions for Hypocalcemia:



Hypokalemia — Decreased Potassium Levels

Potassium is a mineral in the blood, along with sodium and calcium, that maintains the normal rhythm of the heart, regulates the body's water balance, and is responsible for muscle contractions, nerve impulses, and other functions of the body. Your doctor checks your potassium levels by drawing blood for a complete blood count analysis. Many of the medications used to treat cancer and conditions caused by cancer can cause an imbalance of potassium in the blood. **Hypokalemia**, low potassium levels, can complicate cancer treatment and cause serious medical problems if not treated promptly.

Potassium Lab Blood Levels:

Normal	3.5 - 5 mEq/liter
Low (hypokalemia)	under 3.5 mEq/liter
High (hyperkalemia)	over 5 mEq/liter

Frequent signs and symptoms of low potassium levels:

- Extreme weakness
- Paralysis if condition is prolonged
- Low blood pressure
- Irregular heartbeat
- Change in mental status

Possible causes:

- Diuretic drugs
- Excessive vomiting or diarrhea
- Chronic kidney disease
- Elevated blood sugars
- Severe magnesium deficiency
- Treatment with chemotherapy medications

Preventive measures:

- While on chemotherapy treatments, keep all scheduled appointments for blood work to monitor levels.

Diagnosis:

- Complete blood workup with potassium levels below normal lab values

Treatments:

- Potassium supplements (pill or IV)
- Intravenous fluids to correct a serious imbalance
- Monitoring of blood levels for response to therapy
- Treatment of underlying problem

Special instructions on Hypokalemia:



Hyponatremia — Decreased Sodium Levels

Sodium (salt) is a mineral in the blood, along with potassium and calcium, that maintains the normal rhythm of the heart, regulates the body's water balance, and is responsible for muscle contractions, nerve impulses, and other functions of the body. Your doctor checks your sodium levels by drawing a blood sample for "chemistry" or "electrolytes" analysis. Many of the prescribed cancer medications and conditions caused by cancer can create an imbalance of sodium in the blood. **Hyponatremia**, a low level of sodium, can complicate cancer treatments and cause serious medical problems if not treated promptly.

Sodium lab blood levels:

Normal	135 - 145 mEq/liter
Low (Hyponatremia)	below 135 mEq/liter
High (Hypernatremia)	above 145 mEq/liter

Signs and symptoms of low sodium levels:

- Anxiety
- Confusion
- Restlessness
- Muscle twitching
- Headaches
- Nausea
- Vomiting

- Abdominal cramps
- Reduced urine output
- Extreme weakness
- Muscle cramps in the legs
- Increase in pulse rate
- Decrease in blood pressure
- Seizures or coma if imbalance is severe

Possible causes:

- Prolonged loss of body fluids from vomiting, diarrhea, or profuse sweating
- Diuretics
- Congestive heart failure
- Some cancers
- Infections with high fevers
- Kidney disease
- Trauma such as extensive burns
- Liver disease
- Chemotherapy drugs (Cytosan, Vincristine)

Diagnosis:

- Complete blood workup
- Sodium levels below normal lab values

Treatment:

- Water restriction: limited to one quart or less per day until sodium levels reach normal
- Salt added to diet
- Treatment of the underlying cause or condition
- For severely decreased levels, hospitalization with sodium added to IV fluids

Special instructions:



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Indigestion — Dyspepsia

Indigestion, dyspepsia, is a vague pain in the chest occurring soon after eating or drinking that has no apparent cause.

Signs and symptoms:

- Heartburn
- Pain in the upper abdominal area
- Belching
- Intestinal gas
- Bloating or full feeling
- Acid-like taste in the back of the throat

Causes:

- Swallowing of air while eating, drinking, or chewing gum
- Being emotionally upset while eating
- Excessive smoking
- Constipation
- Poor digestion of gas-forming foods
- Food allergy
- Over-indulgence in alcoholic beverages

Risks increase with:

- Increase in stress
- Smoking
- Excessive alcohol consumption
- Use of stomach irritating medications
- Fatigue or overwork

Preventive measures:

- Don't smoke.
- Limit alcohol consumption.
- Avoid foods that cause gastric distress, including carbonated soft drinks and caffeine-containing drinks such as coffee.
- Avoid emotional situations before mealtimes.
- Don't eat fast.
- Relax after eating.

Possible complications:

- Chest pain can mimic signs of a heart attack or serious disease of the esophagus or stomach. Persistent symptoms should be reported to a physician to rule out other causes.

Self-care treatments:

- Eat slowly. Chew food thoroughly and avoid conflicts during meals.
- Don't smoke before eating.
- Avoid chewing gum because it may cause you to swallow air.
- Avoid tight clothing.
- Carefully observe symptoms and note:
 - your emotional condition
 - food consumed
 - beverages drunk
 - onset of discomfort
 - presence of belching, intestinal gas, bloating or nausea

- intensity of pain
- area where pain occurred
- length of time of discomfort

Medical intervention:

If symptoms persist and you experience any of the symptoms described below, contact your healthcare provider. Your physician may order medical tests such as x-rays of the upper digestive tract and gastroscopy (visual examination of the inside of the stomach by means of an instrument inserted into the cavity) to evaluate your condition. Your healthcare provider may prescribe:

- Over-the-counter antacid medications taken as directed on the bottle or by your physician
- Medications to block the gastric secretions, antispasmodics, or tranquilizers to relieve tension may be prescribed.

Notify healthcare provider if:

- No relief experienced after intervention with medications.
- Vomit more than once during an attack or see signs of blood in vomit.
- Experience weight loss or appetite loss.
- You have black, tarry stools.
- You have fever greater than 101° F.
- You have severe pain in the upper-right abdomen or pain radiating to the jaw, neck, or left arm.
- You experience shortness of breath.
- You experience sweating.
- You experience discomfort unrelated to meals or chewing gum.

Additional interventions for indigestion symptoms:



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Insomnia

Insomnia is the prolonged inability to go to sleep or to stay asleep. Insomnia that occurs occasionally is not harmful, but chronic insomnia can cause and compound many health problems.

Causes of Insomnia during Chemotherapy:

- Stress from diagnosis or treatment causes a person to experience worry, anxiety and nervousness. This stress can be so great that it can keep you awake.
- Chemotherapy increases fatigue, causing a person to take short naps during the day and making going to sleep at night a challenge.
- Medications used to control nausea or vomiting that contain dexamethasone (a steroid) can cause some people to feel energized and make falling asleep difficult. Ask your healthcare provider about your nausea medication if you are having difficulty sleeping.

Determine what may be causing you to stay awake: worry or fears, pain, caffeine consumption (include soft drinks and tea).

Tips for getting a good night's sleep:

- Do not eat or exercise within two hours of bedtime.
- Keep your room very dark. Turn electronic clocks with illuminated faces away from you.

- Keep your bed for sleeping only (not watching television or reading).
- Get a consistent schedule for going to bed at the same time and for getting up at the same time.
- If you need a nap, do not sleep longer than an hour.
- Engage in some type of mild to moderate exercise. This reduces stress and insomnia. However, avoid exercise two hours before bedtime.
- Avoid caffeine drinks after mid-afternoon.
- If pain is keeping you awake, report this to your healthcare provider. A warm bath before bedtime can help you relax.
- Depression can be a cause of insomnia. If you are depressed, seek help from a healthcare provider for medication. Many people find that when their depression is treated, their insomnia diminishes.
- Performing the relaxation technique. Take a deep breath through your nose and slowly release it through your mouth. As you exhale, say a word or a short phrase that brings you peace. Repeat the process approximately 15 times. You will find the muscles of your body and mind relaxing.
- Relaxation tapes or CDs are also helpful to block out noise and help you relax to go to sleep.

- Over-the counter medications such as ibuprofen for pain, diphenhydramine (Benadryl®), Simply Sleep by Tylenol®, or acetaminophen with diphenhydramine (Tylenol PM®) bring many people the relief they need. Check with your healthcare provider before taking any medications.

If you find that these interventions are not helpful, inform your healthcare provider. Getting sleep is essential to for a healthy recovery.

Medications your Healthcare Provider May Order:

- Xanax® (alprazolam)
- Librium® (chlordiazepoxide)
- Klonopin® (clonazepam)
- Tranxene® (clorazepate)
- Valium® (diazepam)
- Prosom® (estazolam)
- Dalmane® (flurazepam)
- Ativan® (lorazepam)
- Serax® (oxazepam)
- Centrax® (prazepam)
- Doral® (quazepam)
- Restoril® (temazepam)
- Halcion® (triazolam)
- Ambien® (zolpidem tartrate)

Your healthcare provider may determine that you need medication for short-term use to help you through an anxious period or to help restore your sleep patterns. Take medication as recommended, but do not take it if you are drinking alcohol. Do not double up on medication or share medication with anyone else.



Leukopenia — Low White Blood Count

Leukopenia is a condition caused by a reduction in the number of white blood cells circulating in the body. White blood cells combat infection and provide immunity against diseases. Chemotherapy to treat breast cancer affects blood cells by lowering their counts and can cause leukopenia. The condition is a normal side effect and will be monitored by your healthcare provider as he/she draws blood and looks at your blood count results. After your chemotherapy, your healthcare provider will inform you if your counts are low enough to take extra precautions. During periods of leukopenia, you will be more susceptible to infections from bacteria, viruses, protozoa, and yeast. This condition will subside when treatment is completed.

During periods of leukopenia you should:

- Avoid people with transmissible illnesses such as colds, coughs, flu, bacterial infections, herpes simplex (cold sores), shingles, chickenpox and measles.
- Avoid people who have received recent vaccinations.
- Get uninterrupted periods of rest and sleep.
- Eat a high-protein, nutritious diet.
- Drink at least eight 8-ounce glasses of fluid daily.
- Avoid fatigue; rest when needed.
- Wash hands frequently with antibacterial soap.
- Avoid cleaning bird, cat, dog, and fish excreta, such as in cages.
- Eliminate sources of stagnant water (vases, etc.).
- Eat cooked foods and avoid unpeeled, raw vegetables, raw eggs, and unpasteurized milk products.
- Use an electric razor to avoid cutting yourself when shaving underarms and legs.
- Cleanse perianal area after each bowel movement, washing, rinsing, and drying from front to back.
- Treat all cuts or burns promptly by washing with soap and water, applying antibacterial ointment and covering with bandage.
- Keep all dressings dry; if one becomes damp, change it immediately.
- Avoid enemas, rectal thermometers, rectal suppositories, douches, and bubble baths.
- Use a water-soluble lubricant before sexual intercourse.
- Use a stool softener to prevent constipation and straining.
- Practice good oral hygiene; cleanse mouth and teeth after all meals.
- Keep skin clean; use lotion to keep skin soft.

Report to physician:

- Fever greater than 100.5° F
- Chills
- Sore throat
- Urinary frequency increase
- Painful urination
- Wound that is not healing or has drainage of pus

Special instructions for Leukopenia:



Lymphedema

Removal of the lymph nodes under your surgical arm or radiation therapy to the underarm area may cause **lymphedema**. (**Lymph**, from lymphatic fluid, and **edema**, swelling from fluid accumulation.) This condition, which results in swelling, occurs when there is a decreased flow and removal of lymphatic fluid from your arm. Lymphedema may happen shortly after surgery or years later. This condition may produce pain, restricted movement of the shoulder and arm, and increased susceptibility to infection. Medications and treatments are limited in their effectiveness; therefore, the best strategy is to prevent the problem from occurring. Fortunately, only a small percentage of patients experience chronic problems with lymphedema.

The first line of defense is to regain your arm's full range of motion by using the exercises suggested by your healthcare provider. While these exercises may seem dull and unnecessary, they facilitate the flow of the lymphatic fluid from the arm area. **Do not begin an exercise program until your physician gives you permission.**

Suggestions to

Help Prevent Arm Lymphedema:

- For several weeks following surgery, you will need to lie down for several hours a day to aid the recovery process. When lying down, prop your arm on a pillow above the level of your heart to facilitate drainage of fluid. Elevation of the arm reduces any additional blockage of fluid.
- Throughout the day, keep your arm slightly out from your body so as not to compress the underarm area. When sitting, place a small pillow or a small stuffed animal under the arm to keep the arm away from the body and keep swelling at a minimum. Some swelling under the arm is due to surgery and will improve with time.
- Avoid using your arm and hand in a dependent position (below the level of the heart) for a long period of time. If you need to perform a task of this sort, periodically hold your arms above your head to promote drainage.
- Make a fist or squeeze a small rubber ball repeatedly several times a day to assist in removal of accumulated fluid.

Avoid Injury and Infection:

- Do not allow the surgical arm to be used for blood pressure checks, blood samples, or injections.
- Do not wear anything that is tight on the arm or hand (rings, watches, bracelets, or tight elastic in sleeves).
- Do not cut your cuticles; keep hands soft by using hand lotion.
- Do not carry heavy packages, purses, or suitcases on the side of your surgery.
- Wear protective gloves when working in the garden, washing dishes, or using any irritating chemicals such as hair dye.

- Be careful to avoid burns and cuts when cooking.
- Wash all cuts or injuries with anti-bacterial soap, apply an anti-bacterial medication, and cover the area with sterile gauze until the wound heals.
- Avoid sunburn by wearing long sleeves or a sunscreen at all times.
- Use a thimble when sewing.
- Avoid insect bites by wearing insect repellent.
- Be careful with animals to avoid scratches.
- Use an electric razor under your arm.

These precautions may help you to avoid swelling or infection in your arm. If you ever experience any redness, pain, or infection in this arm or hand or if you injure the arm and run a low-grade fever, notify your healthcare provider. When lymph fluid becomes infected with bacteria—a condition called **cellulitis**—antibiotics will be necessary to treat the infection.

Swelling in the arm is normal for several weeks after your surgery. If you have persistent swelling in the arm and hand area longer than several weeks, contact your healthcare provider. The first method of treatment to manage lymphedema is simply to elevate the arm for periods of at least 45 minutes using two pillows, two or three times a day. While the arm is elevated, squeeze a small rubber ball or open and close your hands tightly (hand pumps). Raising the arm above the level of the heart several times a day will usually reduce most lymphedema. Sleeping with the arm elevated on a pillow is also helpful.

If elevation is not effective, special sleeves designed to reduce the swelling can be worn. A professional fitter will measure the arm and make a customized elastic sleeve to fit your arm. If the swelling continues, a different

sleeve hooked to a compression pump may be used several hours per day to manually remove the accumulated fluid. Both the sleeve and the compression pump should be supervised by a qualified healthcare provider in the area of lymphedema management.

A special massage technique, Manual Lymph Drainage (MLD), is performed and taught by some physical therapists and massage therapists. The manual massage method teaches patients and family members how to use their hands in stroking, compression movements to move the lymph fluid from the arm. Massage is combined with bandaging the arm and scrupulous skin care. Your healthcare provider may refer you to a physical therapist or a massage therapist with these skills. Many breast cancer programs include lymphedema services. Swelling in the arm should be managed at the first signs of its occurrence.

Remember, lymphedema is usually not associated with cancer. It is a result of the lymph nodes and vessels in the breast area removed during surgery, scar tissue formed after surgery, or radiation therapy to the area. These conditions slow the removal of the lymphatic fluid that accumulates in the breast and arm area, resulting in swelling of the arm and hand.

Assessing Range of Motion in Surgical Arm:

Exercise your surgical arm for several months following surgery. Then, to determine whether an adequate return of range of motion has returned to your arm, ask yourself the following questions. If you could perform these movements before surgery, can you now easily:

- Brush and comb your hair?
- Pull a T-shirt or tight-necked sweater over your head?

- Close a back fastening bra?
- Zip up a dress completely that has a long back zipper?
- Wash the upper part of your back on the shoulder blade area on the opposite side from surgery?
- Reach over your head into a cabinet to remove an object?
- Make a double bed?

If your range of motion needs improvement, talk with your healthcare provider about a referral to a physical therapist or to an exercise program designed to increase your arm capacity.



Memory Problems During Chemotherapy

During chemotherapy treatments women often complain that their memory is impaired. They complain of being unable to recall and to process new information as they once could. Patients often refer to the condition as "chemobrain." They often share, "I feel as if I am in a mental fog."

Common Complaints:

- Difficulty concentrating when someone is talking to you
- Difficulty concentrating on a task for a long period of time
- Difficulty following and remembering directions
- Difficulty learning a new task
- Forgetting appointments
- Forgetting if you have recently done something such as feeding a pet
- Forgetting where you put something
- Feeling sleeping or drowsy more than usual

What causes the problem? There are many things that impact memory during treatment.

- **Stress** - starts at the diagnosis of cancer and continues. It reaches its height during treatment. The body has undergone many stressful situations since diagnosis, including surgery, and now it must go through chemotherapy and its side effects.

Remember at diagnosis, how difficult it was to make decisions? Look at the list "Common Complaints". Before chemotherapy, stress had caused many of the same complaints. The stress of your situation is one cause of the "mental fog" condition.

- **Chemotherapy** - drugs impact the condition by altering the major components of the blood:
 - **Red Blood Count** - Side effects include lowering red blood counts, which cause anemia. Anemia causes fatigue. The red blood cells carry the oxygen to the brain, and when the levels of oxygen are lowered, the mental ability to process information is greatly impaired. Remember, the brain requires adequate levels of oxygen to function properly-lower the oxygen and you lower the ability to process information. Fatigue greatly impairs the ability to process information and remember as well.
 - **White Blood Cells** - Side effects of lowered white blood cells cause an increase potential for infection. Infections, bacterial or viral, impact the body's ability to function properly. During an infection, the thinking and information process is significantly lowered. Everyone knows how debilitating having the flu is on mental functioning. Infections can compound the mental fog.

- **Electrolyte Changes** - Chemotherapy often alters the balance of electrolytes. These various chemicals control many functions in the body and if they are out of normal range they can have a great impact on mental processes. Changes in calcium, sodium or potassium levels all have side effects of causing mental changes. Your physician will be closely monitoring your electrolyte balance during treatment.
- **Hormonal Changes** - Chemotherapy also causes a drastic reduction in the hormonal balance of the body. Unlike the gradual process of menopause, women who are given chemotherapy may experience a menopausal condition that occurs quickly. One of the most frequent complaints of menopausal women is that they have problems with memory. With the hormonal change caused by chemotherapy, memory changes are experienced by these patients as a side effect of treatment.
- **Medications** - Many medications given to support a patient during chemotherapy such as pain medication, anti-anxiety medication, nausea medication, sleep medication and some of the pre-meds given before chemotherapy also impact memory.
- **Dehydration** - The lack of adequate fluid in the body is called dehydration. One of the main components needed for body functioning is adequate fluid. During treatments, nausea, vomiting, diarrhea and lack of desire for food or drink can impact the fluid balance causing it to fall below the needed level. Dehydration directly impacts mental functioning. It is essential to keep your fluid balance at adequate levels during treatment. You need to report any nausea that prevents eating

or drinking, and report any vomiting or diarrhea. These can all cause dehydration and impact your physical and mental functioning. Drink at least two quarts of fluid a day to maintain adequate bodily fluids.

- **Depression** - Sometimes the stress of the illness and the hormonal changes will cause your mood to be constantly depressed. You feel hopeless, helpless, cry a lot, withdraw from friends, withdraw from normal social activities, experience changes in your normal eating patterns and in your normal sleep patterns. Mentally, you feel emotionally exhausted, as if you can't deal with anything else. This is depression. Depression can rob you of your energy and desire to live. The good news is that depression is a treatable illness. You don't have to continue in this depressed condition. Talk to your healthcare provider and tell them how you feel. Today there are many medications that can relieve your depression within several weeks. Taking these drugs is not a sign of weakness. It is a sign that you have recognized a treatable condition and are utilizing the help you can get. If you were a diabetic, would you consider taking insulin a weakness? Absolutely not. Depression is an imbalance in the brain chemistry that can be treated. Reach out for help.

Chemobrain

As you can see, "chemobrain" is a combination of many things. You need to understand that it is simply an expected side effect and that there are some things you can monitor and report to your healthcare provider for obtaining help in reducing the mental impact it can have.

What can you do to reduce the impact?

- First of all, do not blame yourself thinking that it is linked to your lack of coping skills or mental ability. This is a normal side effect of treatment. This is not something that you have caused. After treatment, the condition will gradually improve. In the meantime, take steps to compensate for the condition without being embarrassed.
- Purchase a note pad and a calendar. Some people like date books that have a combination of a calendar and a place for notes. Some prefer to purchase a small book that will fit into their purse; others like a larger book. You decide what would best suit your needs.
- Make a list of everything that is important for you to remember and mark events and appointments on your calendar. Keep the pad and calendar in a place where you can find it. Refer to it at the beginning of the day to plan. When you complete a task, mark it off the list.
- Buy a pack of Post-It notes and write yourself notes that you can stick on the refrigerator, back door, bathroom mirror or car dash to help you remember.
- Make a shopping list. Keep a running list of items you need and take it with you to the store.
- Take a friend or family member with you to appointments to help you remember information, especially if you will be asking questions or getting test results. Ask for written information. Ask for test results for your records and ask for all appointments to be written down on appointment cards, so you can transfer the date accurately to your calendar.
- If you have problems remembering names, repeat the name to yourself several times after you are introduced.

Try to associate the name with something to help you remember. If you see someone and can't remember their name, don't be embarrassed; simply say, "I remember your face. Help me with your name one more time. I am a little forgetful some times." Other people have the same problem remembering names and you can help them by approaching them and saying "Hi, I'm (your name); I didn't know if you remember me." Most often they will tell you their name in return and they will be grateful that you initiated the name exchange.

- Be sure that you are getting adequate sleep. Insomnia (not being able to fall asleep or stay asleep or early morning awakenings) drains you physically and mentally. If you are having problems sleeping, tell your healthcare provider. It is necessary for mental functioning that you get adequate sleep.
- Keep active. During chemotherapy many women find it difficult to stay active. Studies have proven that women who stay active by doing simple exercises such as walking (according to the level of their endurance) experience less mental fog. They have less fatigue, less depression and experience fewer sleep problems. Plan how you can start a daily program of moderate exercise. Walking is simple, free and has no time restrictions; you determine when and where is the best time for you. The only equipment is a pair of good walking shoes. If you do other exercises, such as swimming, these are also helpful. However, this is not the time to go and join a gym and start exhausting workouts. Moderate, regular exercise is your goal.

Report to Healthcare Provider:

- Any sudden or severe changes in memory or confusion
- Fever over 100.5
- Pounding or racing heartbeat
- Rapid pulse
- Difficulty breathing or rapid breathing
- Dizziness or fainting
- Any blood in the urine or stool
- Any nausea that prevents you from eating or drinking after taking prescribed medications
- Vomiting more than 4 - 5 times a day after taking prescribed medications
- Diarrhea more than 4 - 6 times a day that continues after taking prescribed medication

Special Instructions:



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Menopausal Side Effects from Chemotherapy

Women who receive chemotherapy to treat breast cancer often experience numerous side effects. The most common side effects associated with chemotherapy are nausea, vomiting, fatigue, and hair loss. However, one of the potential side effects from chemotherapy may be early menopause. The following information will help you understand some of the changes that may occur if you experience early menopause as a result of your chemotherapy treatment.

What is menopause?

Menopause is the cessation or ending of menstrual periods caused by the decrease of female hormones. Hormones are chemicals produced naturally in a woman's body that cause her to develop feminine characteristics. Estrogen, the most commonly known female hormone, is responsible for breast development, menstrual periods, and ovulation that allows pregnancy to occur. Estrogen is also associated with approximately 300 other functions in the body.

Other major hormones produced in conjunction with estrogen are progesterone, prolactin, and testosterone. The production of all these hormones increases in females between the ages of 8 to 12. This stage is referred to as puberty. Hormones continue to cycle throughout the months, year after year until a woman reaches her mid to late forties when the levels begin a gradual decline. This period of hormone decline, called perimenopause, can even start in the late

thirties for a few women. Perimenopause, the transitional time of hormonal reduction, can vary greatly among women with the average lasting 3.8 years. During this time menstrual periods may become irregular, eventually stopping because of decreasing estrogen levels. Menopause occurs when a woman has not had a menstrual period in one year. It is a natural transition that all women will eventually experience. The average age of menopause in the United States is around 51 years of age. However, as previously stated, menopause can occur earlier or later.

Chemotherapy's Effect on Hormonal Functioning

Women who have not reached natural menopause and are taking chemotherapy to treat breast cancer have a high potential of entering early menopause because of the chemotherapy drugs. This side effect is called treatment-induced menopause. In a recent study (2001) by EduCare Inc. (breast health education company) of 126 women treated with chemotherapy for breast cancer, 58 percent were pre-menopausal at the time of diagnosis. Of those women, 82 percent stopped their menstrual periods during treatment, and 75 percent of these women did not restart their menstrual periods after treatment was completed.

Will this happen to you? Every woman experiences different hormonal changes during treatment making it very difficult for her physician to predict whether treatment-

induced menopause will happen. It most often happens to those who are closest to natural menopause, happening less often in very young women. Some drugs are also more likely to cause treatment-induced menopause than others. In addition, the length of time the drugs are given will have an impact on hormonal changes.

Symptoms of Treatment-Induced Menopause

You may notice changes after you start treatment that perimenopausal and menopausal women experience including:

- Periods become irregular or stop altogether
- Hot flashes
- Night sweats
- Vaginal dryness that can cause painful intercourse
- Mood swings, irritability, sadness and a higher potential for depression
- Headaches, joint and muscle aches
- Lightheadedness
- Forgetfulness
- Insomnia
- Dry skin
- Weight gain
- Increased urinary tract infections
- Slight loss of bladder control
- Reduction in sex drive
- Higher potential to not experience orgasm during intercourse
- High potential for future infertility
- Higher potential for future osteoporosis

Some women only experience a few of these symptoms, others many. The good news is that for each side effect an intervention is

available to eliminate or reduce its impact on your quality of life. It is very important that you discuss any menopausal symptoms with your healthcare provider. Ask for recommendations to help you cope with any discomfort you may experience. Being aware that treatment-induced menopause may occur has helped many women anticipate and prepare to manage the changes.

Once you have completed treatment, your periods may or may not start again. For premenopausal women who participated in the EduCare study, the majority reported they restarted their menstrual periods the first six months after completion of treatment; however, for some it was slightly longer. If you restart your periods, you will experience a great reduction in menopausal symptoms. However, if your periods do not resume, you will continue to have menopausal symptoms.

Women who take the drug tamoxifen will not experience treatment-induced menopause; however, they may experience some of the same side effects.

Partner Support

Most women in the EduCare study reported that it was very helpful for their sexual partner to understand the side effects of chemotherapy and how it may impact their relationship, especially the sexual relationship. Understanding and planning for the changes as a couple can reduce some of the anxiety related with the side effects.

General Health Concerns:

■ **Osteoporosis** - One of the greatest and often undetected potential risks from early menopause is osteoporosis, a condition that makes the bones thin and brittle from loss of bone density. Loss of estrogen, either through chemo-induced or natural menopause, often causes additional and accelerated bone loss. Every woman should have a bone density scan (different from a bone scan) prior to treatment. Furthermore, your bone density should be closely monitored throughout your lifetime. Appropriate diet and exercise guidelines along with medications, if necessary, should be utilized to prevent further bone loss. Ask your doctor or nurse for information on osteoporosis and how they plan to monitor your skeletal health to prevent or slow down osteoporosis.

■ **Heart Disease** - Many clinical studies indicate that a lack of estrogen puts a woman at higher risk for heart disease. Again, diet, exercise, no smoking, and stress and weight management can be implemented in your daily routine to help make up for the loss of estrogen. Ask your physician for recommendations to protect your heart's health and for information on women and heart disease.

Coping with cancer treatments is often difficult, frustrating, and at times confusing. However, understanding the potential changes that may occur can help you effectively manage the unexpected side effects.



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Nadir from Chemotherapy

Chemotherapy drugs vary as to their effect on blood counts. Bone marrow toxicity happens when blood counts drop or lower after chemotherapy. Toxicity occurs because chemotherapy affects healthy blood cells just as it kills rapidly dividing cells such as cancer.

Some drugs affect only one type of blood cell while others affect several or all cells. Some drugs cause moderate lowering of the counts while others have a greater impact. The period of time when the blood counts will reach their lowest point is called the **nadir** period. During the nadir, your blood counts will be reduced to their lowest level between treatments. After the nadir, blood counts will gradually increase according to the drug given. Knowing the nadir of your drugs (time when your blood counts reach their lowest point), informs you to take extra precautions during this time to avoid potential problems.

Chemotherapy usually causes a drop in your hemoglobin (cells which carry oxygen to other body cells) producing fatigue. However, the two most important changes in your blood counts will be in your white blood cells (also called leukocytes) which fight off infections, and in your platelets (also called thrombocytes) which cause your blood to clot. The greatest concerns during your nadir are lowering your resistance against infections and increasing your potential for bleeding problems. Being aware of these concerns will enable you to take extra precautions against exposure to contagious illnesses and to protect yourself from anything that could put you at high risk for bleeding.

Listed on the next page are chemotherapy drugs which may be a part of your protocol for treatment of breast cancer along with the nadir period and recovery times. Find your drugs to identify the time when you are more susceptible for problems.

Nadir and Recovery Time for Chemotherapy Drugs

Drug	Degree of Suppression	Greatest Impact: White Blood Cells (W) Platelets (P)	Nadir (Days after Treatment)	Recovery (# Days)
Cisplatin	Mild	W	14	21
Cyclophosphamide (Cytoxan)	Moderate	W	14	17 - 21
Doxorubicin (Adriamycin)	Moderate	W	14	21
Etoposide (VP-16)	Mild	W & P	14	21
Fluorouracil (5FU)	Mild to Moderate	W	10	21
Methotrexate	Mild	W & P	10	14
Mitomycin	Moderate	W & P	28	40 - 55
Taxol	Severe Moderate to Severe	W P	11 8-9	21 21
Thiotepa	Moderate to Severe	W & P	21	40 - 50
Vinblastine	Moderate to Severe	W & P	10	21
Vincristine	Mild	W	10	21

If you would like to know how to best protect your health during the nadir period, ask your health-care provider for Patient Teaching Sheets on Neutropenia (decreased levels of white blood cells) and Thrombocytopenia (decreased levels of platelets).

Chemotherapy drugs in my protocol:

Special instructions:



Nausea and Vomiting Management

Learning to manage nausea and vomiting during treatment may present a challenge. Even though much progress has been made in antiemetic medications, a small percentage of patients still struggle with the problem. Women often think that they should learn to tolerate the nausea and vomiting as an expected part of treatment. However, it is better to understand the particular characteristics of nausea or vomiting, learn what promotes the problem, what can be done to prevent or treat it, and how to effectively communicate the characteristics of your experience with your physicians. Nausea and vomiting warrant serious attention because the condition can cause fluid and electrolyte imbalances, cause weight loss, and greatly diminish the quality of the patient's life.

Understanding Nausea and Vomiting

Nausea is a wave-like feeling of distress causing an uneasy feeling in the stomach or back of the throat that signals the potential for vomiting. Dry heaves (no stomach contents are released) may accompany nausea. Vomiting is the forceful return of stomach contents through the mouth. Nausea may or may not be accompanied by vomiting. People with a history of motion sickness or nausea and vomiting associated with pregnancy are more prone to experience problems during treatment. Women of menstrual age are at greatest risk for nausea and vomiting to be problematic.

Different types of nausea and vomiting

- **Anticipatory:** This type of nausea/vomiting occurs when a familiar sound, sight or, smell triggers the remembrance of a prior unpleasant episode with nausea and vomiting causing the same response. This occurs before chemotherapy drugs are given. Stress and anxiety increase the likelihood of occurrence. This could occur, for example, when you are getting ready to go for a treatment.
- **Chemotherapy induced:** Occurs within the first 24 hours of your chemotherapy.
- **Delayed nausea/vomiting:** Occurs after the first 24 hours of chemotherapy administration; may peak at 48 or 72 hours. Some drugs have a high potential for delayed nausea/vomiting.
- **Refractory (stubborn):** Persistent and non-responsive to most traditional medications.

Medications for nausea and vomiting

Antiemetic medications are given before chemotherapy treatment and additional medication ordered to be taken at home if needed. Many other medications, such as pain medications or antibiotics, may also cause nausea or vomiting. Most nausea drugs are more effective when taken with a small amount of fluid either prior to nausea or at the first signs of nausea. You should abstain from eating or drinking for at least half an hour to allow the medication to begin to work. Proceed with small amounts of fluids before eating a meal.

Self-help interventions

There are self-care measures you may do in addition to medication that may prevent or reduce the occurrence of nausea and vomiting. Some of these steps may work as well as medication. First, it is important to recognize the signs and symptoms that alert you to an impending episode. The center in the brain that controls vomiting is closely related to the respiratory and heart functions and these may serve as clues to take action to prevent a vomiting episode.

Signs that may precede or accompany nausea and vomiting:

- Increase in oral secretions with nausea
- Uneasy feeling in stomach
- Increase in heart rate with nausea prior to vomiting
- Warmth of skin or sweating prior to vomiting

If signs of nausea occur:

- Move to a well-ventilated, cool environment and lie down if possible
- Eliminate any environmental stimulus such as loud noise, noxious smells, or bright lights
- Avoid sudden movements; minimize activities during nausea
- If possible, place a cool, damp cloth to forehead and/or neck
- Take a series of long, deep breaths, hold them for five seconds and then exhale slowly
- Distract yourself with music, reading or television

If vomiting occurs you may experience:

- Decrease in heart rate and blood pressure during vomiting
- Weakness or dizziness
- Paleness and coolness of skin
- Increase in depth and rate of breathing pattern

After vomiting:

- Estimate amount vomited (important if vomiting is frequent)
- Rinse mouth thoroughly with cool water to remove aftertaste
- Wipe face with a cold, wet cloth
- Refrain from eating; instead, sip cool liquids slowly in small amounts; eat ice chips
- If vomiting has occurred frequently, it is best to refrain from solid food for four to eight hours past the last vomiting episode
- Take nausea medication with a small sip of fluid
- Rest, if possible

Preventing or Reducing Nausea and Vomiting:

- Select foods that are room temperature or cold; warm or hot foods have odors that often stimulate the vomiting center.
- Select bland foods for your diet, such as mashed or baked potatoes, applesauce, yogurt, cottage cheese, sherbet, crackers or toast; highly seasoned food will often aggravate the condition.
- Sip clear cool liquids to reduce nausea (apple juice, cranberry juice, lemonade, broths, Gatorade®, ginger ale, tea, colas and gelatins are usually well tolerated in small amounts).

- Try sour foods such as lemons, sour pickles, hard sour candy or lemon sherbet; rinse your mouth with lemon juice and water if your mouth is not sore from chemotherapy.
- Avoid fried, greasy, highly salted, spicy foods, and foods with strong odors.
- Avoid smelling strong odors such as perfume or cleaning chemicals; avoid being around other people who are vomiting.
- Avoid odors of cooking food.
- Eat light meals often, rather than large heavy meals.
- Ask nurse or physician about relaxation or meditation techniques.
- Try to relieve nausea or vomiting with same foods or beverages that you used in the past when you were sick on the stomach with the flu or pregnancy; often these foods will give effective relief.
- Maintain regular bowel movements. Constipation can be a contributing cause of nausea. Many drugs used during cancer treatment contribute to constipation. If constipated, you should contact physician for an appropriate laxative. Bowel obstruction is another potential cause.
- Narcotic pain medications often cause constipation.

Determining pattern of nausea and vomiting:

Learn how to identify the type of nausea and any contributing causes that may stimulate you. This can be accomplished by keeping a record for at least one week on a pocket calendar of nausea and vomiting to determine a pattern.

- Write down the day received treatment. Note any nausea/vomiting the day prior.

- Everyday, record levels of nausea experienced throughout the day using a scale:
0 = none 1 = mild 2 = moderate 3 = severe

- Record any dry heaves or vomiting including time and estimated amount.
- Note any triggers or activities that may help identify cause (odors from foods, cooking, cleaning agents, room deodorizers, perfumes, after a heavy meal, after fried foods, after bathing or exercise, after pain medication, etc.).
- Write down any medication taken to relieve nausea/vomiting and its effectiveness.

From this record, a pattern usually forms as to the type of nausea the patient is having, the time it usually occurs, and the potential stimulus. You can then take steps to modify your problem. The collected information will also help to facilitate your discussions with your healthcare providers about what can be done to get the problem under control.

Different types of nausea require different drug interventions. Sometimes, reports of nausea and vomiting are not sufficient information to effectively understand a particular problem and the most appropriate antiemetic treatment to prescribe. For example, if nausea is anticipatory, before you go for treatment you may need to take anti-anxiety medications at home; if it is refractory and resistant to prescribed medications, a whole new type of nausea management may need to be implemented. Some patients with refractory nausea and vomiting receive continuous IV medication by wearing a battery-packed device delivering around-the-clock medication during the time of their nausea.

When to Contact Healthcare Provider

If you are unable to keep anything on your stomach for 24 hours or have significant weight loss, your healthcare provider should be notified for additional interventions to reduce the vomiting. Persistent nausea and vomiting can create serious health problems from dehydration and electrolyte imbalance. While nausea and vomiting are expected side effects of treatment, it is one that needs to be addressed and treated by your healthcare provider to maintain the highest quality of life possible during your treatment for cancer.

Additional instructions:

Chemotherapy Drugs That Cause Nausea and Vomiting

Chemotherapy drugs vary in causing nausea and vomiting. Listed below is a table that defines the potential for each drug.

Usually Cause Nausea and Vomiting	Sometimes Cause Nausea and Vomiting	Rarely Cause Nausea and Vomiting
Actinomycin-D	Docetaxel (Taxotere)	Asparaginase (Elspar)
Carboplatin (Paraplastin)	Etoposide (Vepesid) (Leustatin)	2-Chlorodeoxyadenosine
Cisplatin (Platinol)	Gemcitabine (Gemzar)	
Cyclophosphamide (Cytoxan)	Mitomycin (Mutamycin)	Chlorambucil (Leukeran)
Cytarabine (Cytosar)	Mitoxantrone (Novantrone)	Fludarabine (Fludara)
Dacarbazine (DTIC-Dome)	Paclitaxel (Taxol)	Fluorouracil (Efudex)
Daunorubicin (DaunoXome)	Teniposide (Vumon)	Hydroxyurea (Hydrea)
Doxorubicin (Adriamycin)	Topotecan (Hycamtin)	Melphalan (Akeran)
Epirubicin (Pharmorubicin)		Mercaptopurine (Purinethol)
Hexamethylmelamine (Hexalen)		Methotrexate (Rheumatex, Folex PFS)
Idarubicin (Idamycin)		Tamoxifen (Nolvadex)
Ifosfamide (Ifex)		Thioguanine (Lanvis)
Lomustine (CeeNU)		Vinblastine (Velban)
Mechlorethamine (Mustargen)		Vincristine (Oncovin)
Streptozotocin (Zanosar)		Vindesine (Eldisine)
		Vinorelbine (Navelbine)

Drugs Used to Prevent or Treat Nausea and Vomiting Antiemetic Drugs

Generic Name	Trade Name
Dolasetron	Anzemet
Granisetron	Kytril
Dexamethasone	Decadron
Methylprednisolone	Medrol
Metoclopramide	Reglan
Ondansetron	Zofran
Tropisetron	Navoban



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Osteoporosis

Osteoporosis, a bone thinning disease, is a major health problem threatening the quality of life of as many as 28 million Americans, 80 percent of whom are women. The National Osteoporosis Foundation (NOF) predicts that more than 41 million people will have osteoporosis by 2015. One in two women over age 50 will experience an osteoporotic fracture during her lifetime. Many breast cancer patients are at increased risk for osteoporosis due to the loss of estrogen resulting from treatments such as chemotherapy. In many cases, doctors recommend women avoid taking estrogen replacement therapy (ERT) following treatment.

Osteoporosis gradually weakens bones, causing more than 1.5 million fractures each year. The hip, spine, and wrist are most likely to fracture. However, osteoporosis causes progressive bone loss throughout the skeleton causing fractures in any site. Half of all hip fracture patients will be unable to walk without assistance. Only one-third can return to their previously independent lifestyle.

Although information about osteoporosis is available, many people may not realize they are at risk. In fact, society most often associates osteoporosis with elderly women; however, this disease actually develops much earlier and accelerates when a woman reaches menopause.

Osteoporosis can be difficult to fight because it is a silent disease. During the early stages

of osteoporosis, sufferers feel no pain and see no symptoms. Until about age 30, we build new bone faster than old bone disappears. During these years, people build their "peak" bone mass - the maximum density and strength their skeletons will achieve. Girls reach 97 percent of their peak by age 19. Adequate calcium and vitamin D intake and regular weight-bearing physical activity can increase bone mass during this time. Lifestyle choices such as smoking, poor nutrition, alcohol abuse, and the use of certain medications can reduce bone mass.

Unfortunately, many people do not build enough bone mass to last their lifetimes. For example, only 13 percent of girls get enough calcium to reach their potential peak. After age 35, women and men begin to lose bone mass as a normal part of aging. Menopause is a particularly critical time because they begin to lose bone tissue more rapidly with reduced estrogen production. In fact, they can lose up to 20 percent of their bone mass in the five to seven years following menopause.

Prevention

Osteoporosis can be prevented by behavioral steps (and medications if needed), detected before fractures occur, and treated to reduce the risk of fractures. Prevention steps must include all of the following components, not just one or two, to be successful.

■ **Adequate calcium and vitamin D -**

When the intake of calcium is too low to meet the body's needs, it steals calcium from the skeleton, which contains 99 percent of calcium stores. NOF recommends the general population get at least 1200 mg of calcium per day. You need 400 iu of Vitamin D if under age 60 and 800 iu if older than 60. Some physicians say about 15 minutes per day of exposure to sunlight provides the necessary amount of Vitamin D to help absorb calcium. The best source for calcium is in food such as dairy products, green leafy vegetables, shellfish, almonds, salmon and sardines (with bones), and foods fortified in calcium such as orange juice. If you do not get enough calcium in your diet, you should take an elemental calcium supplement throughout the day, generally following a meal rather than all at one time.

■ **Regular physical activity -** Exercise in childhood and adolescence increase the likelihood of building peak bone mass. Weight bearing exercises such as walking, jogging, and tennis may improve bone mass. Muscle strengthening exercises improve muscle mass and bone strength. Both activities improve agility, strength, and balance, and reduce risks of falls. Your goal should be a minimum of 30 minutes of exercise five days a week including both muscle strengthening and weight bearing exercise.

■ **Avoiding tobacco use and alcohol abuse -** Smoking appears to reduce bone density and is associated with an increased risk of fractures. Moderate alcohol is not known to damage bone health but excessive alcohol use can be harmful to the skeleton.

■ **Use of medication, if needed -** The Food and Drug Administration has

approved several drugs for the prevention of osteoporosis for post-menopausal women including estrogen/hormone replacement therapy (ERT), Fosamax (alendronate), Miacalcin (calcitonin), Evista (raloxifene), and Actonel.

Some studies show that if ERT is taken for many years, the risk of spine, hip and wrist fractures may be reduced by 50 to 75 percent. ERT is especially recommended for women who have experienced premature menopause (before age 40). Experts believe ERT works best in reducing bone loss during the five to ten years immediately following menopause, when the rate of bone loss is greatest. To keep bones strong, estrogen, as with the other recommended medications, should be taken from menopause throughout life, since stopping treatment allows bone loss to resume.

However, the use of ERT remains controversial. For many breast cancer patients, ERT may not be an option. Fosamax, Miacalcin, Evista, and Actonel all work to help bone health. Fosamax and Actonel are not hormones, while Miacalcin is produced in the thyroid gland. Evista is a new class of hormone drugs called SERM (selective estrogen receptor modulators) that does not appear to harm the breast or uterus. Not every drug is right for every woman. Each woman's decision to begin treatment must be made after a complete discussion with her healthcare provider of each drug's benefits and risks, as well as her own circumstances.

Detection of Osteoporosis

Osteoporosis can be detected by learning about a person's medical history and lifestyle to assess risks and by a bone density test.

Assessing Risks

■ Non-Modifiable (factors you cannot control):

- Personal history of fracture as an adult

- History of fracture or osteoporosis in a first-degree relative
 - Caucasian or Asian race (risks for other races can also be substantial)
 - Advanced age
 - Dementia

- Modifiable (factors you can control):
 - Inadequate exercise or physical activity
 - Current cigarette smoking
 - Small boned or low body weight
 - Estrogen deficiency
 - Early menopause (natural, surgical, or cancer treatment induced)
 - More than one year without menstruation (during childbearing years)
 - Low calcium intake (lifelong)
 - Alcoholism
 - Impaired eyesight (despite adequate correction)
 - Recurrent falls (fall prevention measures are important)
 - Depression
 - Use of bone-robbing prescription medicines such as steroids and anti-seizure drugs
 - Thyroid disease, involving excessive doses of L-thyroxine
 - Scoliosis

- Bone Density Measurement

Bone density testing is a safe, non-invasive radiologic procedure that helps determine whether individuals have a bone density level

that puts them at risk for osteoporosis or strongly suggests that they have osteoporosis. The gold standard today is the DEXA scan (**D**ual **E**nergy **X**-ray **A**bsorptiometry) measurement of the spine and hip. It is suggested that every woman over the age of 50 have a DEXA and all women completing breast cancer treatment have a DEXA to measure her bone density. Other tests of other sites of the body such as the wrist and heel are screening, not diagnostic, devices and are less accurate. If one of these devices indicates low bone mass, a DEXA should be ordered to determine true bone loss. These devices should never be used as a follow-up to measure improvement in bone density. A score of -1 to -2 indicates osteopenia, a condition that can lead to osteoporosis. A -2 (some use -2.5) or greater shows you have osteoporosis.

Treatment

Osteoporosis has no cure, but women diagnosed with the condition and their healthcare providers can usually develop a treatment plan that includes:

- Diet adequate in calcium and Vitamin D
- Appropriate physical activity
- Review of any medications they are taking that can cause bone loss
- Pain management program
- Regular visits for counseling and check-ups
- Medications (described previously)

Coping with Osteoporosis

People with osteoporosis face a variety of psychosocial and practical concerns for which help is available. After fractures, many people become depressed because of the ongoing pain, the isolation, the loss of independence, and fears of future falls. Those who

experience spinal deformities and loss of height may find that clothes no longer fit and their self-image and self esteem may suffer. Support groups, counseling and/or antidepressant medication can help patients handle their situation. Physical therapy, appropriate exercise programs and medication when needed can help reduce pain. In addition, information on fall prevention steps can cut patients' risks of falling and help them feel more in control.

For more information contact the National Osteoporosis Foundation at 202-223-2226 or visit their web site at www.nof.org.



Peripheral Neuropathy

Peripheral neuropathy feels like pins and needles in your hands or feet or a complete loss of sensation as if your hands or feet are asleep. You may first notice it when you have difficulty picking up a small object or buttoning a shirt or blouse. You may also experience constipation. This condition is a possible side effect of certain types of chemotherapy such as Vincristine, Vinblastine, Vindesine, and Taxol. Peripheral neuropathy may be more serious if you are diabetic.

If you experience any signs or symptoms of peripheral neuropathy during treatment, notify your healthcare provider so that your treatment plan can be re-evaluated. Although it is not possible to prevent early symptoms, it is possible to prevent additional problems.

Signs and symptoms you should report to your physician:

- "Pins and needles" sensations or numbness in hands and/or feet
- Difficulty picking up small items
- Difficulty buttoning shirt or blouse
- Ringing in ears
- Difficulty hearing
- Pain in hands or feet (dull aching or burning)
- Constipation

Prevention of constipation during treatment:

- Drink two to three quarts of fluid per day.
- Eat a high-fiber diet - fruits, vegetables, peas, beans, prunes, whole-wheat grains, and cereals.
- Exercise as tolerated.
- Take a laxative or stool softener as directed by your physician. Notify physician if your bowels do not move in two days.

Treatment of peripheral neuropathy:

- Protect the arms or legs from injury because of loss of sensation
- Do not stay in one position too long
- Avoid any bumps or cuts to hands and feet
- Bathe feet with mild soap and warm (not hot) water daily and dry thoroughly
- Wear well-fitting shoes
- Use a cane, crutch or walker as needed to assist stability when walking

Special instructions:



Radiation Recall

Radiation recall is inflammation in a previously radiated site that occurs after chemotherapy administration. The skin that was previously radiated may never have shown any evidence of radiation injury at the time of radiation therapy, but after some chemotherapy medications, the skin becomes red and irritated. Radiation recall can occur months or years after the initial radiation and subsequent chemotherapy administration. It may also occur during radiation therapy if certain chemotherapy drugs were previously administered. Radiation recall is not common, but can occasionally occur.

Radiation recall potential depends on the previous dosage of chemotherapy and/or radiation therapy, called radiation sensitizers.

Promoting Drugs:

- Doxorubicin (Adriamycin)
- Cisplatin
- Dactinomycin
- Methotrexate
- 5-FU
- Bleomycin
- Hydroxyurea

Most reactions are mild, appearing much like sunburn. However, shorter times between radiation and chemotherapy administration may cause more severe reactions.

During a **mild radiation recall** reaction, the skin can be red, painful, swollen, and peeling as in sunburn. **Moderate radiation recall** will be red and painful with blisters that break open oozing fluid. **Severe radiation recall** occurs when these areas develop into ulcer-like wounds and the tissues become dark brownish/black. This condition, called tissue necrosis (cell death) or a necrosed wound, will not heal properly. Treatment involves surgically removing the dead tissues. Open, irritated areas may get infected. If signs of infection (pus) occur, notify your physician immediately. The infected area should be cultured to determine if bacteria or germs are present. Antibiotics will be applied directly to the area and a prescription for an oral antibiotic may be required.

Care of Radiation Recall

Instructions for management of radiation recall:

Mild radiation recall:

- Cool compresses to reduce discomfort
- Lubricating creams or ointments as recommended by your physician

Moderate radiation recall (blister formation):

- Wet to dry dressings while site is oozing fluid—a dressing with a saline (salt) solution is applied and allowed to dry and then peeled away to remove crust and debris
- Lubricating creams or ointments as recommended by your physician after skin peels

Severe radiation recall (ulcer formation with necrosis):

- Requires surgical intervention and removal of dead cells
- Individual site care instructions will be given by physician

If any redness occurs in a previously radiated area after you have received chemotherapy contact your healthcare provider who will give your specific instructions on how to manage your radiation recall site.

Notify your physician as soon as possible if you have:

- Redness and pain in a previously radiated site
- Formation of blisters or open lesions
- Signs of infection in the site (redness, pain, or drainage of pus)
- Fever greater than 100.5°F
- Red streak runs from site toward your heart
- Tissues turn dark brownish/black



Septicemia — Sepsis

Septicemia is a condition in which pathogens (disease-causing microorganisms) have entered and are growing in the **blood stream**. These small organisms may be bacteria (most commonly), fungi, or parasites. They leave their original site of growth (often the nose, skin, bowel, or bladder), enter the bloodstream, and rapidly multiply.

During cancer treatment, chemotherapy will often lower the production of white blood cells that fight infections. This makes the patient susceptible to an infectious organism entering the blood and rapidly multiplying. The infection in the blood can cause severe problems if not treated promptly. It is essential that the signs and symptoms of septicemia be recognized for immediate treatment to begin.

Signs and symptoms of septicemia:

- Fever or below normal temperature (gram-negative infections)
- Chills
- Headaches
- Body aches
- Increase in respiration rate
- Nausea
- Overwhelming fatigue
- Drop in blood pressure
- Skin cool to touch and pale
- Decrease in urinary output
- Late stage: skin changes small red, pin-point dots on body

- Late stage: disorientation or confusion
- Late stage: coma
- White blood count greater than 12,000 cells/mm³

Diagnosis:

- Complete blood cell count
- Blood cultures
- Physician exam
- Possibly cultures of throat, sputum, urine, stool, or cerebrospinal fluid

Treatments:

- Hospitalization
- IV fluids
- IV anti-infective drugs (antibiotics, anti-fungal, anti-viral) according to results of cultures
- Treatment of shock symptoms (low blood pressure) if present
- Treatment of any underlying cause (such as surgical drainage of an area of abscess)

Septicemia can occur rapidly in a person who is immunosuppressed (low white blood counts). Report symptoms to your healthcare provider immediately.

Instructions on septicemia:



Shingles — Herpes Zoster

Shingles (Herpes Zoster) is caused by the varicella-zoster virus in the nervous system. This virus causes chickenpox and stays in the nerves after the disease without causing any problems. When a person's immune system is under-functioning because of stress, treatment with chemotherapy drugs or disease process, the virus is activated and shingles may occur. There is no present vaccine to prevent shingles, but there are medications to reduce the severity and length of the disease.

Signs and symptoms of shingles:

- Severe, unexplained pain occurring in one area of the body
- Painful red blisters occurring after four to five days of pain
- Blisters appearing on a broad streak of reddened skin along the inflamed nerves
- Most often blisters occur on the trunk of the body but may occur on the face
- Blisters occur on one side of the body only
- Fever and chills
- General feeling of having the flu or extreme fatigue accompanying outbreak
- Mild nausea may be present

Blisters usually clear in 14 to 21 days; however, the pain may be present for months after the outbreak.

Risks increase with:

- Adults over 50
- Stress
- Chemotherapy treatments
- Radiation therapy
- Diseases which lower immune (disease fighting) system of the body

Possible Complications:

- Secondary infection in the blisters (bacterial, fungal)
- Chronic pain after outbreak
- Corneal (eye) ulceration
- Infection moving to central nervous system (spinal fluid/brain)

Diagnosis and Treatment:

- Initial pain is usually mistaken for other diseases, such as pleurisy if the pain is in the chest area, or appendicitis if in the abdomen, and etc. Blisters along the pain line are the first definite symptom for diagnosis. The physician may order blood cultures and cultures of the blisters.
- The primary goal is to relieve pain and itching. Pain medication and anti-itching medications may be ordered. An anti-viral drug, Acyclovir®, may be ordered to reduce the severity and shorten the duration of the outbreak.

- Mild cases may be treated with oral medications. Severe painful outbreaks, or in an immuno-compromised patient, may require I.V. medications.

Warning:

During the acute stage of your outbreak, you are contagious to people who have not had chickenpox. People who have had chickenpox are not usually at risk. If there is any doubt, a physician can perform a blood test of the questionable person to determine if there is evidence of immunity against chickenpox in their body. Ask your physician how long you will be contagious.

Comfort interventions:

- Bathe carefully over the blistered area.
- Don't bandage the blisters; leave open if possible, when alone.
- Wear large, cotton clothing to prevent rubbing and to allow the air to circulate, if blisters are under the skin.
- Apply cold compresses over the area to help relieve pain.
- Soak in a tub of bath water with corn-starch or colloidal oatmeal (Aveeno®).
- Use medications on the area as prescribed by physician.
- Avoid scratching the area with your nails, breaking blisters and creating a potential for infection.
- Apply Calamine® lotion (available without prescription at pharmacies) for local comfort.
- Take analgesics (such as Tylenol®) for pain.

Medications:

- Pain medication (prescribed by physician)
- Acyclovir® (anti-viral drug prescribed by physician to reduce symptoms)
- Cortisone drugs (used in severe cases)
- Tranquilizers (prescribed by physician to reduce anxiety caused by pain and itching)

Notify healthcare provider if you have:

- Pain not relieved with prescribed medications
- Signs of infections (yellow or greenish-yellow discharge in blisters)
- Severe headache or mental confusion
- Fever greater than 101° F after a week of medication

Instructions for shingles care:



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Skin Care During Radiation Therapy

Radiation therapy is the use of high-energy rays to stop cancer cells from growing and multiplying in the treated area. This type of radiation is similar to that of a traditional x-ray but is more powerful and is focused at a specific area for a longer period of time. Radiation therapy for breast cancer may be given over a period of five to seven weeks, usually five times a week. This schedule prevents the skin and normal tissue from receiving too much radiation at one time.

Your first trip to the clinic will include an evaluation of your cancer by the radiologist and marking of the area to be treated. The radiation oncologist will review your records and, by using prior test results or ordering new tests, will determine the area and dose of radiation you will receive. To ensure that the radiation beam is aimed correctly each day, a technician outlines the radiation site with tiny, freckle-sized dots of semi-permanent ink. Although the marks will eventually fade away, they need to remain until treatment is completed. Avoid soap and scrubbing on the area during the treatment period.

Your physician and staff will give you specific instructions to follow during your treatments. It is important to have your treatments on the regularly planned schedule. However, if you have to miss an appointment because of an emergency, this will not diminish the effectiveness of the treatments.

Treatments are given in a room where you lie on a table and the machine directs the rays on to your chest. Once you are positioned correctly, the technicians go into an adjacent room where they can monitor you on closed-circuit TV and talk to you over an intercom. The machine is then turned on. Radiation equipment is large and often noisy as they move around to aim at the marked area. Radiation therapy does not hurt. Once the machine delivers the prescribed dose to your body, usually less than one minute, it is turned off and the therapist returns to assist you off the table. The actual treatments take only a few minutes though you may spend 15 to 30 minutes in the treatment room.

Radiation therapy will not cause you to be radioactive. Even the cells targeted by the high-energy waves are affected only for a moment. You can continue to live normally and interact with your family during treatments. Side effects from treatment are mild with skin changes, poor appetite and mild fatigue being most common.

The skin surrounding the area receiving treatment undergoes some temporary changes, much like spending a day at the beach without sunscreen. About two weeks after therapy begins your skin may begin to look red, irritated, tanned, or sunburned. These are normal changes. Most skin reactions start to go away within a week or two of completing treatment.



Stomatitis — Sore Mouth

Stomatitis is a condition that refers to inflammation of the lining of the mouth and throat, causing discomfort or pain. Your mouth and throat will hurt when you eat or drink. Sores or ulcers may occur. Most often this condition is a result of chemotherapy administration. Drugs that kill cancer cells also damage the lining of the mouth and throat, causing the top cells to slough off, exposing the cells underneath. These cells are sensitive and the results are pain and discomfort. Cells in the mouth completely replace themselves every seven days. Usually, a sore mouth from chemotherapy administration will improve and cells repair themselves in a week, if additional chemotherapy is not given during that time.

Signs of early stomatitis may be:

- Redness and swelling in the mouth and on the lips
- Sensations of dryness
- Sensations of mild burning or discomfort

If you experience these early signs of stomatitis, protect your mouth and throat from further damage by:

- Cleansing mouth thoroughly after every meal; brush with a very soft toothbrush; be careful when you brush not to injure gums; soak your toothbrush in hot water to soften bristles to prevent irritation to gums.

- Using a non-irritating toothpaste or baking soda.
- Not using lemon or glycerin sticks when mouth is sore.
- Rinsing your mouth with water to remove any accumulation of food, if you cannot brush after a meal.
- Preparing a mouthwash solution of 1 tablespoon of baking soda in 2 cups of water, or 1/2-teaspoon salt and 1 teaspoon baking soda in 4 cups of water.
- Not using commercial mouthwashes containing alcohol; alcohol-free mouthwashes (such as Biotene®) can promote healing and prevent infection by stimulating the body's own immune system in the mouth and saliva.
- Keeping your lips moist with a lip balm or K-Y Jelly®.
- Avoiding use of tobacco and alcohol.
- Avoiding foods that are too hot or too cold.
- Avoiding foods that are spicy, acidic, or have a coarse, irritating texture.
- Being sure dentures fit properly; loose dentures can cause additional breakdown of area.
- Flossing between teeth, but avoiding any contact with gums.
- Stop flossing if flossing causes pain.

- If your pain is preventing you from eating or drinking, ask your physician for a prescription for a topical analgesic, which can be swished in your mouth to deaden the area before eating or drinking. Swish these products around in the mouth and swallow or spit out to relieve pain temporarily.
- Swishing an over-the-counter medication, such as Kaopectate®, between meals to relieve some of the discomfort and promote healing.
- If sores develop, you can pour an antacid into a dish and allow the liquid to come to the top; discard this liquid and use the concentrated part of the solution, which is pasty, to swab onto inflamed areas using a cotton-tipped applicator.
- Applying Orabase®, an over-the-counter product oral protective paste to irritated areas to relieve discomfort.
- Applying vitamin E oil to the irritated area by puncturing a capsule.
- Applying Carafate®, a prescription drug which protects not only your mouth and throat, but also the entire upper gastrointestinal tract.
- Eating cool foods or foods at room temperature, which are less irritating.

If your stomatitis becomes severe:

- Call your healthcare provider—medication may be required.
- Report signs of infection, such as temperature greater than 100.5° F.
- Cleanse your mouth thoroughly. Mix one part of hydrogen peroxide to four equal parts of water and use immediately; swish around in your mouth and hold for several minutes; spit the mixture out and follow with a rinse of water or water mixed with salt (1/2 teaspoon to 4 cups of water).

- Do not wear dentures.
- Avoid brushing teeth if it irritates gums; wrap clean gauze around your fingers and rub your teeth clean; avoid dental floss.
- Increase your fluid intake.
- Use Tylenol® or whatever analgesic your physician recommends to control pain.

Additional instructions for Stomatitis:



Taste Alterations

Taste alteration is a change in the usual pattern of taste perception. These changes occur frequently during cancer treatment or with some cancers. Treatment and cancer cells are believed to secrete amino acid-like substances that cause these changes. Foods will taste differently, often leading to a change in normal eating patterns and selections of foods. These changes may lead to a diet that will not supply the needed nutrients, resulting in decreased immune system or worse, malnutrition. It is important to recognize and identify these changes and to maintain an adequate diet during treatment. Taste alterations vary greatly among people.

Changes you may experience:

- Increase in a **bitter taste** with food high in amino acid levels such as beef and pork, chocolate, coffee, and tomatoes
- Decrease in sweet taste; more sugar is needed to achieve sweet taste
- An aversion to sweet foods
- A metallic or medicinal taste when eating or may be continually or intermittently unrelated to food intake
- Bad taste in the mouth

Interventions that may prove helpful are:

- Prevent mouth dryness to avoid breakdown of oral tissues by drinking adequate amounts of water and non-irritating liquids at frequent intervals.

- Suck on smooth candy or lozenges to rid mouth of taste sensations; sour substances will stimulate production of saliva if mouth is dry.
- Use spices and flavoring such as mint, cinnamon, lemon or vanilla to enhance taste sensation; avoid spices or seasoning that will irritate mouth.
- Chew sugar-free gum, lemon drops, or mints to mask metallic taste.
- Avoid foods that cause an unpleasant taste; if beef or pork tastes differently, substitute other high protein food, such as cheese, eggs, milk and milk products, chicken and fish.
- Marinate meat in soy or teriyaki sauce.
- Include meats cooked in soups or casseroles.
- Eat meat cold, if better tolerated.

Additional instructions on taste alterations:



Thrombocytopenia — Low Platelet Count

Thrombocytopenia is an inadequate number of platelets, which are cells necessary for blood clotting. Chemotherapy drugs can cause the platelet count to fall to levels below the amount necessary to prevent bleeding. It is a normal and expected side effect of some chemotherapy medications and will subside when treatment is complete. However, Thrombocytopenia can be dangerous. Your healthcare provider will monitor your platelet count by drawing blood and studying the results. You will be informed when platelet counts are expected to be low. Your potential to bleed will increase during this time. A deficiency can cause nosebleeds and bleeding gums, blood in the urine or stool, unusually heavy menstrual flow, or bleeding under the skin, which shows up as bruises.

Normal platelet levels range from 150,000 to 350,000. Bleeding increases as levels fall to:

- 100,000 and below (chemotherapy treatments may be held until platelet counts rebound)
- 50,000 (presents increased potential for bleeding; preventative care should be taken)
- 20,000 (increased risk for spontaneous bleeding; extreme caution should be observed)

Sites where bleeding can occur:

- Skin
- Mucous membranes (nose, mouth, lips)
- Respiratory system
- Gastrointestinal system
- Urinary system
- Intracranial (head) area
- White part of your eye (small blood vessels break)

Spontaneous bleeding may appear as:

- **Petechiae**—small pinpoint dots under the skin
- **Ecchymoses**—areas of dark red, turning to dark blue, spots under the skin from hemorrhages
- **Hematoma**—large collection of blood under the skin that forms after rupture of a blood vessel



Thrush — Oral Candidiasis

Thrush (oral candidiasis) is a fungus infection in the mouth and throat area. The infection is caused by an overgrowth of the fungus *Candida albicans*. *Candida* is normally found in most people's mouths. However, many factors can cause an overgrowth of the fungus, resulting in inflammation and infection. Treatment with antibiotics or chemotherapy drugs can cause the fungus to grow out of control. Minimal use of antibiotics and good oral hygiene are the best preventive measures.

Signs and symptoms:

- White patches appear in the mouth with the following characteristics:
 - White to creamy yellow and slightly raised (look like curds of milk)
 - Not painful unless rubbed off
 - If patches rubbed off, a painful ulcer results
 - Mouth is dry

Risk increases with:

- Antibiotic use
- Low white blood cell counts from chemotherapy
- Poor nutrition
- Diabetes
- Irritation from dentures
- Steroid medication often given with chemotherapy or cancer treatment
- AIDS

Treatment:

- Examination of the plaque from a lesion under the microscope will confirm diagnosis
- Mouthwashes—some with hydrogen peroxide—to cleanse the mouth and soothe the discomfort
- An anti-fungal medicated lozenge may be given
- An anti-fungal medication taken orally or, if the condition is severe, by IV administration

Notify Physician if:

- Pain increases and you are unable to eat or drink
- Signs of infection of ulcers in the mouth
- Fever greater than 100.5° F
- Lesions appear near the vaginal opening
- Severe headache or mental confusion

Additional instructions for thrush:



Vaginal Candidiasis — Yeast Infection

Vaginal candidiasis, a yeast infection, is an inflammation of the vagina caused by a fungus, *Candida albicans*. This fungus is normally found in the mouth, vagina, and rectum of most women. When the vagina's hormone and pH (acid/alkaline) balance is disturbed, the organism multiplies rapidly and causes inflammation and infection. It is estimated that more than 50 percent of all vaginal infections are caused by an overgrowth of *Candida albicans*.

Signs and symptoms:

- White vaginal discharge that is white and resembles lumps of cottage cheese
- Odor which is unpleasant but not a foul odor like some other vaginal infections
- Itching of vaginal lips (labia) and surrounding skin
- Red, swollen, tender vaginal lips from inflammation
- Burning during urination

Causes that promote overgrowth:

- Antibiotic treatment
- Chemotherapy treatments
- Hormone replacement medications
- High carbohydrate intake of sugars and starches
- Hot weather
- Non-ventilating undergarments that hold moisture and heat

- Immunosuppression from drugs or disease
- Diabetes mellitus
- Pregnancy

Preventive measures:

- Keep the vaginal area clean.
- Take showers rather than tub baths.
- Wear underpants or pantyhose with a cotton crotch.
- Don't stay in wet clothing such as a bathing suit.
- Avoid vaginal douches, vaginal deodorants, and bubble baths.
- Limit intake of sugars and alcoholic beverages.
- If overweight, lose weight.
- If diabetic, monitor sugar level closely.
- Avoid overuse of antibiotics that allow overgrowth of fungus.
- Increase your consumption of low-fat yogurt, buttermilk, or sour cream.

Possible complications:

Infection can result in a bacterial infection of the vagina and other pelvic organs if not properly treated.



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Vaginal Dryness & Painful Intercourse

Vaginal dryness, causing discomfort during intercourse, is a common complaint of women after chemotherapy-induced menopause, or postmenopausal women who can not use estrogen replacement. Radiation therapy to the vagina causes loss of stretch of the vaginal tissues that may make penetration uncomfortable along with vaginal dryness. Effective methods to deal with dryness include:

Reducing Vaginal Dryness:

- Avoid scented lubricants or douches, these may irritate the genital tissues.
- Avoid bubble baths, hot tubs with chlorine, or strong bath soaps that can cause dryness to the external genitals.
- Use Replens, a product designed to moisturize the walls of the vagina, about 3 times per week at bedtime. This is not a lubricant for intercourse but is like a facial moisturizer, designed to keep moisture in genital tissues.
- Vitamin E capsules can be broken by puncturing with a pin and applied on the external genitals to reduce dryness and itching.
- For internal dryness that does not respond to the above, the Vitamin E capsules can be used to saturate a tampon to insert into the vagina for several hours before removing. If your white blood count is below normal, this should not be used. Vitamin E in the form of vaginal suppositories can also be purchased at compounding pharmacies.

- Estrogen cream applied locally will reduce dryness; contact your physician, as this requires a prescription. Absorption is local and is also helpful for urinary frequency and burning after urination caused by dryness.
- Estring, a ring of estrogen that is inserted in the vagina for three months without being removed is also helpful for extreme vaginal dryness that does not respond to other treatments. This requires a prescription and has to be approved by your physician.

Reducing Pain from Vaginal Dryness during Intercourse:

- Apply a water-based lubricant before any sexual activity.
- Most women prefer lubricants such as Astroglide, Silken or Moist Again. These products are most like natural lubrication. They spread easily and last longer. These are found in your local pharmacy and do not require a prescription.
- Spread the lubricant generously over the labia, clitoris, into the vagina, on the partner and also on any object that will enter the vagina.
- Avoid petroleum-based lubricants like Vaseline. If your partner is using condoms, they can be damaged with a petroleum-based lubricant.
- Keep lubricants such as Astroglide, close to the bed or anywhere sexual activity may occur. Reapply lubricant during intercourse if needed.

Treatment:

- Diagnosis may be made by observation of a combination of symptoms.
- A sample taken by a physician of the vaginal discharge is sent to a laboratory and viewed under a microscope.
- Anti-fungal medication is prescribed. Medication is now over-the-counter and directions on the package insert should be followed. Continue therapy for the number of days suggested on the package insert, even after the symptoms disappear. (Medication is available in suppositories and creams from Gyne-Lotrimin®, Monistat® and other companies.)
- Ask your physician if your sexual partner needs to be treated at the same time with the cream medication.
- Abstain from sexual intercourse during inflammation.
- If urination causes pain, rinse the outer genital area thoroughly with warm water and apply an anti-fungal cream to the outer vaginal area.
- If the infection is severe, your healthcare provider may prescribe oral medications.

Notify healthcare provider if:

- Irritation is not improving after one week of therapy
- Unusual vaginal bleeding or swelling develops
- Symptoms continue to recur after treatment

Additional instructions:



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Vaginal Infections

Vaginal dryness and loss of elasticity can make intercourse painful and are a chief cause of sexual difficulties for women who have undergone chemotherapy. This is a common and expected side effect. Vaginal dryness tends to increase throughout treatments. If you are pre-menopausal, however, the symptoms gradually diminish several months after chemotherapy treatments are completed if your menstrual periods return. If you are menopausal when your treatments end, you may have an increase in hot flashes, vaginal dryness, and other menopause-related symptoms.

Chemotherapy treatments, as well as anti-hormonal treatments and naturally occurring menopause, cause the ovaries to stop functioning and producing the estrogen and progesterone hormones. How much the ovaries are damaged by chemotherapy depends on the type of drugs used, the dosage, the length of time given, and your age. Hot flashes, vaginal dryness, partial loss of the vagina's capacity to expand, and the absence of menstrual periods are the most commonly recognized symptoms caused by the loss of these female hormones.

The loss of estrogen and progesterone reduces the number of cells lining the vaginal wall causing it to become thin and the area to become very dry. While not medically threatening, vaginal dryness is a symptom that is cause for concern. The dryness not only reduces the pleasure of intercourse, it can become the cause of repeated vaginal

infections caused most commonly by yeast or less commonly by bacteria. Yeast infections cause extreme itching and swelling of the vaginal tissues. The external lips of the vagina itch and become very swollen and red. A thick, white cottage cheese-like discharge is usually present. Vaginal infections can also set up an environment for increased urinary (bladder) infections.

The natural lubrication of the vagina decreases, resulting in:

- itching sensations
- increased potential for vaginal infections
- increased sexual stimulation required for lubrication of the vagina
- uncomfortable intercourse—stinging or burning sensation during or after intercourse
- painful intercourse—may have a bloody discharge after intercourse

Many women who naturally lose estrogen and progesterone through menopause choose to take replacement hormones to ease the symptoms and to prevent the long-term risks of osteoporosis and heart disease. However, use of hormone replacement therapy with breast cancer is very controversial. Most physicians do not recommend estrogen replacement therapy for several years after breast cancer. There are other methods, however, to diminish the pain of intercourse, vaginal dryness, and vaginal infections.

Treatment for painful intercourse caused by vaginal dryness:

- Massage the outer vaginal opening with mineral oil after bathing. Use your fingers and massage the oil into the tissues. This can be done daily until the external dryness improves.
- Use liberal amounts of water-soluble lubricant, Astroglide®, or K-Y Jelly® inside and around the vaginal area and on your partner's penis before intercourse. Do not use Vaseline® or other oil based lubricants that may contribute to yeast infections.
- For severe dryness, use Replens®, a vaginal moisturizer inserted into the vagina, several times a week to keep the vagina moist at all times. Vaginal moisturizers are designed as a lubricant for intercourse.
- Discuss the need for extra foreplay time to increase natural lubrication with your sexual partner.

Painful intercourse caused by the reduction of estrogen and progesterone hormones should be discussed with your partner and your healthcare provider. Your partner needs to understand that this is not diminished interest in the relationship but a physical change caused by your treatment that requires adjustment as a couple. The shared understanding will help both of you to look for solutions to improve the relationship. Extra time may be required during foreplay for your body to adequately lubricate the vagina. The liberal use of a water-soluble lubricant such as Astroglide® may still be necessary. It is also important for you to verbalize to your partner when intercourse is becoming uncomfortable. If you notice a bloody discharge after intercourse and you have tried the above interventions, contact your healthcare provider for additional advice.

Treatment for vaginal infections:

- Avoid the use of strong douche products.
- Avoid bubble baths or strong deodorant soaps.
- Wear cotton-crotch undergarments and panty hose.
- Dry outer vaginal tissues well after bathing or urination.
- Wipe from the front to the back after urinating or passing stool.
- Avoid wearing wet swimsuits for long periods of time.
- Avoid the use of tampons if possible.
- Treat any sign of infection immediately.
- Use an anti-fungal cream or suppositories. Over-the-counter products (Monistat®, Gyne-Lotrimin®, etc.) should be used as the package insert directs. If the infection recurs, your partner may also need to be treated with the cream while you are being treated. Often the partner harbors the fungi with no signs of infection and re-infects you. Home treatments also include vinegar douche (1 tablespoon to 1 quart water), boric acid capsules (size 0 gelatin capsule filled with boric acid and inserted at bedtime for 7 to 14 days) or a yogurt douche. If you have repeated yeast infections, contact your physician for further evaluation.

Bacterial infections often appear as a vaginal discharge with a thin, gray tint and “fishy” odor or by a clear, bubbly type of discharge. The odor seems to be more prevalent after intercourse or during menstruation. There may or may not be itching present. These symptoms should be reported to your healthcare provider for treatment. Bacterial infections require treatment with oral medications. Partners are often treated at the same time according to the specific diagnosis of the type of infection. Some physicians treat the infection by having the patient fill size 0

gelatin capsules with boric acid powder and insert the capsule into the vagina at night for one to two weeks. This treatment adjusts the vaginal acid balance to a level at which the bacteria are brought under control. Ask your healthcare provider about this inexpensive treatment.

Do not hesitate to discuss your problems with vaginal dryness, vaginal infections, and painful intercourse with your healthcare provider. These are side effects caused by chemotherapy or anti-hormonal therapy on your natural hormonal balance. Although they are not life threatening, they decrease your quality of life and you deserve interventions to reduce symptoms.

Additional instructions:



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Weight Gain During Treatment

Chemotherapy may directly or indirectly cause a weight change. Slight changes in weight of three to five pounds are normal. However, losing too much weight or gaining too much weight is of concern as to the reason.

Weight Gain

Many patients undergoing chemotherapy lose weight, but the majority of breast cancer patients gain weight. This seems like a double assault. You have had alteration or a removal of a breast, and then you face potential weight gain. However, the key now is to understand the potential causes and recognize that this is a problem that most breast cancer patients deal with.

What causes the weight gain?

Many reasons have been given and are listed below.

- During treatment there is an increase in fatigue which causes women not to be as active. Decrease in activity and no decrease in calories causes weight gain.
- Some of the medications given cause an increase in appetite.
- Some of the chemotherapy drugs cause an increase in fluid retention, and the weight gained is from fluid-not body fat or muscle.
- Some of the medications contain steroids that increase fatty deposits. The condition will go away when the drugs are discontinued.

- The main cause is from menopause caused by the impact of the drugs on the body's hormone balance-it lowers the estrogens and progesterone levels. A large portion of women who take chemotherapy experience some degree of menopausal symptoms caused from the treatment. The decrease in hormones causes the body to add extra weight. Pre-menopausal women seem to be at higher risk of weight gain than those who are close to menopause or menopausal before treatment began. Menopausal women have already experienced hormonal changes and many have already gained some weight. Science is not clear on what causes menopausal weight gain, but we know that it does happen.

What Can You Do?

- It is essential to understand that the majority of weight gain causes are from the treatment and side effects and not from what you are doing. This allows you to expect some weight gain during treatment and not feel that you have personally caused the problem. There are occasions where some women overeat and cause their weight gain, but this is the exception. Rule number one: Don't blame yourself for weight gain! Do not let numbers on a scale determine your happiness. Stop weighing yourself if it depresses you. Look at your treatment as a time

of change, much like pregnancy, where you will experience changes in your body that you do not feel are very attractive but are necessary. Breast cancer treatment is similar. There is a limited period of time when you will undergo side effects that you do not feel are attractive, yet these changes are necessary for long-term survival.

- Eat a balanced diet high in fiber and low in fat. Increase your intake of vegetables and fruits. Avoid sugary drinks and foods that have empty calories. Think health and not pounds. Eat to create good overall health. Do not go on an extreme calorie restricted diet because of weight gain. You need an adequate amount of calories and nutrition to rebuild healthy cells damaged by chemotherapy. This is not a time for fad diets-high fats or no carbohydrates-this is a time for balance. Dieting adds more stress, and stress is not needed during this time of treatment.
- Keep a supply of healthy snacks at home in the car and in your purse. Drink at least eight glasses or bottles of water a day. When people think fluid weight gain they think it is from drinking fluids, but it is not. Plan some type of regular exercise. However, this is not the time to join a gym and begin a vigorous program while undergoing treatment. Walking is an activity that you can participate in without cost, other than walking shoes. You can select your time and place to suit your schedule. Start your program slowly and gradually add time to your walk. Do not walk on days of infusion or days when you have fever or vomiting. Keep a log of the days you walk, this helps keep you motivated. Walk with a family member, friend or pet if you like company. Purchase a portable tape or CD player and use this as a time to listen to your favorite music or inspirational messages

if you prefer to be alone. Do not exercise two hours before bed time, as this could prevent you from falling to sleep. Studies with breast cancer patients have proven that walking elevates mood, decreases depression, decreases insomnia and decreases weight gain. When you begin a walking program think about general health and not weight loss as the goal.

Recovery from breast cancer and cancer treatment is a journey. It is a time when you can choose to add things during your journey that will improve your life and when you reach the end of treatment you will have skills that will continue to enhance the quality of your life. At this time, think health and not pounds. Think of healthy diet and exercise as tools that will facilitate your journey through breast cancer treatment and lead you into recovery with new, healthy life skills.



MEDICATIONS



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Chemoprotective Agents

During chemotherapy administration your physician may order drugs to protect or decrease the side effects of chemotherapy. A chemoprotective drug protects the body from potentially serious side effects.

Zinecard® (dexrazoxane) was approved by the FDA in 1995 to protect the heart during administration of drugs that may be toxic to the heart. It may be administered to prevent damage to the heart muscles with Adriamycin® (doxorubicin). The medication is most often used when the higher dose levels of Adriamycin® would benefit a patient.



Chemotherapy — How Can We Tell If It's Working?

If surgery is performed and there is no evidence of disease in any other part of your body, adjuvant chemotherapy (added to surgery to increase survival) is given. Adjuvant chemotherapy is evaluated for effectiveness by observing an elevated tumor marker if it was present. If the tumor marker falls into normal range this will be a sign that the chemotherapy was effective. Many women whose breast cancer is detected early have no elevated tumor markers present. Evaluation is based on the history of clinical trials that the chemotherapy selected for the type of cancer is the most effective known treatment for breast cancer.

For women who receive neoadjuvant chemotherapy (chemotherapy given before surgery) there is tumor present in the breast that can be monitored for its response to chemotherapy. Women who have metastatic (distant parts of the body) disease also have cancer that can be imaged for response to chemotherapy. Evaluation is usually made after two or three cycles of chemotherapy to determine the response of the tumor.

Evaluation will be made by repeating previous tests-blood tests, CT scan, MRI-and comparing the tests to see if the disease has responded.

Response to chemotherapy is defined in four different ways:

1. Complete Response

A complete response is when all of the cancer disappears and there is no evidence of disease. If a tumor marker was elevated in the blood and it fell into normal range, this is also another measurement of a complete response.

2. Partial Response

If the tumor is still in the body and has decreased in size, but a percentage of the disease still remains, the chemotherapy has yielded a partial response. A tumor marker in the blood may or may not have fallen into the correct range.

3. Stable Disease

Stable disease is when the cancer has either grown or decreased in size and the tumor marker has not changed significantly.

4. Disease Progression

The disease has increased. There is more cancer than before treatment. A tumor marker, if present, shows that the tumor marker is increasing rather than decreasing.

It is important that you keep regularly scheduled appointments and communicate openly with your healthcare provider. Report:

- Any new lump, rash or discoloration in the surgical area
- If you have had a previous lumpectomy, breast discharge
- Any enlargement of nodes in the underarm area, above the collarbone and/or right below the collar bone
- Any chronic pain in the body that does not go away after several weeks
- Any acute sudden pain
- Any change in balance, numbness in arms or legs, inability to control urine or mental confusion
- Chronic nausea or episodes of vomiting
- Weight loss that is unintentional
- No appetite
- Yellow tones to your skin or whites of your eyes
- Blood in any body fluids, urine, phlegm and/or stools



Chemotherapy — How Long Is Treatment Given?

After you have received all of your final pathology reports, your medical oncologist will prescribe the most appropriate chemotherapy for your individual tumor. Many factors will be included in making the decision:

- Type of cancer
- Tumor markers, such as estrogen/progesterone status, HER2
- How fast the tumor was growing
- If tumor has invaded surrounding tissues or other organs of the body
- Your menopausal status or age
- Your general health

After evaluating these factors the medical oncologist will look at the drug or drug combinations that are proven most effective against your type of disease in previous clinical trials. On some occasions you will be given the opportunity to participate in a new clinical trial for your type of cancer.

The length of chemotherapy administration will also be determined using all of your individual characteristics and previous clinical study trials to select the optimal dosing for you.

Schedule

Most chemotherapy is administered in cycles. The drug(s) will be given to destroy the cancer cells, and then a period of rest will allow the body time to recover from the damage.

Then the drug(s) will be given again. The physician then determines how much of the drug(s) will be given, how often and how long you will receive treatment.

Chemotherapy may be a single drug or a combination of drugs. The drug(s) may all be given on the same day, several consecutive days, or (on occasion) continuously as an outpatient. Drug administration time can last from minutes to hours depending on the drug. Time between doses also varies according to the drugs. It may be weekly, biweekly, every three weeks or monthly.

Dose dense chemotherapy is a term used when the total amount of drugs is given on a more frequent schedule. (Example: for a protocol that is every three weeks, it may be given every two weeks, reducing the total length of treatment time.). Dose dense administration often requires support with other medications to maintain the white or red blood counts in normal range to allow for the earlier administration. Dose dense does not increase the total dose of the drug you receive; the dose of the drug remains the same. It only impacts how often it is given.

It is important to remember that medical oncologists look at national data from previous studies or studies in progress to determine which type of schedule is most effective.

Dose of Drug(s)

How much of a drug will be given is also determined by national studies. However, the formula is usually calculated using your body weight and height. The drug dosage for each person is determined individually for many of the drugs used in cancer treatment.

How Long Will Chemotherapy be Given?

The number of chemotherapy treatments has also been determined by research and clinical trials.

With breast cancer, if previous surgery has removed the tumor and there is no evidence of disease, your physician will tell you how many treatments and when you will complete your treatments.

In neoadjuvant (chemo given before surgery) chemotherapy, the physician can monitor the cancer's response to the drugs with a CT scan, MRI, or bone scan disease. Response of your individual tumor to the treatment will determine how many treatments you will receive. Length of treatment time depends solely on the response of your tumor to the drugs and cannot always be predicted.

For metastatic disease (cancer that has spread to distant parts of the body) when surgery is not an option, the goal of chemotherapy may be to give treatments to control the spread of the cancer-not necessarily to eradicate the cancer from the body, but to maintain quality of life. The physician determines how much and how many drugs and how often and includes quality of life as an important decision-making factor.

Summary:

Medical oncologists use a variety of factors to determine the optimal treatment for each patient. Chemotherapy decisions cannot take a cookie-cutter approach-they need an individual assessment factoring in all components to determine which treatment drugs and length of treatment is most effective for your individual cancer.

My Chemotherapy Drugs and Schedule:

- Type:** Adjuvant Chemotherapy
 Neoadjuvant Chemotherapy
 Dose Dense

Name of Chemotherapy Drugs:

Name of Pre-medications:

Drug Schedule:

Name of Person to Contact for Information About Chemotherapy Questions:

Telephone _____

Place of Chemotherapy Administration:

Address:

Telephone:

Date of First Treatment:

Length of Each Treatment:

Special Instructions:

Need a Driver If Pre-medications Taken at Home:

Yes No

Need a Driver after Chemotherapy:

Yes No



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Dose-Dense Chemotherapy

Dose-dense chemotherapy is a term used for giving the same amount (dose) of chemotherapy in a shorter period of time. Traditionally, chemotherapy for breast cancer was given on a three-week schedule. The main reason for the three-week wait was that chemotherapy reduced the white blood cell count because it destroyed some of the healthy white blood cells during treatment. This reduced the patient's immunity (the natural ability of a person to resist infections).

The major concern after chemotherapy treatment was increased potential to get infection. It took about three weeks for the white blood cell count to come back into normal range. Then another cycle of chemotherapy would be given. The ideal goal of treatment is for only normal cells to recover and not the cancer cells. One way to achieve this is to give the chemotherapy when the cancer cells are still most vulnerable. This is now possible with a drug called Neupogen® (chemical name: filgrastim) that provides support for the white blood cells to return to normal range more rapidly. When Neupogen® is given after chemotherapy, the next dose of chemotherapy can be given in two weeks instead of the usual three weeks. This is called dose-dense chemotherapy. With dose-dense chemotherapy, the same amount of drug is administered over a shorter period of time using Neupogen® to support the white blood cells.

Questions about Dose-Dense Chemotherapy:

What drugs will I be receiving?

On what schedule will I receive them?

What are the major side effects from dose-dense therapy compared to traditional therapy?



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Evaluating Cancer's Response to Chemotherapy

After you complete chemotherapy your physician will be evaluating your response to therapy. The tests used to monitor for effectiveness and response are the same tests used to diagnose your cancer.

Physical Exam

The physician will perform a physical exam to check for any signs of lumps or swelling. They will also be observing your skin to see if you have any signs of cancer on the skin (skin metastasis), which may look like small mosquito bites that may itch, or they may appear like a rash on the skin.

Patient History

Healthcare providers depend on you to report new signs and symptoms for their evaluation. From your reports, they will often determine if you need additional tests.

Complete Blood Count (CBC)

A regular drawing of your blood to have CBC will help them evaluate any changes that monitor organ function (example: liver enzymes).

Tumor Markers

A tumor marker is a test that monitors for elevation of certain molecules in the blood or other body fluids that may be elevated with cancer. Elevation in a particular marker is not an absolute diagnosis of a disease. Tumor markers are helpful in evaluating the

effectiveness of chemotherapy to see if a tumor marker decreases or increases after treatment. A tumor marker used in breast cancer is CEA (carcinoembryonic antigen).

Diagnostic Scans:

- **Bone Scan** - A bone scan can be used to determine if cancer has decreased in the bones if it was present before cancer.
- **Magnetic Resonance Imaging (MRI)** - An MRI can also be used to monitor response of cancer detected by a previous MRI.
- **CT Scan** - A CT scan can also evaluate if chemotherapy decreased any cancer found before treatment.
- **Positron Emission Tomography (PET) Scan** - A PET scan can also detect a reduction in previously existing cancer.

**Individual Patient
Surveillance after Chemotherapy**

Physician Appointment Schedule:

1st Year:

2nd Year:

3rd Year:

Routine Tests at Appointment:

- Physical Exam
- Patient History
- CBC
- Tumor Markers

Diagnostic Tests :

- Bone Scan
- CT Scan
- MRI Scan
- PET Scan

Other Tests:

- Mammogram (frequency)

- Bone Density (frequency)



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Hormonal Therapies

Treatment for breast cancer may include a type of medication commonly called hormonal therapy. Cancer's growth can often be controlled by hormonal medications if your cancer has receptors on the surface of the cell that allows hormones to stimulate its growth. If your cancer has tested positive for estrogen or progesterone receptors, you may receive a hormonal medication as part of your treatment plan.

In the past, physicians would remove the ovaries (major source of estrogen and progesterone) in premenopausal women and the adrenal glands (major source of production hormone production) in postmenopausal women to block their normal hormones from influencing the cancer's growth.

Today there are a number of drugs that block hormone production or prevent hormonal stimulation to the breast. Each drug has a different way of blocking estrogen and each has its advantages and disadvantages.

The most common hormonal therapies to treat breast cancer patients are:

<u>Brand Name</u>	<u>Generic Name</u>
Arimidex®	anastrozole
Aromasin®	exemestane
Fareston®	toremifene
Faslodex®	fulvestrant
Femara®	letrozole
Megace®	megesterol
Nolvadex®	tamoxifen
Fareston®	toremifene

Your physician will determine which drug is the best treatment for you. These drugs are used when women have positive ER/PR receptor tests that are performed on the tumor at diagnosis. Whether you are pre or post menopausal will also determine the drug that will be prescribed.

The good news about hormonal therapy is that the side effects are minimal compared to chemotherapy. There is no hair loss or nausea and vomiting. They do not kill cancer cells; instead, they block the stimulating effect of hormones on the growth of the cancer. The major side effects of Tamoxifen, the most commonly used drug for many years, are hot flashes and mood swings. Each drug your physician orders will have a unique component to the control of your cancer. Your healthcare provider will explain the way the drug works and the expected side effects.

Questions about hormonal drugs:

- What is the name of the drug I will be prescribed?
- How long will I take the medication?
- What are the advantages of this drug?
- What are the expected side effects?
- What side effects should I report to you after I start the medication?



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Immune Therapy

The body's immune system is the first line of defense against illness caused by infection. The system is a complex network of specialized organs, lymph vessels and lymph nodes that operates separate from the vascular (blood) system. The immune system works to clear infection from the body.

The word "lymph" in Greek means a pure, clear stream. Lymph fluid is clear fluid that circulates in lymph vessels found throughout the body like the blood system. This clear fluid contains white blood cells and lymphocytes. The lymph system bathes the body's cells with this clear fluid, which is removed from the cells by the lymphatic vessels that eventually dumps the fluid into the heart where it enters circulation in the blood. Along the path of the lymphatic vessels are small pin-point to pea-sized lymph nodes. Lymph nodes are small, kidney-shaped lymphoid tissues that produce and contain a large number of B and T cells—cells that destroy micro-organisms and abnormal cells. When a node is highly active you may feel an enlargement of the node. You are probably familiar with lymph nodes in your neck that swell when you have an infection.

There are lymphoid organs in the body that support the lymphatic vessels: the tonsils and adenoids, the thymus gland, the appendix, the spleen and the bone marrow. Together with the lymphatic vessels and nodes, these lymphoid organs work to protect us against infections.

Lymphocytes (lymph cells)

The two major classes of lymphocytes are B cells, which grow to maturity in the bone marrow, and T cells, which mature in the thymus, high in the chest behind the breastbone.

B cells are part of what is known as the antibody response. The B cells identify and link themselves to foreign proteins that enter the body and neutralize or destroy them.

Certain T cells are in the blood and lymph to guard against foreign invaders. If recognized as foreign, T cells attack and destroy the foreign (diseased) cell. They coordinate the overall immune response.

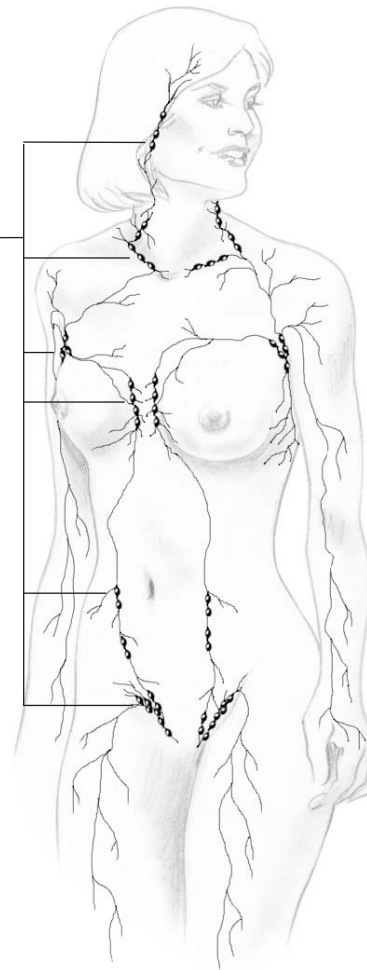
Monitoring Your Immune System during Chemotherapy:

The immune system is the first defense against invading illnesses. During chemotherapy administration you will hear much about how the drugs lower your immune system, making it more vulnerable to invading infections. For this reason your healthcare provider will be monitoring your blood work for signs that your immune system needs support with other medications.

Your physician will monitor your immune system by:

- Regular blood tests (complete blood count called a CBC)
- Fever (report any fever over 100.5 degrees)
- Other signs and symptoms of infection without fever (when the immune system is lower, fever may not be a symptom):
 - Burning or painful urination or blood in the urine
 - A sore that does not heal
 - Yellow or green phlegm
 - Persistent cough
 - Pain or tenderness in the abdomen, chest, upper back or any area of the body that is persistent
 - Shortness of breath
 - Overwhelming fatigue

Lymph Nodes



Tonsils & Adenoids

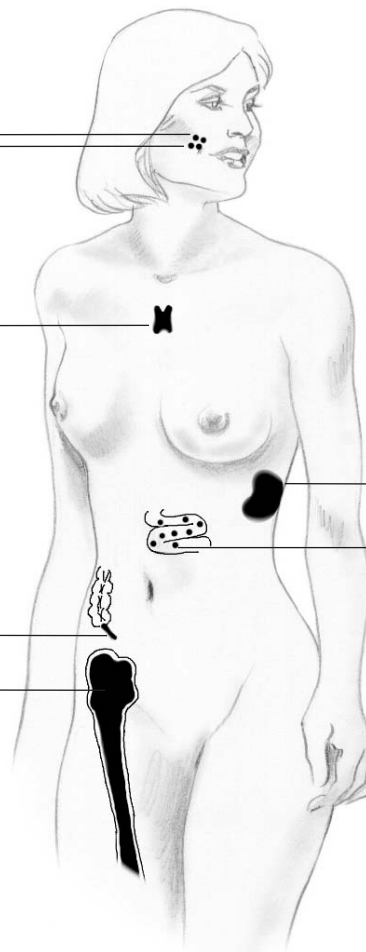
Thymus

Spleen

Peyer's Patches

Appendix

Bone Marrow



Major Immune System Production Sites



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Targeted Chemotherapy

In past years, chemotherapy has largely been based on the principle of killing rapidly dividing cells because cancer is a rapidly dividing cell. Unfortunately, chemotherapy also kills healthy cells that rapidly divide causing multiple side effects. Researchers are currently looking at different types of treatment that target only the cancer cells and avoid healthy cells.

Targeted therapy is based on identifying features found in cancer cells that are unlike those in normal cells. New treatments are based on the differences found in the cancer cells and treatment targets this particular feature, which avoids the damage to healthy cells. New types of targeted therapy are called monoclonal antibodies and anti-angiogenesis.

Monoclonal antibody therapies are developed by determining what type of antigens are found on the cell surface of a cancer cell. Then the scientists link it with a protein that attaches itself to the antigen. The result is called a monoclonal antibody that when given to a patient, is allowed to sneak into the cancer cell receptors unnoticed and disrupt the function of the cell. Yet, a monoclonal antibody does not harm normal cells.

The following are monoclonal antibodies presently approved for use:

- Alemtuzumab
- Gemtuzumab ozogamicin
- Rituximab
- Trastuzumab
- Ibritumomab Tioxetan

Anti-angiogenesis (angio=vessel or vein; genesis=new) drugs target the blood vessels that supply oxygen to the cells, ultimately causing the cells to starve. Cancer cells depend on new blood vessel development to grow. Currently there are more than 20 therapies being tested in clinical trials that are anti-angiogenesis compounds. Researchers are working to learn the safety and effectiveness of these medications.



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Adriamycin® (doxorubicin)

Adriamycin® is the most commonly used brand name of doxorubicin and belongs to a group of medications known as anti-neoplastics (anti=against, neoplastic=new tissue formation). It may be used in the treatment of breast cancer.

Before Adriamycin® treatment begins, tell your physician if you are:

- Allergic to any medicine, either prescription or non-prescription
- Pregnant or plan to become pregnant
- Breastfeeding an infant
- Presently taking any other medications, prescription or non-prescription
- Have a history of heart disease, liver disease, herpes zoster (shingles) or recent exposure to chickenpox
- Have ever received Adriamycin® before in the treatment of cancer

During Adriamycin® treatment, you should:

- Drink extra fluids to increase the amount of urine production and prevent kidney problems
- Continue treatment even if nausea, vomiting, or fatigue are experienced

Precautions while taking Adriamycin®:

- Return to your physician as requested for regular check-ups

- While receiving the drug and several weeks after completion, do not have any immunizations or vaccinations; other people in your household should also avoid having immunizations since they could pass the infection on to you
- Avoid people with colds, flu, stomach viruses, or any contagious illness to prevent infection

Side effects of Adriamycin® that should be reported to your physician immediately:

- Fast or irregular heartbeat
- Fever greater than 100.5° F or chills
- Redness, pain, or swelling at the site of administration of drug
- Shortness of breath
- Wheezing
- Nosebleed, blood in urine, or blood in stool

Side effects that should be reported to your physician within 24 hours:

- Stomach or side pain
- Skin rash or itching
- Sores in your mouth or lips
- Constant joint pain
- Swelling of feet and lower legs
- Unusual bruising or pinpoint spots on body



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Ambien® (zolpidem)

Ambien® is used short-term to treat insomnia (to help you fall asleep and stay asleep for a proper rest). It usually begins working within 15 minutes. This medication is usually taken for only 7-10 days. Follow the directions on your prescription label carefully, and ask your doctor or pharmacist to explain any part you do not understand. Do not take a larger dose, take it more often, or for a longer period than your doctor tells you to.

Inform your healthcare provider:

- If you are allergic to zolpidem or any other drugs.
- What prescription and nonprescription medications you are taking, especially allergy preparations, antihistamines, barbiturates, cold medicines, medications for depression or seizures, pain relievers, tranquilizers, and vitamins.
- If you have, or have ever had kidney or liver disease; a history of alcoholism, drug abuse or depression; asthma, breathing problems, or allergies.
- If you are pregnant, plan to become pregnant, or are breastfeeding. If you become pregnant while taking zolpidem, call your doctor.

Precautions:

- This drug will make you drowsy. Do not drive a car or operate machinery until you know how this drug affects you.

- Alcohol can add to the drowsiness caused by this drug.
- Do not take a missed dose when you remember it. Skip it completely; then take the next dose at the regularly scheduled time.

Common side effects:

- Drowsiness
- Upset stomach
- Vomiting
- Constipation
- Diarrhea
- Headache
- Dry mouth
- Muscle aches

Call your healthcare professional immediately if you experience:

- Skin rash
- Itching
- Fast or irregular heartbeat
- Chest pain
- Difficulty breathing
- Fever
- Behavior changes
- Confusion



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Anzemet® (dolasetron)

Brand Name: Anzemet®

Anzemet® is a drug used to prevent or decrease nausea and vomiting associated with surgery or chemotherapy.

Method Administered:

- I.V. (into vein)
- Injection
- P.O. (by mouth)

Side Effects:

- Diarrhea
- Abdominal or stomach pain
- Headache
- Dizziness
- Light-headedness
- Fever or chills
- Fatigue

Notify Physician of These Side Effects:

- High or low blood pressure
- Blood in urine
- Painful urination
- Chest pain
- Fast heartbeat
- Severe stomach pain
- Rash, hives or itching
- Swelling of face, feet or lower legs
- Trouble breathing

Special Instructions:



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Aredia® (pamidronate disodium)

Aredia® (uh-ree-dee-uh) is a treatment used in patients with breast cancer whose disease has spread to the bones. Aredia® is not chemotherapy but is a bisphosphonate (drug used to treat bone deterioration). Therefore, it does not cause the side effects of chemotherapy. Aredia® helps reduce the chance of bone complications that include fractures, surgery to bone, and radiation to bone. It is a calcium regulator and is used to treat high calcium levels.

Aredia® can be effective in treating bone complications regardless of whether you have experienced problems or not. It can decrease bone pain in some breast cancer patients. Studies have also shown that some people needed fewer doses of pain medication or were able to change from narcotics to over-the-counter pain relievers after Aredia® administration.

Aredia® is given intravenously (IV) along with the other cancer chemotherapy treatments you may be receiving. For breast cancer that has spread to the bones, Aredia® is given over a two-hour period, every three to four weeks in your doctor's office or clinic.

Side effects that may occur with Aredia®:

- Nausea
- Diarrhea
- Increased bone pain

Special instructions during Aredia® treatment:



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Aromasin[®] (exemestane)

Brand Name: Aromasin[®]

Aromasin[®] is a drug used to treat breast cancer. It prevents the formation of the female hormone estradiol by interfering with the aromatase enzyme that is essential for production of the hormone. Many breast tumors are "estrogen sensitive," meaning that the hormone estrogen makes them grow. Aromatase inhibitors help to prevent the growth of these tumors by lowering the amount of estrogen in the body.

Method Administered: P.O. (by mouth)

Side Effects:

- Fatigue
- Hot flashes
- Pain at tumor site
- Nausea
- Depression
- Difficulty sleeping
- Increased appetite
- Weight gain
- Increased sweating

Notify Physician of These Side Effects:

- Severe hot flashes
- Difficulty sleeping
- Depression

Precautions:

Keep taking the drug even though you are feeling well. Take drug after eating.

Special Instructions:



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Ativan® (lorazepam)

Ativan® is used to relieve anxiety, insomnia, nausea and vomiting from cancer treatment. Do not take a larger dose, take it more often than prescribed, or for a longer time than your doctor tells you to. Do not stop taking this medication without talking to your doctor. Stopping the drug suddenly can worsen your condition and cause withdrawal symptoms (anxiousness, sleeplessness, and irritability). Your doctor probably will decrease your dose gradually.

Method Administered:

- P.O. (by mouth)
- I.V. (into a vein)
- I.M. (into a muscle)

Inform your physician before taking Ativan® if you:

- Have or have ever had glaucoma
- Have seizures
- Lung, heart, or liver disease
- Are pregnant, plan to become pregnant or are breast-feeding. If you become pregnant while taking lorazepam, call your doctor immediately.

Inform your physician if you are taking prescription or nonprescription medications for:

- Depression
- Seizures
- Pain

- Parkinson's disease
- Asthma
- Colds or allergies
- Muscle relaxants
- Oral contraceptives
- Probenecid (Benemid)
- Especially antihistamines
- Digoxin (Lanoxin)
- Levodopa (Larodopa, Sinemet);
- Rifampin (Rifadin)
- Sedatives
- Sleeping pills
- Theophylline (Theo-Dur)
- Tranquilizers
- Valproic acid (Depakene)
- Vitamins

These medications may add to the drowsiness caused by lorazepam.

Warning:

- Alcohol can add to the drowsiness caused by this drug
- Cigarette smoking may decrease the effectiveness of this drug
- If you take several doses per day and miss a dose, skip the missed dose and continue your regular dosing schedule. Do not take a double dose to make up for a missed one.



BCNU[®] (carmustine)

BCNU[®] is a chemotherapy drug used in the treatment of cancer. It belongs to a group of medicines known as alkylating agents. Some treatment plans for breast cancer may include BCNU[®] as one of several drugs used. The drug is given by an IV needle into a vein or into a central port (IV device under the skin).

Before BCNU[®] treatment begins, tell your physician if you are:

- Allergic to any medicine, either prescription or non-prescription
- Pregnant or plan to become pregnant
- Breastfeeding an infant
- Presently taking any other medications, prescription or non-prescription
- Have a history of heart disease, liver disease, herpes zoster (shingles), or recent exposure to chickenpox
- Have ever been treated with x-rays or other cancer medications

During treatment with BCNU[®] you should:

- Drink extra fluids to increase urine production and prevent kidney problems
- Continue treatment even when nausea, vomiting, and/or fatigue occur
- Keep your physician/nurse informed of side effects you are experiencing

Precautions while taking BCNU[®]:

- Return to your physician as requested for regular check-ups
- While receiving the drug and several weeks after completion, do not have any immunizations or vaccinations; other people in your household should also avoid having immunizations, since they could pass the infection on to you
- Avoid people with colds, flu, stomach viruses, or any contagious illness to prevent infection

Expected side effects of BCNU[®]:

- Loss of appetite with change in taste of foods
- Nausea
- Temporary loss of hair in some people
- Fatigue

Side effects of BCNU[®] that should be reported to your physician immediately:

- Redness, pain, or swelling at the site of administration of drug, either during or afterwards
- Fast or irregular heartbeat
- Fever over 100.5°F, chills, sore throat
- Wheezing
- Nosebleed which cannot be stopped in 15 minutes, blood in urine, vomit, or stool
- Inability to urinate

Side effects that should be reported to your physician within 24 hours:

- Swelling or puffiness of face, hands, or feet
- Decreased urine output
- Sores in the mouth or on the lips
- Flushing of the face
- Shortness of breath
- Extreme fatigue

Note:

BCNU[®] has a delayed response of lowering the blood counts; usually the lowest counts occur in 4 - 5 weeks after the drug is given. Most chemotherapy drugs lower the blood counts in approximately two weeks. **BCNU**[®] lowers the platelets, in addition to the white blood cells, causing a tendency to bleed freely. The blood counts remain low for an extended period of time, usually 1 - 2 weeks.

Special instructions during BCNU[®] treatments:



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Cytosan[®] (cyclophosphamide)

Commonly used brand names: Cytosan[®] and Neosar[®]

Cytosan[®] is a chemotherapy drug used in the treatment of breast cancer.

Before Cytosan[®] treatment begins you should inform your physician if you are:

- Allergic to any medication, either prescription or non-prescription
- Pregnant or plan to become pregnant
- Breastfeeding an infant
- Taking any other medication, prescription or non-prescription
- Have a history of kidney disease, liver disease, herpes zoster (shingles), or have been recently exposed to chickenpox
- Have been treated with x-rays or other cancer medications

During treatment you should:

- Take medication as recommended by your physician
- Drink extra fluids to increase urine production
- Contact your physician, if you take this medication by pill and vomit
- If you miss a dose of this medication, do not take the missed dose or double the next dose; instead go back to your regular dosing schedule and check with your physician

- Keep all appointments for check-ups with physician

Precautions while taking Cytosan[®]:

- Do not have any immunizations or vaccinations while being treated
- Avoid people with colds, flu, viral illnesses, and any contagious diseases to prevent infection
- Do not begin any extensive dental work

During treatment you may experience:

- Darkening of skin and fingernails
- Loss of appetite
- Nausea
- Change in blood counts

Side effects that should be reported to your physician immediately:

- Blood in urine
- Painful urination
- Fever over 100.5° F, chills or sore throat
- Blood in stools, nosebleeds, bruising, or pinpoint bruise spots on body

Side effects that should be reported to your physician:

- Cough or shortness of breath
- Dizziness, confusion, or agitation
- Rapid heartbeat
- Frequent urination
- Joint pain
- Redness, pain, or swelling at the site of drug administration
- Stomach or side pain
- Sores in mouth or on lips
- Unusual thirst
- Yellow eyes or skin

Additional instructions while taking Cytoxan®:



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Decadron® (dexamethasone)

Commonly used brand names:

**Decadron®, Dexasone®, Dexone®,
Hexadrol®, SK-Dexamethasone®**

Decadron®, a corticosteroid, is a drug used often in chemotherapy treatment regimens. Corticosteroids are naturally occurring hormones produced by the adrenal cortex that serve in various functions of regulating carbohydrate, fat and protein metabolism, while reducing inflammatory responses in the body. The drugs are synthetic forms of the hormone. Many treatment programs for breast cancer may include the use of **Decadron®**. The drug may be given by mouth, by injection, or into a vein by an IV infusion.

Before taking Decadron®, inform your physician if you are/have:

- Pregnant
- An infection or sore that doesn't heal
- History of high blood pressure
- History of diabetes
- Stomach ulcer
- History of heart trouble
- History of mental illness

Proper use of Decadron®:

- Take medication as ordered by your physician. Do not increase or decrease dose without consulting the physician. Do not stop taking the medication without

physician's consent. This medication's dosage is gradually reduced before stopping.

- Take medication with food.
- Do not take late in the afternoon or at night because it may keep you awake.
- If you need emergency medical care, it is essential that whomever treats you is aware of your use of Decadron®.
- If you are a diabetic taking insulin-type medications, monitor your blood sugar carefully; additional insulin may be required during treatment.
- Do not receive immunizations or vaccinations without physician's consent.

Contact your physician if you experience:

- Sleeplessness
- Nausea or vomiting and cannot take medications
- Mental changes or hallucinations (false or distorted perceptions of thinking)
- Shortness of breath
- Swelling in feet and legs
- Changes in your vision
- Stomach burning or pain
- Wound that does not heal
- Dizziness or fainting
- Extreme fatigue
- Black, tarry-colored stools
- Excessive bruising or pinpoint spots on body



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Ellence[®], Pharmorubicin PFS[®] (epirubicin)

Name Brands: Ellence[®], Pharmorubicin PFS[®]

Epirubicin is a drug used to treat cancer. It is an anthracycline a antibiotic based drug that blocks DNA production in a tumor.

Method Administered: I.V. (into a vein)

Side Effects:

- Lack of menstrual periods
- Nausea and vomiting
- Diarrhea
- Hot flashes
- Darkening of soles, palms, or nails
- Loss of appetite or weight loss
- Low white blood counts
- Hair loss
- Red urine
- Sore mouth

Notify Physician of These Side Effects:

- Severe vomiting
- Dehydration
- Fever
- Evidence of infection
- Shortness of breath
- Injection site pain
- Fast or irregular heartbeat
- Chills
- Redness or shortness of breath

- Swelling of feet and lower legs
- Diarrhea for over 24 hours
- Unusual bleeding or bruising
- Wheezing
- Joint pain
- Side or stomach pain
- Skin rash or itching
- sores in mouth

Precautions: Tell your physician if you are taking Tagamet[®] (cimetidine)

Special Instructions:



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Epogen[®], Procrit[®], Eprex[®] (epoetin)

Brand Name: Epogen[®], Procrit[®], Eprex[®]

Epogen[®] is a drug given to stimulate the production of red blood cells. This increases the hemoglobin that reduces fatigue. It is used after administration of some chemotherapy drugs that cause a decrease in the red blood cells.

Method Administered: Injection

Side Effects:

- Tiredness and weakness
- Tingling
- Burning or prickling sensation
- Loss of strength or energy
- Muscle pain

Notify Physician of These Side Effects:

- Chest pain
- shortness of breath
- Seizures
- Coughing; sneezing
- Sore throat
- Fever
- Weight gain
- Swelling of legs, arms, feet or hands

Precautions: Epogen[®] may cause seizures, especially during the first 90 days of treatment; avoid driving, operating heavy machinery, and any other activities that may pose danger if a seizure occurred while you performed them.

Special Instructions:



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Faslodex® (fulvestrant)

Brand Name: Faslodex®

Faslodex® is a drug used to block estrogen receptors on breast cancers.

Method Administered: I.M. (injection into a muscle)

Side Effects:

- Nausea
- Feeling listless or tired
- Vomiting
- Constipation
- Diarrhea
- Abdominal pain
- Headache
- Back pain
- Hot flashes
- Sore throat
- Pain at injection site
- Flu-like symptoms
- Pain in chest or pelvis

Notify Physician of These Side Effects:

- Bloating or swelling of face hands, legs and feet
- Tingling in hands or feet
- Unusual weight gain or loss

Precautions: Notify physician if taking blood thinners such as Coumadin®.

Special Instructions:



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Femara[®] (letrozole)

Femara[®] is a hormonal therapy for advanced breast cancer in postmenopausal women. Patients may have previously received tamoxifen or another anti-estrogen therapy that was unable to further control their cancer. Clinical studies have shown that Femara[®] can safely and effectively shrink tumors or stabilize the disease in some patients.

Some breast cancers are found to be hormone-dependent, meaning that estrogen increases their growth. These hormone-dependent cancers contain estrogen receptors (ER). When estrogen attaches to these receptors, it can cause cancer cells to grow. Cancers with these receptors are known as estrogen receptor-positive (ER+). Cancer tumors may also be estrogen receptor-negative (ER-), which means that the cancer grows without stimulation from estrogen. Hormonal therapies are not as effective in patients with ER- tumors. Your healthcare provider will tell you if your tumor is ER positive or ER negative.

Hormonal therapy is directed at preventing estrogen from causing the cancer cells to multiply. Femara[®] works in an entirely different way than other hormonal therapies such as Nolvadex[®] tamoxifen or Megace[®] (megestrol acetate). It slows down an enzyme, called aromatase, which reduces the total amount of estrogen in the body (circulating estrogen levels), thereby limiting the amount of estrogen that can reach the cancer cells.

In postmenopausal women, the aromatase enzyme causes the body to produce estrogen from other hormones, known as androgens. Without aromatase, androgens cannot be changed into estrogen. The key point to understand is that Femara[®] specifically blocks aromatase from converting androgen into estrogen. Consequently, Femara[®] significantly lowers the amount of estrogen in the bloodstream, thus allowing the cancer cells throughout the body to receive only low levels of estrogen. Furthermore, because Femara[®] acts specifically on aromatase, it does not affect the production of other hormones.

Femara[®] is a pill taken by mouth. Reports of weight gain and vaginal bleeding were far less than some other anti-estrogen drugs. The most common complaints reported from women taking Femara[®] were musculoskeletal pain, occasional problems with nausea, headaches, fatigue, or shortness of breath.

Additional information while taking Femara[®]:



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Folex[®] PFS (methotrexate)

Folex PFS[®] is a drug used in chemotherapy treatment plans for breast cancer and some medical conditions that are not cancerous, such as psoriasis.

Before methotrexate treatment begins tell your physician if you are/have:

- Allergic to any medication, either prescription or non-prescription
- Pregnant or plan to become pregnant
- Breastfeeding an infant
- Taking any other medication, prescription or non-prescription
- Have a history of kidney disease, liver disease, herpes zoster (shingles), or recent exposure to chickenpox

During administration of Folex PFS[®] you should:

- Drink extra fluids to increase urine production.
- Return to your physician for check-ups as requested.
- If you are receiving medication by mouth and miss a dose, do not double the next dose; go back to your regular dosing schedule and check with your physician.
- Do not drink alcohol while receiving this medication.
- Do not sunbathe or use a sunlamp.
- Do not take aspirin or ibuprofen.
- Do not receive any vaccinations or immunizations.

- Avoid people with colds, flu, viruses, or contagious illnesses to prevent becoming infected.

Side effects that should be reported to your physician immediately:

- Black, tarry stools
- Bloody vomit
- Diarrhea that lasts over 24 hours
- Fever over 100.5° F
- Chills
- Sores in mouth or on lips
- Stomach pain
- Unusual bleeding, bruising, or pinpoint spots on skin
- Seizures
- Dizziness

Side effects that should be reported to your physician:

- Blood in urine
- Blurred vision
- Confusion
- Cough or shortness of breath
- Dark-colored urine (looks like tea)
- Headache
- Joint pain
- Swelling of feet or legs
- Yellow eyes and skin



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5-FU[®] (fluorouracil)

Commonly used brand names:

Adrucil[®] and 5-FU[®]

5-FU[®] is a drug that belongs to the group of chemotherapy drugs known as antimetabolites (anti=against, metabolites = cell function). It is given into a vein to destroy cancer cells.

Before 5-FU[®] treatment begins, inform your physician if you are:

- Allergic to any medication, either prescription or non-prescription
- Pregnant or plan to become pregnant
- Breast feeding an infant
- Taking any other medication, prescription or non-prescription
- Have been recently exposed to chickenpox or have a history of herpes zoster (shingles), kidney disease, or liver disease

During treatment you may experience:

- Nausea or vomiting
- Loss of appetite
- Weakness or fatigue
- Temporary loss of some or all of your hair
- Lowering of blood counts: iron (hemoglobin) which carries oxygen, and white blood cells which protect from infection
- Sensitivity to sun

- Darkening of skin
- Nail changes

Precautions while receiving 5-FU[®]:

- Return to your physician for regular check-ups as requested
- Do not have any immunization or vaccinations while under treatment without physician's approval
- Avoid people with colds, flu, viruses, or any type of contagious illness to prevent infection
- Avoid excessive sunlight
- Avoid mouthwash products with alcohol

Side effects that should be reported to your physician immediately:

- Black, tarry stools
- Diarrhea that lasts more than 24 hours
- Fever, chills or sore throat
- Heartburn
- Nausea and vomiting that last more than 24 hours
- Sores in the mouth or on the lips
- Stomach cramps
- Bruising, pinpoint dots on skin, nose-bleeds, or any unusual bleeding
- Chest pain
- Persistent cough or shortness of breath
- Difficulty with balance



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Halotestin® (fluoxymesterone)

Halotestin® is a hormonal drug used to treat cancer that has spread to other parts of the body (metastatic). It is a male hormone called an androgen. Your healthcare provider will tell you how long you will take the medication.

Potential Side Effects:

- Dizziness
- Headaches
- Sleep disturbances
- Fatigue
- Nausea
- Fluid retention
- Acne
- Mild hair growth
- Oily skin
- Weight gain
- Blood sugar increase

Patient Instructions:

- Take the drug with a meal or snack to decrease nausea

Report to Healthcare Provider:

- Edema that is noticeable in the ankles
- Nausea or vomiting
- Yellowing of the whites of your eyes
- Unusual bruising
- Acne
- Excessive body hair growth



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Herceptin® (trastuzumab)

Herceptin® is an antibody drug used in the treatment of breast cancer in women whose tumors are identified as having HER2 receptors (human epidermal growth factors receptor 2). The HER2 protein is a genetic defect found in some tumors. The protein may be over-expressed causing a tumor to be more aggressive. Herceptin® is often used along with other chemotherapy drugs to treat breast cancer. Before the drug is given, it is necessary to determine if the tumor has an over-expression of the HER2 protein.

Before giving Herceptin® your physician will review the physical condition of your heart and blood count values. The drug is given by IV, usually once a week. During administration of the drug there is a chance you may experience sweating, chills, and possibly fever. Your nurse will probably give you medication to reduce the risk of this occurring.

Herceptin® can possibly cause:

- Nausea and vomiting
- Abdominal pain and diarrhea
- Headache and fatigue
- Tremors
- Insomnia
- Lowered white blood count with increased potential for infections

Report to your physician:

- Fever greater than 100.5°F
- Chills
- Chest pain
- Difficulty breathing

Additional instructions while taking Herceptin®:



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Kytril[®] (granisetron)

Brand Name: Kytril[®]

Kytril[®] is a drug used to prevent and reduce nausea and vomiting associated with chemotherapy drugs.

Method Administered:

- I.V. (into a vein)
- P.O. (by mouth)

Side Effects:

- Abdominal pain
- Constipation; diarrhea
- Headache
- Agitation
- Dizziness
- Drowsiness
- Heartburn
- Indigestion
- Trouble sleeping

Notify Physician of These Side Effects:

- Fever
- Severe nausea or vomiting
- Chest pain
- Fainting
- Irregular heartbeat
- shortness of breath
- Rash, hives, or itching

Special Instructions:



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Lupron®, Lupron Depot®, Viadur®, Leuprorelin® (leuprolide)

Brand Name: Lupron®, Lupron Depot®, Viadur®, Leuprorelin®

Leuprolide is a drug used to reduce the hormones in the body that may stimulate the growth of cancers.

Method Administered: I.M.
(injection into a muscle)

Side Effects:

- Light, irregular vaginal bleeding
- Stopping of menstrual periods
- Hot flashes
- Blurred vision
- Headache; nausea or vomiting
- Swelling of hands or feet
- Swelling and tenderness of breasts
- Trouble sleeping
- Weight gain
- Bleeding; bruising
- Burning or itching of injection site

Notify Physician of These Side Effects:

- Fast or irregular heartbeat
- trouble breathing
- sudden, severe drop in blood pressure
- swelling around the eyes
- rash, hives or itching
- numbness or tingling in hands or feet

- anxiety
- deepening of voice
- increased hair growth
- mental depression
- mood changes
- nervousness

Precautions:

When taking leuprorelin, your menstrual period may become irregular or cease altogether. You still need to use non-hormonal birth control methods, like condoms or spermicides, if you are sexually active.

Special Instructions:



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Marinol® (dronabinol)

Brand Name: Marinol®

Marinol® is a drug used to control nausea and vomiting caused by cancer and chemotherapy administration. The drug is often effective when other drugs have been unsuccessful in controlling nausea and vomiting. It may also be used for treatment of appetite loss.

Method Administered: P.O. (by mouth)

Side Effects:

- Dizziness
- Drowsiness
- Nausea or vomiting
- False sense of well being
- Trouble thinking

Notify Physician of These Side Effects (may be signs of an overdose):

- Amnesia
- Memory loss
- Confusion
- Hallucinations
- Delusions
- Anxiety
- Mental depression
- Fast heartbeat
- Severe drowsiness
- False sense of well being

- Decrease in motor coordination
- Slurred speech
- Constipation
- Problems urinating

Precautions: Avoid alcohol and central nervous system depressants (alcohol, pain medications, tranquilizers or sleeping medication) while taking Dronabinol.

Special Instructions:



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Megace[®] (megesterol)

Megace[®] is a hormonal medication that is a synthetic progestin (man-made progesterone) used to treat breast cancer. Your healthcare provider will tell you how long you will take Megace[®].

Potential Side Effects:

- Vision problems
- Migraine headaches
- Depression
- Insomnia
- Nausea
- Increased potential for blood clots
- Increased breakthrough menstrual bleeding
- Acne
- Fluid retention
- Weight gain
- Increased blood sugar

Report to Healthcare Provider:

- Edema that is noticeable in the ankles
- Depression
- Nausea or vomiting
- Migraines
- Acne
- Pain or swelling with warmth in the calves
- Acute chest pain
- Shortness of breath



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Mutamycin® (mitomycin)

Mutamycin® is a chemotherapy drug used to treat cancer. It belongs to a group of medicines known as antineoplastic (anti=against, neo=new, plastic=tumor or growth) agents. Mitomycin may be used as one of several drugs to treat breast cancer. It is given by IV into a vein or a central port (a vein entry site implanted under the skin).

Before Mutamycin® treatments begin, tell your physician if you are:

- Allergic to any medicine, either prescription or non-prescription
- Pregnant or plan to become pregnant
- Breastfeeding an infant
- Presently taking any other medications, prescription or non-prescription
- Have a history of heart, kidney or liver disease, herpes zoster (shingles), or recent exposure to chickenpox
- Have history of bleeding problems
- Have ever been treated with x-rays or other cancer medications

During mitomycin treatment you should:

- Drink extra fluids to increase urine production.
- Continue treatment even when nausea, vomiting and/or fatigue occur
- Keep your physician or nurse informed about side effects you are experiencing; especially difficulty breathing or not able to cough up mucus

Precautions while taking Mutamycin®:

- Return to your physician as requested for regular check-ups to monitor blood cell counts and blood creatinine levels (a substance kidneys normally remove from the blood).
- While receiving the drug and several weeks after completion, do not have any immunizations or vaccinations; other people in your household should also avoid having immunizations, since they could pass the infection on to you.
- Avoid people with colds, flu, stomach viruses, or any contagious illness to prevent infection.

Expected side effects of mitomycin:

- Lower white blood cell counts
- Loss of appetite
- Nausea
- Vomiting (contact physician if unable to control within 24 hours)
- May cause a temporary loss of hair; hair will begin to grow after and/or sometimes during treatment
- Purple-colored bands on nails
- Skin rash
- Fatigue



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Neupogen[®], Neutrogin[®] (filgrastim)

Colony-stimulating factors are hormone-like substances that promote the growth and maturity of blood cells. They restore and boost patients' immunological defenses (ability to fight infection) after chemotherapy. These drugs alter the immune system by providing a stimulatory effect. The most common drugs in this category are Neupogen[®] and Neutrogin[®]. They are often referred to as **G-CSF** (Granulocyte Colony-Stimulating Factor).

These drugs stimulate the parent blood cells to produce monocytes (fight infection in blood), macrophages (fight infections in body cells and fluids), fibroblasts (enhance healing and skin repair), endothelial cells (line blood and lymphatic systems) and keratinocytes (protein substance in hair, nails, and tissues).

After chemotherapy, the drugs are administered by injection. A small percentage of patients (20 percent) may experience bone pain after administration. This is usually managed with mild analgesics such as Tylenol[®] or ibuprofen.

Frequent blood cell studies are performed to monitor your response to the medication and to determine the number of injections necessary to bring the white blood cell count back to acceptable levels. These drugs shorten the period of neutropenia (low white blood cells) brought about by chemotherapy, reducing the potential for an infection to invade the body. It also allows you to stay on schedule for your next chemotherapy treatment.

Additional instructions:



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Nolvadex[®] (tamoxifen)

Nolvadex[®] is a drug used to prevent the recurrence of breast cancer. Tamoxifen is a non-steroidal, anti-estrogen drug that has been used to treat cancer since the early 1970s. The drug blocks estrogen stimulation on breast tissue in the body and is referred to as an anti-estrogen therapy.

Nolvadex[®] enters the blood stream and is carried to the organs that have estrogen hormone receptors. Receptor sites on cells are similar to a lock and the tamoxifen is like the key that fits the lock. There the drug attaches to the receptor site and prevents estrogen from attaching. The cell is prevented from dividing, thus controlling the cancer that may be left in the body. Nolvadex[®] targets only estrogen cell receptor sites and seems to prevent many problems that the lack of estrogen causes post-menopausal women. There has been a documented decrease in heart disease, and the drug has also been proven to prevent loss of bone density.

Nolvadex[®] After Breast Cancer

Studies have proven that tamoxifen is effective in reducing recurrence in breast cancer patients. After reviewing your pathology report, the oncologist can determine if you are a candidate for hormonal manipulation. If the estrogen receptor status is found to be positive, it will indicate that your tumor may respond to this therapy. Nolvadex[®] is the drug most commonly prescribed.

Clinical studies show the number of bone fractures of the hip, wrist, and spine were reduced in the Nolvadex[®] group. However, an increase was seen in the number of endometrial cells (lining the uterus) causing cancers and an increase in bloodclots. As with any medical intervention, the decision to take Nolvadex[®] is an individual one that should be made in partnership with your physician, evaluating the benefits and risks. The decision depends on a woman's age, personal history, family history of cancer, and how she feels about the benefits versus the risks.

Nolvadex[®] Administration

The drug is taken by mouth twice daily. The side effects of Nolvadex[®] are similar to menopausal symptoms including hot flashes, vaginal dryness, fluid retention, and vaginal spotting. Some women report nausea the first several weeks after beginning the drug. Taking the drug with food can help this. These symptoms, though annoying, are usually easily tolerated when one realizes the role the drug plays in preventing recurrence.

Your healthcare provider can manage the side effects of hot flashes with different medications and interventions. Over-the-counter products are available for vaginal dryness. Pre-menopausal women should continue to use birth control even if their menstrual periods stop. There is a slightly increased risk for clots (thromboembolic disease) just as there is when taking birth control pills. If you experience any swelling or pain in your calves or legs, report this to your physician. A yearly exam by a gynecologist is needed along with a Pap smear or endometrial sampling if vaginal bleeding should occur. Changes in vision should be reported to your treatment team. Some women may suffer from depression after taking Nolvadex® several months. If this occurs, inform your treatment team. Your physician will monitor your health with periodic blood work to evaluate the effects on your body chemistry. Lengths of time for administration of tamoxifen vary. Your physician will tell you how long you will be on the drug.

Additional instruction on taking Nolvadex® :



Nolvadex[®] (tamoxifen) — Instructions for Taking

Nolvadex[®] is an anti-estrogen drug that blocks the stimulation of estrogen in breast tissue. The drug attaches to the estrogen receptor of breast cells and prevents estrogen from entering the cell. Thus, the cell is prevented from dividing. Nolvadex[®] is used to prevent recurrence of breast cancer, to control metastatic disease or to prevent primary breast cancer in clinical trials. Side effects resemble menopausal symptoms and are well-tolerated considering the reason for drug administration. Nolvadex[®] has also been shown to decrease cardiac disease and bone loss in women.

Side-effects that have been reported:

- Hot flashes
- Lowered levels of white blood cells and platelets
- Vaginal discharge, spotting
- Vaginal dryness
- Occasional rash
- Nausea at onset of drug administration
- Temporary bone pain or tumor flare pain
- Vision changes
- Depression
- Increased potential for blood clots
- Fluid retention

While taking Nolvadex[®] , you should:

- Take medication as ordered by physician
- Report any side effects that become uncomfortable or that are unexpected

- Know that bone pain at the beginning of administration is a sign that the drug should be effective
- Take medication with food to prevent nausea
- Use contraception if pre-menopausal
- Have an annual pap smear or endometrial sampling
- Keep all scheduled appointments with physician to evaluate drug effectiveness

Report to physician:

- Uncomfortable side effects such as hot flashes or dry vagina
- Continued nausea after taking medication with meals
- Rash on body
- Vision changes
- Depression that starts several months after use of drug and continues
- Fever greater than 101.5°F, chills, or sore throat
- Pain in legs or calves of legs
- Pain in side
- Yellow skin or eyes

Instructions for Nolvadex[®] use:



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Oncovin[®], Vincasar PFS[®] (vincristine)

Oncovin[®] is a chemotherapy medication used in the treatment of cancer. It belongs to a group of medications known as antineoplastic (anti=against, neo=new, plastic=tumor or growth) agents. Oncovin[®] may be used in combination with other drugs for the treatment of breast cancer.

Because this type of drug kills cancer cells at a specific point in their reproduction, the timing of administration of this drug is important. Oncovin[®] is given by IV needle into a vein or into a central port (a vein entry site implanted under the skin).

Before vincristine treatment begins, tell your physician if you are:

- Allergic to any medication, either prescription or non-prescription
- Pregnant or plan to become pregnant
- Breastfeeding an infant
- Presently taking any other medications, prescription or non-prescription; especially Digoxin or Dilantin
- Have a history of heart disease, liver disease, kidney disease, nerve or muscle disease, herpes zoster (shingles), or recent exposure to chickenpox
- Have ever been treated with x-rays or other cancer medications

During treatment with vincristine you should:

- Drink extra fluids to increase urine production and prevent build up of uric acid in the blood
- Oncovin[®] can cause low salt (sodium) levels in the blood. Drink fluids and eat foods containing salt.
- Continue treatment even when nausea, vomiting, or fatigue occur
- Keep your physician informed of the side effects you are experiencing
- Take a laxative or stool softener, recommended by your physician, to prevent constipation; notify your physician if the recommended medications do not prevent constipation

Precautions while taking Oncovin[®]:

- Return to your physician as requested for regular check-ups to monitor blood cell counts and liver enzyme levels
- While receiving the drug and several weeks after completion, do not have any immunizations or vaccinations; other people in your household should also avoid having immunizations, since they could pass the infection to you.
- Avoid people with cold, flu, stomach viruses, or any contagious illness to prevent infection

Expected side effects of Oncovin®:

- Lower white blood counts
- Nausea
- Vomiting
- Skin Rash
- Weight loss
- Bloating
- Constipation
- Temporary loss of hair; hair will begin to grow after or during treatments

Side effects that should be reported to your physician immediately:

- Pain, redness, swelling at the injection site while receiving the drug or after the drug has been given
- Difficulty breathing or wheezing
- Fever over 100.5°F
- Chills
- Blood in urine, stool, or vomit
- Nosebleed that cannot be stopped in 15 minutes
- Any tremors or seizures

Side effects that should be reported to your physician within 24 hours:

- Agitation
- Blurred or double vision
- Confusion
- Decrease or increase in urination
- Dizziness or lightheadedness
- Headache not relieved with Tylenol®
- Jaw or joint pain
- Pain, numbness, or tingling in fingers and toes
- Painful urination
- Stomach pain/cramps or side pain

- Sores in the mouth and/or on the lips
- Swelling of face, hands, feet, or lower legs

Special instructions during Oncovin® treatments:

Avoid skin contact with body fluids (urine, stool or vomit) that may irritate the skin for the first 48 hours after treatment. Oncovin® is eliminated through the urine and in the bile fluid found in stool and vomit. Flush the toilet several times after use.

Additional instruction during Oncovin® treatments:



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Platinol® (cisplatin)

Platinol® is a chemotherapy drug used in the treatment of cancer. It belongs to a group of medicines known as alkylating agents. Some treatment plans for breast cancer may include cisplatin as one of several drugs used. The drug is given by an IV needle into a vein or into a central port (a vein entry site implanted under the skin).

Before Platinol® treatment begins, tell your physician if you are:

- Allergic to any medicine, either prescription or non-prescription
- Pregnant or plan to become pregnant
- Breastfeeding an infant
- Presently taking any other medications, prescription or non-prescription; especially if taking Dilantin
- Have a history of heart disease, liver disease, herpes zoster (shingles), or recent exposure to chickenpox
- Have ever been treated with x-rays or other cancer medications

During treatment with cisplatin you should:

- Drink extra fluids to increase urine production and prevent kidney problems
- Continue treatment even when nausea, vomiting, and/or fatigue occur
- Keep your physician/nurse informed of side effects you are experiencing; especially difficulty breathing, wheezing, or ringing in the ears

Precautions while taking cisplatin:

- Return to your physician as requested for regular check-ups to monitor blood cell counts, check blood levels of creatinine (a substance kidneys normally remove from blood), and have hearing testing
- While receiving the drug and several weeks after completion, do not have any immunizations or vaccinations; other people in your household should also avoid having immunizations, since they could pass the infection on to you
- Avoid people with colds, flu, stomach viruses, or any contagious illness to prevent infection

Expected side effects of cisplatin:

- Lower white blood cell counts
- Nausea
- Vomiting (report to physician if you are unable to keep fluids down for 8 hours)
- Loss of appetite with change in taste of foods

Side effects of cisplatin that should be reported to your physician immediately:

- Redness, pain, or swelling at the site of administration of drug, either during or afterwards
- Fast or irregular heartbeat
- Fever over 100.5°F, chills, sore throat
- Shortness of breath or wheezing
- Nosebleed which cannot be stopped in 15 minutes, blood in urine, vomit or in stool
- Inability to urinate

Side effects that should be reported to your physician within 24 hours:

- Swelling or puffiness of face, hands, or feet
- Decreased urine output
- Blurred vision or inability to recognize colors
- Difficulty in hearing or ringing in ears
- Numbness or tingling in the fingers, toes, or face
- Sores in the mouth or on the lips

After completion of Platinol[®], report the following symptoms to a physician:

- Decrease in urination
- Difficulty in hearing
- Fever over 100.5°F, chills, or sore throat
- Ringing in ears
- Swelling of feet or lower legs
- Nosebleed which cannot be stopped in 15 minutes, blood in urine or in stool

Special instructions during cisplatin treatments:

Avoid skin contact with body fluids (urine, stool, or vomit) that may irritate the skin for the first 48 hours after treatment. Platinol[®] is eliminated through the urine and in the bile fluid found in stool and vomit. Flush the toilet several times after use.

Additional instructions while taking Platinol[®]:



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Prednisone

Commonly used brand names:

**Deltasone[®], Liquid Pred[®], Meticorten[®],
Orasone[®], Panasol[®] and Prednicen-M[®]**

Prednisone (PRED-ni-son-e) belongs to the group of medicines called adrenocorticoids (cortisone-like substances). It is used to replace the cortisone-like substances made naturally by your body. Prednisone is also used to provide relief for inflamed areas of the body. It is often used as part of treatment for a number of different diseases, such as severe allergies or skin problems, asthma, arthritis, or cancer. Many chemotherapy treatment plans use prednisone as part of the drug regimen.

Before prednisone is taken, inform your physician if you are:

- Allergic to any medicine, either prescription or non-prescription
- Pregnant or intend to become pregnant while using this medication
- Breastfeeding an infant
- Presently taking any other prescription or non-prescription medication

Proper use of prednisone:

- Take with food to prevent stomach upset.
- Do not take more or fewer tablets than prescribed.
- Do not take more frequently than prescribed.

- Do not continue on the medication if your physician tells you to stop.
- Do not take at bedtime or late in the day.

If you miss a dose of this medicine you should:

- **Every other day prescription:** Take as soon as possible if you remember the same day. If you remember at night, wait until the next morning to take the medication since it can interfere with sleep if taken late in the day.
- **Once a day prescription:** Take as soon as possible; however, if it is past five o'clock, wait until the next day to prevent sleeplessness.
- **Several times a day prescription:** Take as soon as possible; if you do not remember until the next dose is due, double the medication.

Precautions while taking prednisone:

- Do not stop taking this medication without first checking with your physician; you have to gradually reduce the dose before stopping completely.
- Before having a vaccination, immunization, or skin test, tell the physician in charge.
- Before receiving any kind of surgery or emergency treatment, inform the health care worker.
- If you get an infection or injure yourself, inform your physician.



Selective Serotonin Reuptake Inhibitors (SSRIs)

Selective serotonin reuptake inhibitors (SSRIs) are a class of antidepressants (mood elevators) used to treat depression, hot flashes and other symptoms. They work by increasing the amount of a certain natural substance in the brain. It may take a few weeks before you feel the full benefit of an SSRI. Continue to take your medication as prescribed, even if you feel well. Do not stop taking an SSRI without talking to your healthcare provider.

SSRI Medications:

- Citalopram
Brand name: Celexa®, Cipramil®, Emocal®, Sepram®
- Escitalopram oxalate
Brand name: Lexapro®
- Fluoxetine hydrochloride
Brand name: Prozac®, Fontex®, Seromex®, Seronil®, Sarafem®
- Fluvoxamine maleate
Brand name: Luvox®, Faverin®
- Paroxetine
Brand name: Paxil®, Seroxat®, Optipar®, Aropax®, Paroxat®
- Sertraline hydrochloride
Brand name: Zoloft®
- Trazodone hydrochloride
Brand name: Desyrel®

Inform your healthcare provider of what prescription and non prescription drugs you are taking, especially:

- Anticoagulants (blood thinners) such as warfarin (Coumadin®)
- Other antidepressants
- Metoprolol (Lopressor®)
- Antihistamines
- Carbamazepine (Tegretol®)
- Cimetidine (Tagamet)
- Estrogens
- Fluoxetine (Prozac®)
- Itraconazole (Sporanox®)
- Ketoconazole (Nizoral®)
- Levodopa (Sinemet®, Larodopa®)
- Lithium (Eskalith®, Lithobid®)
- Medications for high blood pressure
- Medications for seizures
- Medications for Parkinson's disease
- Medications for diabetes
- Medications for asthma
- Medications for colds, or allergies
- Medications to treat an infection (bacterial or fungal)
- Methylphenidate (Ritalin®)
- Muscle relaxants
- Oral contraceptives (birth control pills)
- Sedatives
- Sleeping pills

- Thyroid medications
- Tranquilizers
- Vitamins
- Do not take an SSRI if you have taken an MAO inhibitor (phenelzine [Nardil] or tranylcypromine [Parnate]) in the last 2 weeks.

Notify your physician if you have:

- An allergic to any other drugs
- Or have ever had Glaucoma
- An enlarged prostate
- Difficulty urinating
- Seizures
- An overactive thyroid gland
- Liver, kidney, or heart disease

If you are pregnant, plan to become pregnant, or are breastfeeding. If you become pregnant while taking citalopram, call your doctor immediately.

Precautions:

- Cigarette smoking may decrease the effectiveness of this drug.
- Plan to avoid unnecessary or prolonged exposure to sunlight. Wear protective clothing, sunglasses, and sunscreen. Your skin may be sensitive to sunlight.
- If you take medication once a day in the morning, take the missed dose as soon as you remember it. However, if it is almost time for the next dose, skip the missed dose and continue your regular dosing schedule. If you take it once a day at bedtime and forget, do not take it the next morning. Skip the missed dose and wait until bedtime. Do not take a double dose to make up for a missed one.

Common side effects:

- Upset stomach
- Drowsiness
- Weakness, tiredness, or anxiety
- Excitement
- Difficulty falling asleep or staying asleep
- Nightmares
- Dry mouth
- Changes in appetite or weight
- Changes in sex drive or ability
- Constipation

Call your healthcare provider if these symptoms persist:

- Difficulty urinating
- Frequent urination
- Blurred vision
- Excessive sweating

Call your healthcare provider immediately if you experience:

- Jaw, neck, and back muscle spasms
- Slow or difficult speech
- Shuffling walk
- Persistent fine tremor or inability to sit still
- Fever
- Difficulty breathing or swallowing
- Severe skin rash
- Yellowing of the skin or eyes
- Irregular heartbeat



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Taxol[®] (paclitaxel)

Taxol[®] is a chemotherapy drug used primarily in the treatment of breast and ovarian cancer. It belongs to a group of medications known as antineoplastic (anti = against, neo = new, plastic = tumor or growth) agents. Taxol is given by IV needle into a vein or central port (a vein entry site implanted under the skin). The drug is given over a period of several hours in a clinic or physician's office. It is administered as a series of treatments approximately every three weeks if the patient's blood counts are within treatment levels.

Before Taxol[®] treatments begin, tell your physician if you are:

- Allergic to any medicine, either prescription or non-prescription
- Pregnant or plan to become pregnant
- Breastfeeding an infant
- Presently taking any other medications, prescription or non-prescription; specially if taking Dilantin
- Have a history of heart, kidney or liver disease, herpes zoster (shingles), or recent exposure to chickenpox
- Have ever been treated with x-rays or other cancer medications

Before the infusion of Taxol[®], you will receive additional medication to prevent or minimize the side effects. Most side effects from Taxol[®] are not serious, although a few rare ones are. Rarely, a person may be allergic to the drug. As a special precaution, the

nurse will monitor your blood pressure, temperature and respiration for any sign of an allergic reaction to the medication during drug administration.

During infusion of Taxol[®] report any:

- Shortness of breath
- Wheezing
- Tightness or constricted feeling in the throat
- Dizziness or lightheadedness
- Sudden onset of nausea
- Increase or decrease in heart rate
- Burning or pain at the injection site of chemotherapy

Expected side effects of Taxol[®]:

- Hair loss (occurs from 14 to 21 days past first treatment and includes: scalp, eyebrows, eyelashes, and pubic hair)
- Decrease in white blood cells (help fight infections)
- Muscle and joint pain several days after treatment
- Tingling or burning sensation in hands and/or feet

Side effects that should be reported to physician immediately:

- Pain, redness or swelling at the injection site while receiving or after the drug has been given
- Temperature over 100.5°F
- Chills
- Blood in urine, stool, vomit, or a nosebleed not controlled in 15 minutes
- Shortness of breath
- Wheezing

Side effect that should be reported within 24 hours:

- Vomiting or diarrhea not controlled in 24 hours
- Sore throat
- Blisters on mouth
- Sores in mouth
- Painful or frequent urination
- Dizziness
- Any sore that does not heal or that has signs of infection (pus, redness, swelling)

During treatment you should:

- Drink extra fluids to increase urine production
- Continue treatment even when side effects and/or fatigue occur
- Keep your physician or nurse informed about side effects you are experiencing

Precautions while taking Taxol®:

- Return to your physician as requested for regular check-ups to monitor blood cell counts and liver enzyme levels
- While receiving the drug and several weeks after completion, do not have any immunizations or vaccinations; other

people in your household should also avoid having immunizations, since they could pass the infection on to you

- Avoid people with colds, flu, stomach viruses, or any contagious illness to prevent infection
- Avoid skin contact with body fluids (urine, stool or vomit) that may irritate the skin for the first 48 hours after treatment. Taxo® is eliminated through the urine and in the bile fluid found in stool and vomit. Flush the toilet several times after use.

Special instructions during Taxol® treatment:



Taxotere[®] (docetaxel)

Taxotere[®] belongs to a group of medications known as antineoplastics (anti=against, neo-plastic=new tissue formation). It comes from the taxane category of chemotherapy drugs that interfere with cell division of the cancer cells. Every cell in your body contains a supporting structure, similar to a skeleton. If this skeleton of a cell is damaged, the cell can't grow or reproduce. Taxotere[®] alters the cell's skeleton preventing reproduction. It is used in the treatment of advanced or metastatic breast cancer.

You may receive the drug by IV weekly or every three weeks over a period of one hour according to your specific treatment plan. Your physician will determine what dose of Taxotere[®] is right for you and how often you should take it.

Before Taxotere[®] treatment begins, tell your physician if you are:

- Allergic to any medication—prescription or non-prescription
- Pregnant or plan to become pregnant
- Breastfeeding an infant
- Presently taking any other medications
- Have a history of heart disease, liver disease, recent exposure to chickenpox or herpes zoster (shingles)

Taxotere[®] Treatments:

Before Taxotere[®] treatments begin, your physician will check all of your blood work to be sure that your counts are in a safe range to receive the medication. Prior to receiving Taxotere[®], you may be prescribed a medication called dexamethasone, a corticosteroid that will lessen the side effects. Dexamethasone is generally started one day prior to the Taxotere[®] and given for a total of three days. Dexamethasone reduces water retention and lessens any allergic reactions from Taxotere[®]. If you have any problems taking the dexamethasone as directed, call your doctor or nurse. It may occasionally cause flushing, or mild nausea and upset stomach. If you forget to take your dexamethasone before your treatment, inform your nurse before she administers the Taxotere[®].

Possible side effects of Taxotere[®]:

- Lower white blood cell count (neutropenia) causing increased risk for infections
- Fatigue
- Muscle pain may occur in about 20 percent of patients
- Nausea and vomiting, not severe with Taxotere[®].
- Tingling, burning, or weakness in hands and feet
- Hair loss after one or two treatments (head, underarms, pubic area, eyebrows, eyelashes); will begin growing back after the treatment is stopped



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Velban® (vinblastine)

Velban® is a chemotherapy drug used in the treatment of cancers. It belongs to a group of medications known as antineoplastic (anti=against, neo=new, plastic=tumor or growth) agents. Some breast cancer treatment plans may include Velban®.

Because this type of drug kills cancer cells at a specific point in their reproduction, the timing of administration of this drug is important. The drug is given by an IV needle into a vein or central port (a vein entry site implanted under the skin).

Before Velban® treatments begin, tell your physician if you are:

- Allergic to any medicine, either prescription or non-prescription
- Pregnant or plan to become pregnant
- Breastfeeding an infant
- Presently taking any other medications, prescription or non-prescription; especially if taking Dilantin
- Have a history of heart, kidney, or liver disease, herpes zoster (shingles) or recent exposure to chickenpox
- Have ever been treated with x-rays or other cancer medications

During Velban® treatment you should:

- Drink extra fluids to increase urine production and prevent uric acid build up in the blood

- Take a laxative or stool softener as recommended by your physician to prevent constipation; notify your physician if the recommended medications do not prevent constipation
- Continue treatment even when nausea, vomiting and/or fatigue occur
- Keep your physician or nurse informed about side effects you are experiencing

Precautions while taking Velban®:

- Return to your physician as requested for regular check-ups to monitor your blood cell counts and liver enzyme levels
- While receiving the drug and several weeks after completion, do not have any immunizations or vaccinations; other people in your household should also avoid having immunizations, since they could pass the infection on to you
- Avoid people with colds, flu, stomach viruses, or any contagious illness to prevent infection

Expected side effects of Velban®:

- Muscle pain, aching
- Lower white blood cell counts
- Nausea
- Vomiting (contact physician if unable to control within 24 hours)
- Temporary loss of hair; hair will begin to grow after and sometimes during treatment



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Vepesid[®], VP-16 (etoposide)

Vepesid[®] is a chemotherapy drug used to treat cancer. Most commonly, it is called VP-16. Vepesid[®] is a group of medicines known as antineoplastic (anti=against, neo=new, plastic=tumor or growth) agents. Etoposide may be used as one of several drugs to treat breast cancer.

Because this type of drug kills cancer cells at a specific point in their reproduction, the timing of administration of this drug is important. The drug is given by an IV needle into a vein or central port (an implanted device under the skin).

Before Vepesid[®] treatments begin, tell your physician if you are:

- Allergic to any medicine, either prescription or non-prescription
- Pregnant or plan to become pregnant
- Breastfeeding an infant
- Presently taking any other medications, prescription or non-prescription
- Have a history of heart, kidney or liver disease, herpes zoster (shingles), or recent exposure to chickenpox
- Have ever been treated with x-rays or other cancer medications

During Vepesid[®] treatment you should:

- Drink extra fluids to increase your urine production
- Continue treatment even when nausea, vomiting, or fatigue occur
- Keep your physician or nurse informed about side effects you are experiencing, especially difficulty breathing or a rapid heart beat

Precautions while taking Vepesid[®]:

- Return to your physician as requested for regular check-ups to have your blood cell count studied
- While receiving the drug and several weeks after completion, do not have any immunizations or vaccinations; other people in your household should also avoid having immunizations, since they could pass the infection on to you
- Avoid people with colds, flu, stomach viruses, or any contagious illness to prevent infection

Expected side effects of Vepesid®:

- Anemia
- Lower white blood cell counts
- Nausea
- Vomiting (contact physician if not controlled within 24 hours)
- Loss of appetite
- Loose stools
- Temporary hair loss; hair will begin to grow at completion or during treatments
- Fatigue
- Change in taste of foods

Side effects of Vepesid® that should be reported to your physician immediately:

- Pain, redness, or swelling at the injection site while receiving the drug or after the drug has been given
- Extreme shortness of breath during administration of drug
- Fever over 100.5°F
- Chills
- Blood in urine, stool, or vomit, nosebleed that cannot be stopped in 15 minutes

Side effects that should be reported within 24 hours:

- Dizziness or lightheadedness
- Double vision or blurred vision
- Headache not relieved with Tylenol®
- Jaw or joint pain
- Numbness, tingling, or pain in fingers and toes
- Stomach or side pain
- Sore throat
- Sores in the mouth and on the lips
- Swelling of hands, feet, or lower legs

- Skin rash or pinpoint red spots (petechiae)
- Shortness of breath

Special instructions during Vepesid® treatments:

Avoid skin contact with body fluids (urine, stool or vomit) that may irritate the skin for the first 48 hours after treatment. Vepesid® is eliminated through the urine and in the bile fluid found in stool and vomit. Flush the toilet several times after use.

Additional instructions while taking Vepesid®:



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Xanax® (alprazolam)

Xanax® is used to treat anxiety from depression and panic disorders. Take medication exactly as prescribed by your physician. Do not take a larger dose, take it more often, or for a longer time than your doctor tells you to. Do not stop taking Xanax® without talking to your doctor.

Inform your physician if you are allergic to any of the following medications or any other drugs:

- Alprazolam, chlordiazepoxide (Librium, Librax)
- Clonazepam (Klonopin)
- Clorazepate (Tranxene)
- Diazepam (Valium)
- Estazolam (ProSom)
- Flurazepam (Dalmane)
- Lorazepam (Ativan)
- Oxazepam (Serax)
- Prazepam (Centrax)
- Temazepam (Restoril)
- Triazolam (Halcion)
- Digoxin (Lanoxin)
- Diltiazem (Cardizem, Dilacor, Tiazac)
- Sisulfiram (Antabuse)
- Ergotamine (Cafatine, Cafergot, Wigraine, others);
- Erythromycin (Erythrocin)
- Fluoxetine (Prozac)
- Fluvoxamine (Luvox)
- Isoniazid (INH, Laniazid, Nydrazid)
- Itraconazole (Sporanox)
- Ketoconazole (Nizoral)
- Levodopa (Larodopa, Sinemet)
- Medications for depression, seizures, Parkinson's disease, pain, asthma, colds, or allergies
- Metoprolol (Lopressor, Toprol XL)
- Muscle relaxants; nefazodone (Serzone)
- Nicardipine (Cardene)
- Nifedipine (Adalat, Procardia)
- Oral contraceptives
- Phenytoin (Dilantin)
- Probenecid (Benemid)
- Propoxyphene (Darvon)
- Ppropranolol (Inderal)
- Rifampin (Rifadin)
- Sedatives; sleeping pills
- Theophylline (Theo-Dur)
- Tranquilizers
- Valproic acid (Depakene, Depakote)
- Vitamins

These medications may add to the drowsiness caused by Xanax®:

- Amiodarone (Cordarone, Pacerone)
- Antihistamines
- Cimetidine (Tagamet)
- Clarithromycin (Biaxin)
- Cyclosporine (Neoral, Sandimmune)

If you have or have ever had glaucoma; seizures; or lung, heart, or liver disease. If you are pregnant, plan to become pregnant, or are breast-feeding. If you become pregnant while taking alprazolam, call your doctor immediately.

Precautions:

- Xanax® may make you drowsy
- Do not drive a car or operate machinery until you know how this drug affects you.
- Alcohol can add to the drowsiness caused by this Xanax®.
- Cigarette smoking may decrease the effectiveness of this drug.
- Do not drink grapefruit juice while taking Xanax®; it may change the effectiveness of this medication.
- If you miss a dose, skip the missed dose and continue your regular dosing schedule. Do not take a double dose to make up for a missed one.

Common Side Effects:

- drowsiness
- dizziness
- tiredness
- weakness
- dry mouth
- diarrhea
- upset stomach
- changes in appetite
- reduction in sex drive

Call your healthcare provider if any of these symptoms continue:

- restlessness or excitement
- constipation
- difficulty urinating
- frequent urination
- blurred vision

Call your healthcare provider immediately in you experience:

- shuffling walk
- persistent, fine tremor or inability to sit still
- fever
- difficulty breathing or swallowing
- severe skin rash
- yellowing of the skin or eyes
- irregular heartbeat



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Xeloda[®] (capecitabine)

Xeloda[®] is a drug used in the treatment of breast cancer. It inhibits the reproduction of DNA and RNA that causes the cell to die.

Method Administered: P.O. (by mouth)

Report to Physician:

- If you are pregnant
- Taking a blood thinner such as warfarin (Coumadin[®])
- Taking Dilatin[®]
- Taking the vitamin folic acid
- If you have a history of kidney or liver problems

Side Effects:

- Diarrhea
- Nausea
- Vomiting
- Stomach pain
- Constipation
- Weakness
- Tiredness
- Dizziness
- Headache
- Sleeplessness
- Dry or itching skin,
- Dehydration

Notify Physician of These Side Effects:

- Severe diarrhea
- Loss of appetite
- Severe vomiting
- Tingling, numbness, pain, redness or swelling of the hands or feet
- Sores or pain in the mouth or throat
- Fever or infection
- Chills
- Sore throat
- Chest pain
- Rash

Precautions:

- Take drug within 30 minutes of a meal.
- Use barrier type method of birth control.
- Do not breastfeed while taking capecitabine.

Special Instructions For Xeloda[®] :



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Zoladex[®] (goserelin)

Brand Name: Zoladex[®]

Zoladex[®] is a drug used to treat cancer that reduces the female and male hormones in the body.

Method Administered: S.Q. Injection (into fatty tissue of the body)

Side Effects:

- Light; irregular vaginal bleeding
- Stopping of menstrual periods
- Hot flashes
- Headaches

Notify Physician of These Side Effects:

- Pelvic pain
- Burning
- Itching or dryness of vagina
- Anxiety
- Deepening of voice
- Increased hair growth
- Mental depression
- Mood changes
- Nervousness



CANCER DIAGNOSTIC TESTS



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Bone Scan Preparation

Your physician may order a bone scan to evaluate and determine the stage of your breast cancer and whether the cancer has spread to the bones. Bone scans are one of the most commonly performed nuclear medicine procedures.

Preparation for Bone Scan:

On the day of the bone scan, your arm will be injected through an IV with a radioactive substance, similar to having your blood drawn. This will cause little discomfort with no side effects from the injected material. In order for the radioactive substance to reach the bones for a clear picture, you will wait several hours (one to three) before the actual testing begins. Following the injection, you will drink several glasses of water to help eliminate through your kidneys any of the radioactive substance not picked up by the bones. During the waiting time, you may choose to remain in the area or you may leave and return at a designated time for the scan. There is no prior preparation necessary on your part.

Before the scan begins, you will be asked to empty your bladder. You will then lie fully clothed on a table as an x-ray machine moves across your body from head to toe. This machine does not give off radiation to your body. The only radiation you receive is in the injected substance that is equal to the amount of radiation of a regular x-ray. There is no discomfort or pain unless you find it difficult to lie

flat and still. The scan may require up to one hour to complete. As the machine scans your body, it produces images of the structure of your bones. The information gathered by the scan is translated into x-ray pictures and a report is sent to your physician. An increased amount of the radioactive substance appearing in an area of the bones, referred to as a "hot spot," may indicate an abnormality that the physician will evaluate further.

The radioactive material will be totally excreted in the urine within 24 hours. You pose no risk to your family members during this time.

Date of Bone Scan _____

Time _____

Location _____

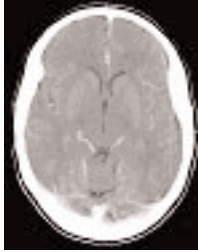


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Brain Computed Tomography — CT or CAT Scan



CT (computed tomography) is also referred to as a CAT scan. This special x-ray equipment obtains many images from different angles. The images are joined together to show a cross-section of body tissues and organs. CT scanning provides more detailed information on head injuries, brain tumors, and other brain diseases than do regular radiographs (plain films). It also can show a cross sectional image of bone, soft tissues, and blood vessels in the same images. CT of the head involves little radiation exposure.

Wear comfortable, loose-fitting clothing for your CT exam. Remove anything that might interfere with imaging of the head, such as earrings, eyeglasses, dentures, or hair clips before your exam. The procedure is painless and no hospitalization is required.

There is no special preparation needed for a CT scan of the head unless you are to receive a contrast agent (a substance that highlights the brain and its blood vessels making abnormalities easier to see). If the radiologist determines a contrast agent will be helpful, you will be asked in advance whether you have or had allergies in the past or have ever had a serious reaction to a medication. Many contrast agents contain iodine that can cause a reaction in persons who are allergic to some medications or foods. The radiologist also should know if you have asthma, multiple myeloma, or any disorder of the heart, kidneys, or thyroid gland, or if you have diabetes

and are taking Glucophage. You will be asked to sign an "informed consent" form before having a CT with injection of a contrast agent.

Women should always inform their doctor or x-ray technologist if there is any possibility that they are pregnant. In some cases an alternate study will be performed to reduce or eliminate the radiation exposure to the fetus.

The CT scanner is a large, square machine with a hole in the center that looks something like a donut. The patient lies still on a table that moves up or down and slides into and out from the center of the hole. Within the machine, an x-ray tube rotates around the patient's body to produce the images, making clicking and whirring noises as the arm moves. Though the technologist will be able to see and speak to you, you will be alone in the room during the exam.

During a CT of the head, numerous x-ray beams are passed through the skull and absorbed by different tissues and lesions (such as a tumor). The scanner revolves around the patient, who is lying still, emitting and recording x-ray beams from as many as a thousand points on the circle. A special computer program then uses the differences in x-ray absorption to form cross-sectional images or "slices" of the head and brain. These slices are called tomograms; hence the name "computed tomography."

A CT scan causes no pain. However, there may be some discomfort from having to lie flat on your back and remain still. If you have pain when lying flat, take your pain medication one hour before the exam and inform your physician. If contrast material is injected you may experience a warm, flushed sensation during the injection. You may also have a metallic taste in your mouth that lasts for one or two minutes. Occasionally, a patient will develop itching and hives for up to a few hours after the injection. If you experience any itching or other symptoms, report this promptly to your technologist or physician. Symptoms can be relieved by medication.

A CT scan involves exposure to radiation in the form of x-rays, but the benefit of an accurate diagnosis far outweighs any risks. The typical radiation dose from a CT exam of the head and brain is equivalent to the amount of background radiation you naturally receive over a year's time.

The radiologist evaluates the results of the scan and forwards the results to your physician.

Your CT Scan Scheduled Date

Time _____

Location _____

Contrast injection will be given:

yes **no**

Special Instructions: _____



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Computed Tomography (CT) Scan

The computed tomography (CT) scan creates cross-sectional (front to back) views of internal structures and provides much more information than conventional x-rays. The scan helps your physician to determine if your breast cancer has spread to other parts of your body. The image may clearly show a tumor's size, shape, volume and location. The technique, however, has some limitations. Very small tumors may not be visible, and the scan may not show how far the cancer has spread, particularly if no mass has developed.

A CT scan is produced by numerous pencil-thin rays passing through the body from various angles and levels. The test is performed inside a large x-ray tube. Pictures are taken in rapid sequence by a technologist. A computer generates a two-dimensional picture from these images (called sections or slices). Individual slices are displayed on a computer screen. A radiologist evaluates the results and sends a report to your physician. The radiation exposure is similar to that of a conventional x-ray. The exam is performed in a hospital or clinic. No hospitalization is required.

Preparation for the scan is determined by the part of your body to be examined. In some cases, you may be asked not to eat or drink anything prior to the test or may be given an enema. Prior to your scan, you may be given a contrast agent (radioactive substance) to drink or an agent may be injected into your vein to help highlight certain body parts. Tell

the technologist if you have been given a contrast agent in the past and how you responded. It is also important to inform the staff if you are currently or have experienced:

- allergic reaction to seafood or iodine
- allergic reaction to other medications
- kidney problems
- diabetes
- pregnant (at time of scan)

While the opening of the x-ray tube is quite large, inform your healthcare provider if you have problems with claustrophobia (fear of close places). A medication to relax you during the scan may be ordered by your physician and administered prior to the exam. If you receive medication for sedation, you will need to bring a family member or a friend with you to drive you home.

You will be asked to lie very still on a table for the duration of the scan. The length of the exam will vary from 15 minutes to one hour, according to the area being scanned. The test is painless, although there may be some discomfort while holding still in certain positions for a length of time. If pain causes you to have difficulty lying down and being still, ask your physician about taking your pain medication prior to the scan.

A built-in communications system enables two-way conversation between you and the technologist at any time during the scan. An automated table will move you into the

scanner's x-ray tube, a donut-shaped ring, to take the pictures of your body. While you lie on the table, a scanner rotates around you and directs thousands of x-ray beams at a particular region of your body. You will hear mechanical noises from the scanner as it takes pictures and collects data.

If you are given a contrast agent, it will naturally leave your body within 24 hours. You should increase the amount of water you drink to help rid the agent from your body through your kidneys.

Your physician will have the results of the CT scan within several days.

Your CT Scan Scheduled Date

Time _____

Location _____

Contrast injection will be given:

yes **no**

Instructions for scan: _____



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Intravenous Pyelogram

An **IVP (Intravenous Pyelogram)** is an x-ray examination of the kidneys, ureters (tubes), and urinary bladder. An IVP study uses a contrast agent or dye to enhance the x-ray images. The contrast agent is injected into the patient's bloodstream through a vein in the arm. As the dye circulates through the kidney, the structure and function of the kidneys, ureters, and bladder can be evaluated on a series of quickly captured images.

An IVP study can help identify the cause of a wide variety of disorders, including frequent urination, blood in the urine, or pain in the side or lower back. It can identify problems within your urinary tract resulting from kidney stones, internal injuries after an accident or trauma, tumors in the kidney, ureters, or urinary bladder, and other changes.

Before injecting the dye, the radiologist or technologist will ask about any allergies you have to foods or medications, as well as any recent illnesses or other medical conditions. If you are diabetic, make sure your doctor is aware of your condition and your medications. Women should always inform their doctor or x-ray technologist if there is any possibility that they are pregnant.

You will receive detailed instructions on how to prepare for your IVP study from your health-care provider. In most cases, you will be told not to eat or drink after midnight the night before your exam. You may also be asked to take a mild laxative (in either pill or liquid form) the evening before the procedure.

Before the exam begins you will be asked to remove all jewelry, eyeglasses and any metal objects that could interfere with the images. You will lie on a large, flat table. Above the table is an apparatus containing the x-ray tube that can be positioned over your body.

A contrast agent is injected, usually in a vein in the patient's arm. Images are taken both before and after the injection of the contrast agent. Some people report feeling a flush of heat and, sometimes, a metallic taste in the mouth. These common side effects usually disappear within a minute or two and are no cause for alarm. Some people have reported a mild itching sensation. If it persists or is accompanied by hives, the itch can be treated easily with medication. In rare cases, a patient may become short of breath or experience swelling in the throat or other parts of the body. These can be indications of a more serious reaction to the contrast agent that should be treated promptly. Tell the radiologist or technologist immediately if you experience these symptoms.

As the kidneys process the contrast agent, a series of x-rays are taken to determine the actual size of the kidneys and to show the collecting system as it begins to empty. Some kidneys do not empty at the same rate; therefore, the radiologist may request delayed films from 30 minutes to four hours. However, a typical IVP study usually takes about an hour.

During the imaging process, you may be asked to turn from side to side and to hold several different positions to enable the radiologist to capture views from several angles. Near the end of the exam, you may be asked to empty your bladder so that an additional film can be taken of your urinary bladder as it empties.

The contrast agent used for IVP studies will not discolor your urine or cause any discomfort when you urinate.

Your radiologists will analyze the images and send a report to your referring physician.

Your IVP Scheduled Date _____

Time _____

Location _____

Special Instructions: _____



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Liver Scan

A **liver scan** enables your physician to check for structural changes in your liver. A liver scan may be ordered after a diagnosis of breast cancer.

Prior to the test, a radioactive contrast agent is injected through a vein. The contrast agent travels to the liver and allows pictures or images to be taken showing the absorption (uptake) of the contrast agent in the liver. Approximately 30 minutes after the agent is administered, you will lie down on a table while a gamma ray detector (Geiger counter), is passed over your abdomen. You will be asked to change positions in order to see all surfaces of the liver. The gamma ray detector will record the uptake of the contrast agent in the liver, and pictures will be taken of the liver. These pictures will then be evaluated by a radiologist and results sent to your physician.

The contrast agent will leave your body through your urine within hours. You are not exposed to large amounts of radioactive material in this test. After the test is completed, you may resume your normal activities. This scanning procedure is completely painless and requires no hospitalization.

Date of Scan _____

Time _____

Place _____

Additional Instructions: _____



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MRI — Magnetic Resonance Imaging

MRI (magnetic resonance imaging) uses radio waves and a strong magnetic field rather than traditional x-rays to provide remarkably clear and detailed pictures of internal organs and tissues. The MRI enables the detection of abnormalities that might be obscured by bone with other imaging methods. The technique is very useful for the diagnosis of a broad range of conditions in all parts of the body, including cancer. The detail of MRI images makes it an invaluable tool in early diagnosis and evaluation of tumors. An MRI image has better contrast than a CT scan, and even very small tumors can be detected early. The MRI also distinguishes between tumors and cysts. However, the MRI does have its limitations. It does not detect calcifications (tiny calcium deposits that can signal cancer in the breast tissue) as clearly as a CT scan or conventional x-ray.

MRI is able to evaluate some body structures such as the brain, spinal cord, pelvis and musculoskeletal system that are difficult to visualize with standard x-rays. Organs of the chest and abdomen, including the lungs, liver, kidney, spleen, pancreas, and abdominal vessels, can also be examined in high detail in MRI images, enabling the diagnosis and evaluation of tumors and functional disorders. Since no radiation exposure is involved, MRI is often the preferred diagnostic tool for examination of the male and female reproductive systems, pelvis and hips, and the bladder.

The MRI is performed with the patient lying on a sliding table that moves into a narrow,

enclosed, tubular machine. When the patient is comfortable, the radiologist and technologist leave the room and the individual MRI sequences are performed as the table moves into the machine. The patient is able to communicate with the radiologist or technologist at any time using an intercom. The exam will generally take from 15 to 45 minutes, although a very detailed study may take longer. You will be asked not to move during the actual imaging process, but between sequences some slight movement is allowed. Patients are generally required to remain still for only a few seconds to a few minutes at a time. However, the confined space does not allow for much movement.

Depending on the part of the body being examined, a contrast agent (substance to highlight body parts) may be used to enhance the visibility of certain tissues or blood vessels. A small needle connected to an intravenous line (IV) is placed in an arm or hand vein. A saline (salt) solution will drip through the intravenous line to prevent clotting until the contrast agent is injected about two-thirds of the way through the exam. The radiologist or technologist may ask about drug allergies if you are to receive a contrast agent.

MRI causes no pain, but some patients can find it uncomfortable or even frightening. Some find it difficult to remain still during the examination. Others fear the closed in or confined space. If you are claustrophobic, let your physician know before you start the exam so that some type of sedation can be administered.

You may notice a warm feeling in the area under examination; this is normal, but if it bothers you the radiologist or technologist should be told. If a contrast injection is needed, there may be discomfort at the injection site, and you may have a cool sensation at the site during the injection. Many patients find the continual loud thumping and pounding of the machine annoying.

Technologists are aware of the potential uneasiness of a MRI and make every effort to make the experience more comfortable. Some facilities offer natural remedies to calm you such as cucumber oils. Soothing music is often played and a mirror strategically placed on a wall to make the space feel less cramped. Earplugs or a headset with music may help lessen the noise and provide a distraction. Some technologists suggest keeping your eyes closed throughout the scan if you fear closed-in spaces. "Open air" MRI alleviates the feeling of claustrophobia and is available at some facilities. This newer design has open sides, no pounding noise, and can accommodate very large people. However, open MRIs are less powerful and do not produce the clearest images.

The strong magnetic field used for MRI will pull on any metal object implanted in the body; therefore, you will be asked whether you have a prosthetic hip, heart pacemaker (or artificial heart valve), implanted port (brand names Port-o-Cath, Infusaport, Lifeport), intrauterine device (IUD), or any metal plates, pins, screws, or surgical staples in your body. In most cases, surgical staples, plates, pins, and screws pose no risk during MRI if they have been in place for more than four to six weeks. Tattoos and permanent eyeliner may also create a problem. You will be asked if you have ever had a bullet or shrapnel in your body, or ever worked with metal. If there is any question of metal fragments, you may be asked to have an x-ray

that will detect any such metal objects. Tooth fillings usually are not affected by the magnetic field, but they may distort images of the facial area or brain, so the radiologist should be aware of them. The same is true of braces, which may make it hard to "tune" the MRI unit to your body. You will be asked to remove anything that might interfere with the MRI images including hairpins, jewelry, watches, eyeglasses, hearing aids, zippers on clothing, and any removable dental work.

MRI is a unique imaging method because, unlike the usual radiographs (x-rays) and even CT scanning, it does not rely on ionizing radiation. Instead, radio waves and a strong magnet are used. Therefore, you receive no radiation during the procedure.

When the scan is completed, the patient is asked to wait until the images are examined to determine if more images are needed. A radiologist will analyze the images and send a report to your referring physician.

Your MRI Scheduled Date _____

Time _____

Location _____

Contrast injection will be given:

yes **no**

Special Instructions: _____



PET Scan — Positron Emission Tomography

A PET scan is a diagnostic imaging test based on detection of positrons which are tiny particles of a radioactive substance injected into the patient prior to the exam. During the scan the machine creates images based how the positrons collect in the body.

PET scans are used to evaluate a variety of diseases in the body including evaluating the effects of cancer treatment by characterizing biochemical changes in the cancer, heart functions and brain abnormalities.

The PET machine looks like a large doughnut because it has a hole in the middle of the machine. Inside the machine are multiple rings of detectors that detect the positrons and show the images on a computer outside of the room.

Preparing for a PET Scan:

- PET scans are usually done on an outpatient basis
- Wear comfortable, loose-fitting clothes
- Do not eat for four hours before the scan
- You will be encouraged to drink water
- Your physician will instruct you on taking any regular medication before the procedure (ask specifically about insulin, pain, blood pressure or heart medications).

Before your Exam

- You will be given a radioactive substance that is attached to a natural substance like glucose (sugar) by an I.V.
- You will wait approximately 30 - 60 minutes for the substance to travel throughout your body and be absorbed by the tissue that is being studied.
- You will be asked to rest during this time, avoiding any significant movement and talking.

During the Exam

- The PET scan will be started and requires approximately 30 - 45 minutes of lying on a table in the open area of the machine
- The images of a PET scan reflect the accumulation of the substance in different colors. For example a glucose substance may be attracted to organs that use a lot of glucose. Because cancer requires a lot of glucose to divide and grow, these areas will show up with brighter colors. The images will be shown on a computer outside of the room.
- The testing physician may compare previous CT or MRI scans with the PET images.



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Ultrasound

Ultrasound (US) imaging, also called ultrasound scanning or sonography, is a method to "see" inside the human body using high-frequency sound waves and their echoes. A microphone-like instrument, called a transducer that emits and receives sound waves is passed over the part of the body being examined. The echo patterns are recorded and displayed as a real-time (immediate) detailed computer image that is viewed on a monitor by the radiologist or technician. The procedure involves no radiation and is considered safe enough to examine fetuses during pregnancy. It is painless and noninvasive.

US is a useful way to examine many of the body's internal organs including the heart, liver, gallbladder, spleen, pancreas, kidneys, and bladder. Since US images are captured in real-time, they can show movement of internal tissues and organs, and enable physicians to see blood flow and heart valve functions. This can help to diagnose a variety of conditions and to assess damage from trauma or a tumor. US is also used to guide procedures such as needle biopsies, in which a needle detracts sample cells from an organ for laboratory testing. Ultrasound is now being used to image the breasts and to guide needles for biopsy of breast cancer.

Wear comfortable, loose-fitting clothing for your exam. Preparation depends on the organ being examined and the type of scan used. For some scans, your healthcare provider may instruct you not to eat or drink for as many as 12 hours before your appointment. For others, you may

be asked to drink up to six glasses of water two hours prior to your exam and avoid urinating so that your bladder is full when the scan begins.



Ultrasound equipment consists of a console containing a computer and electronics, a video display screen and a transducer that is used to scan the body. The transducer is a small hand-held device about the size of a bar of soap attached to the scanner by a cord. The physician or technologist spreads a lubricating gel on the patient's abdomen in the area being examined, and then presses the transducer firmly against the skin to obtain images. The image is immediately visible on a nearby computer screen. The physician or technologist watches this screen during the examination. Often, the patient is able to see the screen and watch the movement as well.

When the transducer is pressed against the skin, it directs inaudible, high-frequency sound



waves into the body. As the sound echoes from the body's fluids and tissues, the transducer records tiny changes in the pitch and direction of the sound. These echoes are instantly measured and displayed by a computer, which in turn creates a real-time picture on the monitor. The live images of the examination are usually recorded on videotape, but one or more frames of the moving picture may be "frozen" to capture a still image.

A radiologist experienced in ultrasound will analyze the images and send a signed report to the referring physician.

Your Ultrasound Scheduled Date

Time _____

Location _____

Body location to be scanned

Special Instructions: _____



METASTATIC DISEASES



Bone Metastasis

Bone metastasis occurs when cancer cells leave the primary site and move through the lymphatic and blood systems to the bone. The microscopic cancer cells attach themselves to the inside of the bones and begin to grow. Cancer that leaves the primary site and moves to the bones is the same type of cancer (breast, prostate, lung, thyroid) and is not bone cancer. Bone metastasis is most commonly found in the spine, pelvis, and ribs. These bones have large amounts of soft, red bone marrow and provide an environment conducive to cancer growth. Bone metastasis is the most common site of recurrence in breast cancer patients.

Signs and symptoms of early bone metastasis:

- Pain that is persistent, most commonly in the back or hips
- Multiple sites of pain
- Pain increases when lying down, coughing or sneezing
- Pain is relieved when sitting still

Signs and symptoms of late stage disease:

- Spinal cord compression: numbness in hands or feet, change in way you walk, change in bowel habits or inability to control bowels or urine
- Fractures

Diagnosis may include:

- Bone scan
- X-rays
- CT scan
- MRI
- Blood studies with elevated alkaline phosphatase
- Myelogram if spinal cord involvement suspected

Treatment may include:

- Tamoxifen (usually first line of treatment)
- Chemotherapy
- Radiation therapy to site of pain if localized (relief usually in 3 - 10 days)
- Pain medications
- Exercise (weight bearing)
- Spinal cord compression: medication to reduce swelling (corticosteroids), radiation therapy to the site of compression, and possibly surgery

Patients with bone metastasis are at risk for fractures and should take precautions to protect themselves from injury. High levels of blood calcium may cause hypercalcemia, a serious condition that needs immediate treatment from a physician.

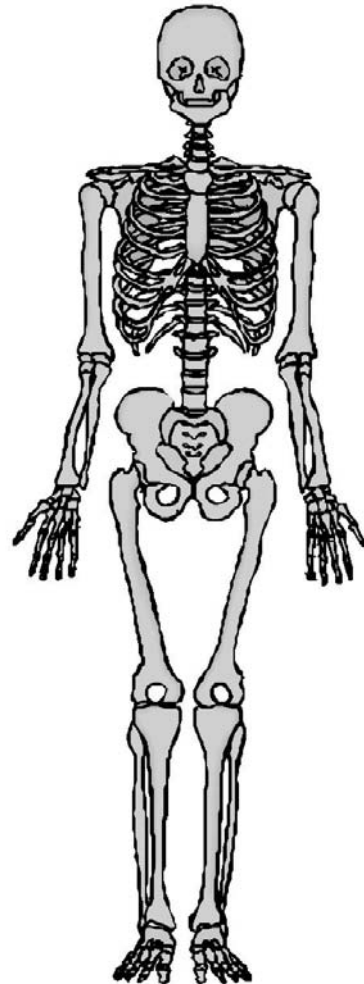
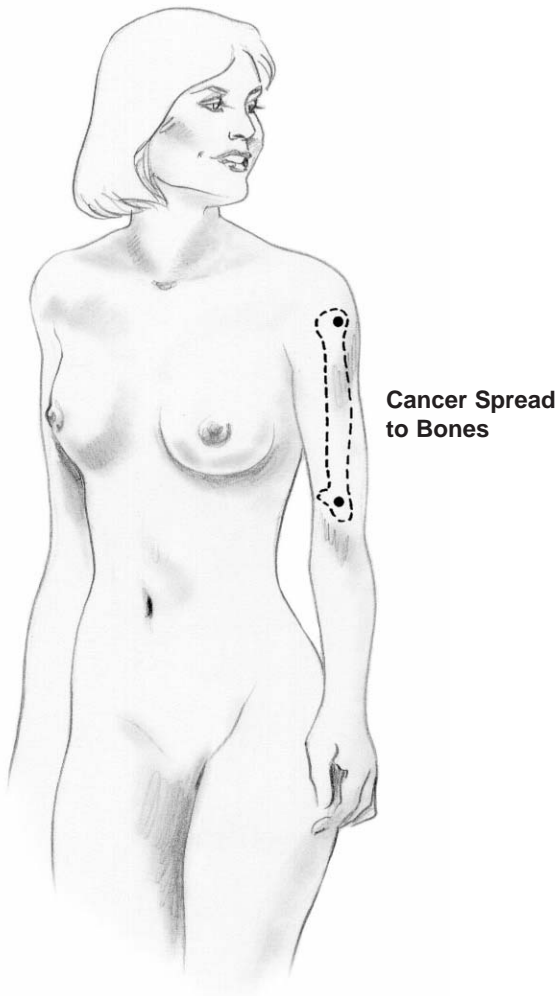
Hypercalcemia signs and symptoms:

- Fatigue
- Irritability and depression
- Loss of appetite
- Nausea and vomiting
- Constipation
- Excessive urination, resulting in dehydration
- Excessive thirst
- Changes in heart rhythm
- Loss of consciousness

If you have been diagnosed with bone metastasis and experience a combination of symptoms of hypercalcemia, contact your physician as soon as possible.

A diagnosis of bone metastasis requires that a patient remain under a physician's care to monitor the progression of the disease.

Ask your physician to mark the area where you have bone metastasis.





Brain Metastasis

Brain metastasis occurs when cells from an original cancer leave the primary site and travel through the lymph and blood systems to the brain. The cancer cells attach to and grow in the brain. After the cancer cells double numerous times, they create side effects. Breast, lung, and melanoma are the most common cancers that metastasize to the brain.

The cancer growing in the brain is not brain cancer; it remains the same type of cancer from the original site (breast, lung, melanoma, etc.). Many side effects of chemotherapy and infections produce symptoms similar to those that indicate brain metastasis, often making the diagnosis a challenge for the physician.

Symptoms may be caused by the size of the tumor (large enough to press on surrounding tissues), swelling of surrounding cells in the brain, or bleeding into the area. Diagnosis is made after reported or observed signs and symptoms encourage the physician to order an MRI or CT scan of the head.

It is important for patients and their families to inform the physician of all changes in the physical and mental condition of the patient.

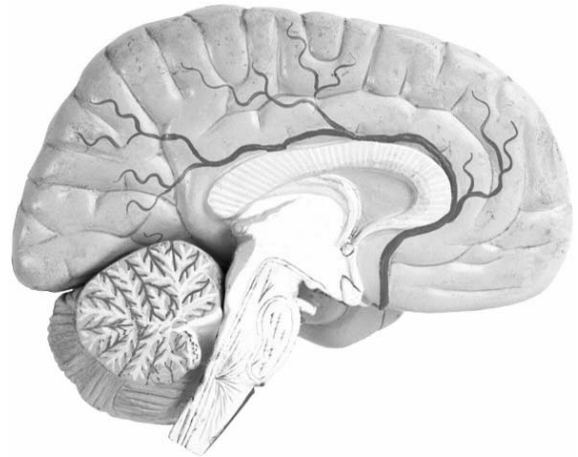
Signs and symptoms of brain metastasis:

- Headaches (usually become worse when lying down; may be present upon awakening but improve after getting up)
- Vomiting with nausea or sudden vomiting without any nausea

- Changes in vision (double or blurred vision)
- Lack of balance; falling
- Dizziness
- Memory loss or confusion
- Personality changes (such as sudden outbursts of anger)
- Change in gait (how you walk)
- Numbness on one side
- Seizures
- Unable to differentiate right from left

Treatment may include:

- Corticosteroid drugs to reduce swelling in the brain
- Anticonvulsant drugs to control seizures
- Pain relievers to control headache
- Radiation therapy to the whole head to reduce tumor size
- Chemotherapy to eradicate metastatic cancer cells
- Medications (osmotic agents) to decrease the fluid content in the brain
- Possible surgery to relieve pressure or remove tumor



Ask your physician to mark the area where you have brain metastasis.

Special Instructions: _____



Carcinomatous Meningitis

Carcinomatous meningitis is invasion of cancer cells from the original cancer to the brain and spinal fluid. The condition involves widespread cancer cells, not a solitary tumor. The cancerous cells leave their original site and travel through the blood or lymphatic system to the brain and spinal fluid. The cells are seeded throughout the brain and are found in the spinal fluid. The condition occurs most commonly in breast, lung and melanoma patients.

Because of extensive involvement in the brain, the initial signs and symptoms of **carcinomatous meningitis** vary. Symptoms depend on the extent of involvement of the brain, cranial nerves, and spinal cord. The condition may cause the spinal fluid to increase pressure in the brain. Physicians often suspect carcinomatous meningitis when symptoms involve more than one area of the nervous system.

Signs and Symptoms:

- Headache
- Stiffness of the neck
- Nausea with vomiting; vomiting without nausea
- Extreme fatigue
- Drowsiness
- Decreased memory
- Disorientation
- Double vision, blurred vision
- Hearing loss

- Facial numbness
- Loss of balance; falling
- Numbness in extremities
- Change in gait (way you walk)
- Change in personality
- Seizures

Diagnostic Tests:

- MRI Scan (diagnosed by identifying widespread small lesions of cancer in brain and along spinal cord)
- Cerebrospinal fluid tap (withdrawal of spinal fluid for evaluation of cancer cells, white blood cells, elevated proteins, and decreased glucose)

Treatment:

- Chemotherapy injected directly into spinal fluid (intrathecal chemotherapy)
- Possible surgery on skull to relieve pressure from fluid build-up; possible placement of an Ommaya reservoir (special port placed in head) for administration of chemotherapy directly into the brain
- Whole brain radiation and/or radiation for lesions along spinal cord

Instructions for carcinomatous meningitis:



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Liver Metastasis

Liver metastasis occurs when cancer cells leave the primary site and move through the lymphatic and blood systems to the liver. The microscopic cancer cells attach themselves to the inside of the liver and begin to grow. Cancer that leaves the primary site and moves to the liver is the same type of cancer (example: breast or prostate) and is not considered liver cancer. Liver metastasis is one of the most common recurrent sites in breast cancer patients.

Signs and symptoms of liver metastasis:

- Abdominal pain
- Loss of appetite
- Nausea
- Vomiting
- Fatigue
- Fever (less than 101°F)
- Night sweats
- Abdominal distention
- Accumulation of fluid in the abdominal cavity (ascites)
- Jaundice (yellow/gold tone to skin and whites of eyes)

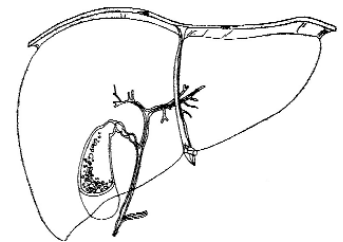
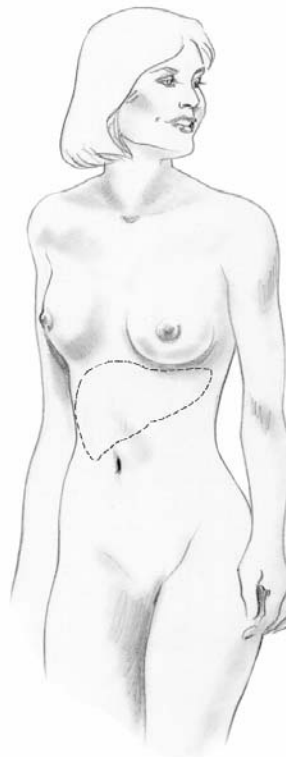
Diagnostic test for liver metastasis may include:

- Complete blood cell count, including liver chemistries
- CT Scan
- MRI
- Ultrasound
- Liver biopsy (occasionally)

Treatment:

- Chemotherapy
- Control of symptoms: nausea, removal of fluid accumulation in abdomen
- Surgery or radiation therapy (occasionally, if localized lesion)

If you have liver metastasis your physician will initiate a treatment plan according to the location of the cancer in the liver. Metastatic cancer is often distributed widely over the liver, eliminating some treatment options.



Ask your physician to identify where in the liver your cancer is located.



Lung Metastasis

Lung metastasis occurs when cancer cells leave the primary site and move through the lymphatic and blood systems to the lungs. The microscopic cancer cells attach themselves to the inside of the lungs and begin to grow. Cancer cells that leave the primary site and move to the lungs are the same type of cancer (example: breast or prostate) and are not considered lung cancer. This is the same type of cancer growing in the lungs. Lung metastasis is one of the most common recurrent sites in breast cancer patients.

Signs and symptoms of lung metastasis:

- Shortness of breath first noticed after physical exertion, progressing to shortness of breath while at rest
- Increase in number of breaths per minute
- Dry cough without other cold symptoms (most common identifying symptom)
- Chest pain: may be slight or severe and may increase when lying on one side
- Spitting up mucus with a reddish/brown color
- Shoulder or arm pain
- Pleural effusion (collection of fluid in the lung cavity)
- Some patients never experience any symptoms

Diagnosis:

- Chest x-ray
- Bronchoscopy with brush biopsy (instrument inserted into lungs to view and remove tissue by gently brushing the area to obtain cells for pathology evaluation)

Treatment options include local, systemic or a combination of both.

Local treatment:

- Removal of any fluid accumulation by inserting a needle into the area and draining (thoracentesis)
- Insertion of medication into the lung cavity after thoracentesis to prevent recurrence of fluid accumulation
- Occasionally, surgery or spot radiation if the tumor is localized and not wide-spread

Systemic treatment:

- Chemotherapy



Pleural Effusion

A pleural effusion is a collection of fluid in the lung cavity. In a patient with breast cancer, it is caused by lung metastasis. Lung metastasis occurs when cancer cells leave the primary site and move through the lymphatic and blood systems to the lungs. The microscopic cancer cells attach themselves to the inside of the lungs and begin to grow. Lung metastasis is one of the most common recurrent sites in breast cancer patients. Pleural effusion is often a side effect of lung metastasis.

Signs and symptoms of pleural effusion:

- Shortness of breath first noticed after physical exertion, progressing to shortness of breath while at rest
- Increase in number of breaths per minute
- Dry cough without other cold symptoms (most common identifying symptom)
- Chest pain: may be slight or severe and may increase when lying on one side
- Spitting up mucus with a reddish/brown color
- Shoulder or arm pain

Diagnosis:

- Chest x-ray
- Bronchoscopy with brush biopsy (instrument inserted into lungs to view and remove tissue by gently brushing the area to obtain cells for pathology evaluation) if positive diagnosis of lung metastasis is not documented
- Evaluation of fluid removed from the lungs

Treatment options include local, systemic or a combination of both.

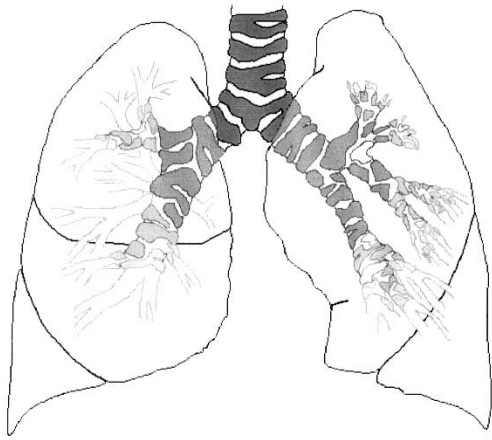
Local treatment:

- Thoracentesis: removal of fluid accumulation in lung by inserting a needle into the area and draining
- Insertion of medication into the lung cavity after thoracentesis to prevent recurrence of fluid accumulation

Systemic treatment:

- Chemotherapy

Your physician will discuss with you where the pleural effusion is found in your lung and the appropriate treatment.



Right Lobe

Left Lobe

Treatment Plan:



Recurrent Breast Cancer

Breast cancer can recur months or years after primary treatment is completed. However, all recurrences are not alike. There are three types of recurrent breast cancer:

1. Local Recurrence

Cancerous cells may remain in the original site and over time grow back. Cancer cells are microscopic and cannot be seen by the human eye during surgery; therefore, some cells may be left behind. Most physicians do not define local breast cancer recurrence as the spread of breast cancer, but instead the failure of the primary surgical treatment. Even after mastectomy is performed, portions of the breast tissue and fat remain making local recurrence possible. Surgeons report that mastectomy can only remove approximately 95 percent of the breast tissue. Recurrence after mastectomy is rare, but it is still a possibility.

2. Regional Recurrence

A regional recurrence of breast cancer is more serious than local recurrence because it usually indicates that the cancer has spread beyond the breast and the underarm lymph nodes. Regional breast cancer recurrences can occur in the (1) chest muscles and (2) internal mammary lymph nodes under the breast-bone and between the ribs.

3. Distant Metastatic Recurrence

Breast cancer that has spread into distant parts of the body is the most dangerous type of recurrence. The most common site of distant metastatic recurrence is in the bones. Other common metastatic sites include the bone marrow, lungs, liver, brain, or other organs. Most any area of the body may be invaded by a breast cancer recurrence.

Symptoms indicating metastatic breast cancer recurrence include:

- Bone pain from bone metastases
- Shortness of breath from lung metastases
- Lack of appetite or nausea from liver metastases
- Yellowing of the skin or white of eyes from liver metastases
- Weight loss from possible liver metastases
- Weakness in legs or arms, headaches, loss of bowel or bladder control, and personality changes may indicate possible recurrence in the brain or spinal fluid

It is essential that you communicate with your healthcare team about any changes that you experience after breast cancer treatment. Most recurrences are detected by a woman's observation of physical changes in her body followed by a physician's clinical exam. If you experience breast cancer recurrence, your physicians will work with you to develop the most effective treatment plan.



Spinal Cord Compression

Spinal cord compression is a rare, but possible, complication of metastatic cancer. It is caused by the pressure of a tumor on the spinal cord. The spinal cord is the bundle of nerves that run inside the backbone into the brain. This pressure from a tumor can cause various symptoms and needs to be treated as soon as possible.

Signs and symptoms of spinal cord compression that need immediate attention:

- Pain in the back that increases when lying down or when you cough, sneeze or move
- Numbness in the fingers and hands or the toes and feet
- Decreased strength in your leg(s) when you walk
- Change in the way you walk (tendency to drag one leg or favor one side)
- Pain that increases when lying down (often cited as main differentiating factor from back pain)
- Change in bowels (constipation)
- Inability to control bowel movements
- Change in ability to control urination (wetting self)
- Inability to urinate

Tests to determine if spinal cord compression is present:

- Examination by a physician
- Bone Scan
- X-rays, CT scan, or MRI

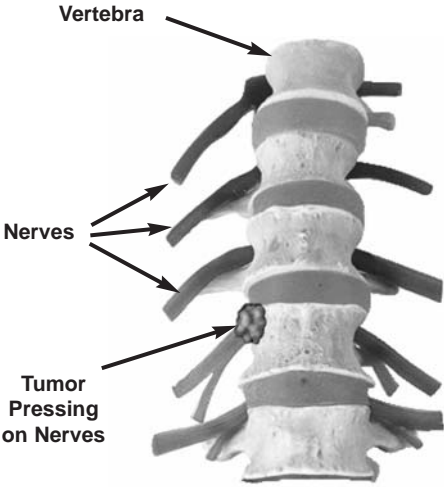
Potential Treatments:

- Corticosteroids to reduce swelling and inflammation around the spinal cord
- Radiation therapy to shrink tumor and relieve pressure against the spinal cord
- Surgery to remove tumor or to release pressure

Early identification of the symptoms and prompt treatment can greatly reduce the pain and side effects of spinal cord compression. Inform your physician if you experience any of the above symptoms.

Instructions about spinal cord compression:

Your physician will show you on this drawing the area where tumor compression on your spinal cord is causing your problems.





PATIENT SUPPORT

PATIENT SUPPORT



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Contraception and Breast Cancer

If potential pregnancy is an issue for you, you need to discuss what type of birth control is most suitable during and after treatment with your healthcare provider. Some methods of birth control you have been using may need to be changed because of your diagnosis and subsequent treatment. If you plan a future pregnancy, you may wish to delay pregnancy until you have completed treatment and your physician feels that pregnancy is a safe option. Types of recommended contraception will vary according to the treatment you receive.

If you receive chemotherapy, your menstrual periods may or may not return. If you are around 40 or younger, they may return. If you are close to menopause, they may not return. For some women it may take several years before the monthly period restarts. However, pregnancy can occur even before the menstrual period returns. You may have no evidence of a menstrual period and yet be fertile (able to conceive a child). Therefore, it is important to discuss with your healthcare provider what type of birth control will be best suited for your use.

If you are prescribed the anti-estrogen drug tamoxifen (Nolvadex) for treatment of your breast cancer, you may become very fertile. Contraception is recommended while taking the drug and after the drug is discontinued. Your physician will discuss what types of contraception are most suitable and the length of time you should take them to prevent pregnancy.

Methods of Birth Control

Birth Control Pills

Many types of breast cancer can be stimulated to grow by hormones. Therefore, birth control pills are not an option during or after treatment because they contain hormones that are very similar to the hormones produced by the ovaries. **Do not take any type of birth control pill without discussing it with your oncologist.** Many physicians are choosing to use other methods until clinical studies provide more evidence that the pill is a safe method to use after breast cancer treatment.

Intrauterine Device (IUD)

The **IUD** is a small device that is inserted into the uterus by a healthcare provider. The IUD creates a reaction that alters the lining of the fallopian tubes and uterus creating an unfavorable environment that prevents implantation of a fertilized egg. Two types of IUDs are currently available.

- The "Copper T"—a small T-shaped plastic device with copper wrapped around it. This needs to be replaced every eight years.
- Progesterone IUD—secretes progesterone to prevent ovulation. Needs to be replaced every year. It may decrease menstrual flow and cramps and is seldom recommended at this time for women after breast cancer.

IUD selection is often very useful for women who have had their family but do not want sterilization. An IUD is not recommended for women who have not had children, because it has an increased risk of pelvic infection from the IUD. Some women experience increased menstrual flow and cramping. Women who experience heavy bleeding and severe cramping may want to consider another form of birth control.

Barrier Methods

Barrier methods include (1) condoms, (2) diaphragms, and (3) cervical caps. All barrier methods should be used with a spermicide (vaginal suppositories or vaginal foam); otherwise the effectiveness of the method may not be reliable.

- A condom is a thin covering made of rubber or animal membrane that is placed on the penis before intercourse to prevent the release of sperm into the vagina. The method is the safest for prevention of sexually transmitted disease.
- A diaphragm is a rubber dome-shaped device that is placed into the vaginal canal over the cervix (the opening into the uterus). A spermicide jelly is placed in the diaphragm before placing it in the vagina. The diaphragm helps to prevent the sperm from getting into the uterus, and it holds the spermicide jelly against the cervix so that any sperm that get past the diaphragm are deactivated by the spermicide. If the diaphragm method is used properly, it is a very effective method of birth control and it is very safe. The diaphragm is usually taken out six to eight hours after intercourse. Side effects from the diaphragm are rare.
- The cervical cap is a small rubber device that fits right on the cervix to hold spermicide against the cervix and prevent sperm from entering the uterus. It functions in a manner very similar to that of the diaphragm. The advantages of the

cervical cap are that it is smaller than the diaphragm and some couples feel they have more sensation with the cervical cap. The cap can be left in place for 48 hours. However, there are disadvantages of the cap. It is more difficult to learn how to correctly place the cap into the vagina on the cervix, and not all women can be fitted with a cap because it only comes in four sizes.

Surgical Birth Control Methods

Permanent methods of birth control are tubal ligation (tying the tubes) for the woman and a vasectomy for the partner. Although theoretically both methods can be reversed surgically, these methods should be thought of as permanent procedures because reversal of the procedures may not be possible in many cases.

- Tubal ligation is performed using laparoscopic surgery. A physician makes a very small (less than 1 inch) incision in or underneath the umbilicus (the belly button), and another incision just above the pubic bone. Instruments are placed in the openings that can visualize the tubes. A procedure to either cauterize (to burn) the fallopian tube or to place a clip across the tubes is performed. This prevents the egg from being fertilized by the sperm. The surgery may be performed under general or local anesthesia and is a one-day outpatient procedure. If you have not yet had breast surgery and would choose this as your method of future contraception, ask your physicians about having the procedure performed at the time of your breast surgery while you are under anesthesia.
- A vasectomy is a minor surgical procedure in which tubes in the testes are tied off so the sperm cannot enter the ejaculate fluid. This procedure is often performed under local anesthesia in the office or in same-day surgery. This procedure does not affect desire or the ability to have an erection or ejaculation.

Periodic Abstinence or Rhythm Method

The rhythm method is effective by avoiding intercourse around the time of ovulation (release of the egg). This method only works if the woman has fairly regular cycles (the time from one period to the next). Ovulation is estimated by counting the days from the previous period and then watching for changes in the cervical mucus, and for changes in body temperature (basal body temperature). For accuracy, the basal body temperature must be taken daily during the period of ovulation for prediction of fertility. Statistically, this method is not very reliable. However, some couples are very successful in using it as their primary form of birth control because of numerous reasons including religion.

Decision-Making Tips About Birth Control Methods

- Talk to your partner about your desire for future children
- Talk to your physician along with your partner about options
- Ask for written information
- Take time to consider your decision on the type of contraception
- Select the choice that is best for you

Recommendations for contraception:



ST. VINCENT'S BREAST HEALTH CENTER

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My Daughter's Breast Cancer

Hearing your daughter has breast cancer is devastating and frightening news. Every parent suffers and anguishes with their child when she is ill, no matter how old she is. Unlike those days when you could take her in your arms and rock away her fears as you nursed her back to health, you are faced with the challenge of how to best help her as an adult in her struggle for recovery. What do you do? What do you say? How can you best help?

Your child still needs your support even as an adult. She needs to know that you are there for her. One of the greatest concerns of cancer patients is the effect that it is having on the family they love. They want to help you during this time, just as you want to help them. This is best accomplished with open communication. However, it is often difficult to discuss the issues and feelings surrounding cancer. Many years ago, a cancer diagnosis was not discussed, believing this was the most caring and helpful response. However, we now know that talking to and allowing the person to talk about her cancer helps the person and their family to better cope.

Cancer treatment has progressed greatly in recent years causing survival to be at all-time highs. Side effects from treatment are better managed and patients are tolerating treatments with less physical distress.

How do you best help?

- Allow your daughter to talk with you about her cancer.
- Let her know that her fears and tears are a normal response to the diagnosis. Encourage her to cry in front of you. Share her tears.
- Offer to support her in the way she wants help. For some, this means going with her to physicians' appointments and treatments or gathering information on treatments. Others need help with daily chores, and some only want close communication. Ask what she wants you to do to help. Do not assume you know what she needs or wants.
- Do not express your strong opinions or pressure her into any decisions. Let her take the lead in deciding what is best for her and then offer your unconditional support after she makes her decision. Women who are pressured into decisions often respond with feelings of depression and helplessness. They need to feel a sense of personal control to best manage their crisis.
- Keep in touch in ways that let her know you care. Write her notes. Prepare special foods she likes. Offer to care for the children or do household chores. Provide transportation to the doctor. Carpool the children.

- Encourage her to take advantage of local support programs for women with breast cancer. Peer support is an invaluable resource. Offer to take her or attend the meetings with her.
- Be available but do not persistently ask questions. Balancing your concern with her needs is the key to successful relationships between family members during an illness.

Your daughter needs your support as she did when she was a child, just in different ways. It is proven that support is one of the most important components of a successful recovery. Your support is as valuable as medication. Your daughter needs you.



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Depression After Breast Cancer

The stress of breast cancer causes many changes in a woman's life. The diagnosis has threatened her life, self-esteem, body image, sexuality, social life and career. Many confusing emotions accompany the diagnosis, but most women manage to learn to cope successfully. However, some women may have problems incorporating this loss into their lives and need additional help. Often, the inability to adjust is exhibited through continued depression after surgery, evidenced by constant depression during treatment or even after treatment ends.

Depression is a common emotional state-affecting millions each year-that is often misunderstood. It is confused with unhappiness, grief, and other emotions that result from a misfortune or sad event. However, depression is more than just feeling down or blue after a loss or disappointment. It is a serious condition with real symptoms that affect both the mind and the body. The encouraging fact is that depression, when treated, usually responds positively to counseling and/or medication. Ninety percent of people who seek help find their treatment successful and live a normal, healthy life.

The first step to distinguish the difference between feeling sad or low from being depressed is to know the warning signs and then to feel comfortable about seeking appropriate help. "Feeling blue" means that one may feel sad but can still enjoy and look forward to parts of her life, such as a family gathering, a movie or seeing a friend. Depression, on the other hand, is often manifested by:

- Continuous feeling of sadness
- Social withdrawal
- Feelings of worthlessness, excessive feelings of guilt or fear
- Feelings of hopelessness
- Being very slow in physical movement or speech
- Constantly jittery or nervous
- Low energy level, may feel tired all the time
- Inability to make decisions
- Irrational thinking
- Imaginary health problems
- Generally disinterested in food or eating excessively
- Disinterest in work or day-to-day activities
- Uninterested in intimacy or sex
- Insomnia (cannot go to sleep, inability to stay asleep, or wakes early) or hypersomnia (sleeps too much)
- Suicidal thoughts*

**seek professional help immediately*

If you are exhibiting several of these symptoms for a period of two weeks or longer, your healthcare provider should be notified. Depression may be treated in several ways. In some cases, counseling may be all that is needed. Counseling identifies weaknesses in coping skills and works to strengthen them. Often, talking to an understanding person

accomplishes much for a depressed person. Medication, however, may be needed to assist the process. Antidepressants are often prescribed and will take approximately two weeks to become effective. Diet and exercise have also been proven to be beneficial to reduce depression and stress. You need to understand that depression is not a sign of weakness. It is a legitimate

condition that is experienced by many people after a major crisis or loss. Most depression is periodic; thus, short-term counseling and/or medication will help during this period of adjustment. Identifying and seeking help are the first steps to resolve depression. If you feel that this may be occurring in your life, call your healthcare provider for the help available to overcome your depression.

Self-Evaluation for Depression

A simple self-evaluation can help you determine if you should seek help from a healthcare professional. Read the following statements and place a check mark rating the frequency you experience these symptoms or feelings ranging from never to all of the time.

Symptom	Never	Some of the Time	Often	All of the Time
Feel no pleasure or joy in life				
No longer interested in things that once brought pleasure				
Avoid spending time with family or friends				
Difficult to make simple decisions				
Feel guilty				
Feel sad and blue				
Feel angry at others				
Feel mistrustful of others				
Feel trapped in circumstances				
Want to sleep all the time				
Can't sleep long without waking up				
Constantly think about my cancer and health				
Feel uptight or anxious about future				
Constantly feel tired or exhausted				
Lost or gained weight				
When good things happen, I don't feel happy				
Lost interest in sexual intimacy				
I feel helpless				
I feel hopeless				

If you find that most of your ratings fall in the category of often or all of the time, please call your healthcare provider. There are interventions that can help reduce and restore your former mood. Do not suffer in silence.



The Dying Patient — A Caregiver's Guide

Signs of Death

As family members, it is important to know the signs that may mean that the one you love is nearing death. Patients may or may not exhibit all the signs and symptoms listed below, and the time may vary. However, most patients show many of the following signs that usually means that death can be expected within 48 hours.

- Twitching of the arms or legs
- Unconscious picking at bed linens or clothing
- Restlessness (may express the desire to go somewhere or leave environment)
- Hallucination (may relate that they see or hear people or events which are not happening; often visions are of significant persons who are dead)
- Problems expressing wants or needs; difficulty speaking
- Statements may be made such as "I know I am going to die soon"
- Diminished appetite or desire to drink fluids
- Extremities feel cooler to touch
- Mottling (blotching) or cyanosis (turning to bluish-gray color) of the feet, hands, lips, arms, or legs
- Vision changes, often blurred
- Relaxation of facial muscles

- Change in breathing—Cheyne-Stokes respiration in which breathing becomes faster and deeper, followed by a slower rate, and then periods of no breathing lasting from five to 60 seconds. The closer death comes, the longer the periods of no breathing (apnea).
- Death rattle—breathing becomes noisy, bubbling and gurgling from fluid accumulation in the main airway
- Fever may or may not be present
- Urinary output decreased and all but stops
- Possible loss of consciousness

When patients enter into the final stage of dying, exhibited by a combination of signs and symptoms, notify the physician or agency providing care for the patient. Instructions will be given to you for specific care. Follow instructions provided.

Conscious Patient:

If no other instructions are given, remember your presence is the greatest gift you can give to one who is dying. Support at this time for the conscious patient includes:

- Stay near and listen to the patients even when they are confused.
- Do not argue or try to correct patient; state reality without being judgmental—"Mom, we are in your house in your bedroom. Tom and I are with you and we are not going to leave."

- Offer fluids and food but do not insist that the patient drink or eat.
- Continue to give medications and treat pain or fever as advised by physician. If patient refuses medications, respect patient's request. Do not force medications; this could cause patient to choke and the medications could be drawn into the lungs.
- Talk to the patient—most want to hear about old times shared or experienced. This is an excellent time to talk of pleasant events in the family that included the patient. Photo albums or favorite pictures, if the patient can see, are excellent sources for conversation.
- Provide soft music the patient enjoyed in the past. This can serve to relax the patient. For some, singing by family members of old songs or favorite hymns of their faith is relaxing.
- Physically touch the patient—holding hands, stroking the forehead, and giving a back rub are all comforting and reassure the patient she is not alone.
- Reading to the patient from her favorite books or playing tapes she found comforting could be relaxing.
- Encourage the patient to talk about her feelings and listen without correcting or being judgmental. Example: If the patient expresses the desire to leave or go somewhere, engage the patient in conversation: "Tell me why you would like to go. What do you want to do when you get there? Who would you want to see? Who would you like to go with you? How long would you like to stay? What would you most want to do there?" These questions allow the patient to take the trip mentally and express her desires. "You can't go anywhere; you are sick," may be true but shuts off all communications and deprives the patient of the mental escape the conversational journey can provide.
- For patients of faith, provide an opportunity to visit with the pastor or priest of their faith. Give the patient time alone with her spiritual leader. Often patients will share with their spiritual leader things they feel are too painful for you to hear. Remember, the patient, too, wants to continue to "take care of you," and this often means she will openly share potentially painful feelings or fears with someone outside the family. This also gives the person an opportunity to "make things right" if she feels there is a need.
- Praying is a very vital emotional release for the dying patient of faith. The spiritual leader can pray alone or with the family members and the patient.
- Say "good-bye" to the patient. How do you do this? Start by remembering the past. Patients want most to know that the life they lived made a vital difference. Hearing these words can frame their past as "valuable," and they can know that their life did make a difference. "Mom, I will always remember how you . . . and what you said to me . . . the difference you made when you did . . . I want you to know how special you are, will always be to me and how much I love you. In our hearts, we will never be separated." Often people feel that saying good-bye means saying, "Mom, I know you are dying, and I am going to miss you." This is true but will not serve as helpful to the patient because it does not reemphasize your loved one's value and continued influence on your life.
- Often, there comes a time when a patient must be given permission to die. This may come as a reassurance to the patient that it is okay to let go and leave this earth. Example: "Mom, I know you are so tired, and I want you to know it is okay not to fight anymore. We will miss you, but we will be all right." Often, this permission needs to be in reference to

some desire that the patient has or fear the patient may be holding on to. Example: “Mom, we are going to take care of Dad. Don’t worry about him; we are going to see he has everything he needs.”

- Ask if there is anyone the patient desires to see who has not been present. “Mom, is there anyone you would like to come to see you?” Again, some seem to hold on until someone they want to see arrives to say good-bye. When people requested by the patient come, give them some time alone for any private conversation needed by the patient.
- The greatest fear of a dying patient is dying alone. Reassure the patient someone will be with her, if this is possible. Arrange shifts if needed to sit with the patient.
- The greatest desire of a dying patient is to know that the life they lived was not futile—that their existence did make a difference. Family and loved ones can give this gift.

Unconscious Patient:

For the unconscious patient, instructions given by the physician should be followed. These usually include:

- Turn the patient every two hours to promote comfort and movement of secretions in the airways and lungs.
- Keep the patient warm and use pillows to prop the patient in different positions.
- Do not attempt to give an unresponsive patient any medications, fluids, or food by mouth. This could result in strangulation.
- Keep the lips moist with a lip balm. (The healthcare provider may make a sponge available to moisten and wipe the patient’s mouth out.)
- Monitor the body for pain or fever and treat with rectal medications as prescribed by physician.

- Rub the patient’s back when turning to relax the patient and promote circulation.
- Continue to talk, read, or play music just as if the patient was awake. The sense of hearing is the last to leave the body. Patients who were unconscious and regained consciousness have reported hearing people who talked to them during this phase. Be careful what is said in the room. Keep any conflicts or discussions you would not want the patient to hear outside of the room.
- Hold the patient’s hand or stroke the forehead or arms to assure the patient of your continued presence.

Family members and friends sincerely want to be with the dying patient, but fear losing control of their emotions. If you lose control and begin to cry, this is okay. Tears from family members will not damage this time; they may serve to show the patient how special she is to them. However, emotional outbursts of wailing and screaming could upset the patient. This should take place outside the patient’s room. Some people find it impossible to be with the dying patient. Other family members and friends must respect this decision without making any judgment. The goal is that the patient not be left alone and be kept comfortable.

For those who are able to remain with the one they love during these last days or hours, the gift of their presence is invaluable. Those who walk with the one they love through this time of death find a sweet sense of peace and accomplishment. The death is actually easier to deal with afterwards because of the emotional transition made during the experience.



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Employment Issues During Breast Cancer Treatment

Breast cancer surgery and treatment will affect your work life as well as your personal life. For many women the workplace is a source of support and affirmation, where co-workers and others nurture them through the difficult times, and where meaningful work can provide a needed distraction as well as a sense of purpose. Not everyone, however, has a good experience. In fact, the long-term effects of cancer and treatment can take a heavy toll on a woman's work and her relationship with co-workers. A legitimate fear of losing one's income and source of insurance adds to the already staggering burden faced by patients and sometimes inhibits them from seeking the support they need from co-workers and supervisors. One study found that one in four Americans worry that a cancer diagnosis could cost them their jobs; one in five said they would keep a cancer diagnosis secret.

Treatment may require some time away from your job. The federal Family and Medical Leave Act, passed in 1993, guarantees workers the right to take up to 12 weeks of unpaid leave because of serious illness without jeopardizing their jobs. Under the Americans with Disabilities Act, (ADA) which was passed in 1990, cancer patients who qualify as disabled—whose "life activities," that is their ability to care for themselves, are impaired by their disease—are entitled to significant protections, the same as anyone with a disability. That means if an employee chooses to reveal her diagnosis to her supervisor, she may not be discriminated against

in matters such as promotion and salary. It also requires that insurance coverage be offered to cancer patients or those with a history of cancer on the same terms as it is to other employees.

In the case of cancer patients, the "reasonable accommodation" the ADA requires might include the ability to take time off to deal with chemotherapy treatments or might mean a change in work assignments because of health issues. If an employer fails to grant "reasonable accommodation," the federal agency from which to seek redress is the Equal Employment Opportunity Commission (EEOC), which is listed in local phone books under United States Offices. A complainant is usually asked to come into the office and will be assigned an investigator to counsel and determine if their complaint falls into the EEOC jurisdiction. Special accommodations are available for those unable to visit due to illness or disability.

So how can you protect yourself against discrimination? Most employers are very understanding and offer their support during this time. Contact your supervisor(s) and inform them of your planned treatment. Give notice of your absence and an estimate of time away from your job. Determining when you may return to work is based on your physical and emotional ability and financial need. This decision must be made between you and your physician. Time off needed for recovery is based on the type of surgery, time you need to heal and the type of activities you perform at work.

If you have a job that requires repetitious use of your arm or strenuous lifting, inform your physician. Strenuous lifting jobs will require more time away before returning to work and may often be reason for job retraining. If your surgeon feels that your work may be too strenuous after surgery, ask for a referral to talk with someone in your company about job retraining.

Chemotherapy and radiation therapy may also require time away from work. Discuss with your physician the type of treatments, the expected side effects, and how you can best plan to continue to work if you so desire. For example, if you are receiving chemotherapy, you can plan to have your treatments on a Friday to allow for rest over the weekend before returning to work. Radiation treatments can be arranged for late in the afternoon or at lunchtime to permit minimum loss of work time.

If, however, you notice changes in work patterns and in the attitude of co-workers and employers, document and keep notes of what is occurring. Talk with your social worker or breast health navigator. Visit the Web sites of the American Cancer Society and Cancer Care for more information.

■ **Equal Employment Opportunity Commission (EEOC)**

1-800-USA-EEOC—for discrimination by a private employer.

■ **Job Accommodation Network**

1-800-526-7234—network to help employer and employee create a work environment to meet production needs and employee needs satisfactorily. It is part of the President's Committee on Employment of People With Disabilities.

■ **American Cancer Society**

1-800-ACS-2345—offers specific information on employee discrimination in a brochure, *Cancer—Your Job, Insurance and the Law*.

What To Tell Co-Workers:

Deciding what to tell your co-workers and employers about your illness is an individual decision. Some women feel that their illness and treatments are private and choose not to reveal the details. Others feel comfortable about answering any questions and need the support of their co-workers. You need to decide and not feel uncomfortable about refusing to tell your illness story every time someone asks. Also, discuss this with your support partner. Often, the support partner is the one to talk with visitors during surgery and recovery. They need to know how much or what you wish to tell others when asked questions.



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Exercise Prescription After Breast Cancer

It is proven that a regular exercise program during breast cancer treatment can significantly increase a patient's quality of life. However, it is important to have your health-care provider's approval before starting any exercise program.

A complete exercise program is based on strengthening your cardiovascular system, increasing your muscle strength and building flexibility. No single exercise program provides all benefits. For instance, swimming or biking is good for your heart but does not strengthen your bones. Talk to your healthcare provider about creating an exercise program designed for you and your needs.

Walking has been identified as an ideal exercise program. It strengthens your cardiovascular system while maintaining your bone density. However, if you decide on a walking exercise program, you need to incorporate stretching exercises into your routine as well as muscle strengthening exercises to have maximum benefit. Muscle building does not necessarily mean lifting heavy weights. Often using your own weight is the best way to build your muscles. Muscles are designed to support your bones; not the other way around. Loss of muscle strength, which begins in our early 20s, results in joint pain and obstacles to doing what we enjoy most.

Clinical studies have demonstrated that women who walked four to five times weekly during treatments, for 20 - 45 minutes, had

more energy; experienced less depression, nausea and insomnia; gained less weight; and required less medication to control side-effects of treatment than women who did not exercise.

Recommended Walking Exercise Program:

Frequency: 4 times a week minimum, 6 times a week maximum; try not to skip more than 1 day in a row if your health allows

Goal: Gradually increase and maintain your heart rate at 100 - 120 beats/minute during walking

Duration: Brisk walking at your own rate and capability; start at 10 minutes per session if you have not routinely exercised and increase gradually to 30 minutes per session as tolerated

Place: Preferably outdoors when weather permits, indoor mall or treadmill

Attire: Comfortable shoes designed for walking; layered, loose, cotton clothing to absorb perspiration; and personal identification in case of an emergency

Recommended Routine:

1. 5 minutes slow walking to warm-up
2. Increase walking to a brisk pace to increase heart rate to 100 - 120 beats per minute (take your pulse for 6 seconds and multiply by 10 to check your heart rate)
3. Gradually increase the time your pulse remains at your target rate by extending your walk as tolerated. Walking should increase your energy after your heart rate returns to normal and not cause fatigue. Do not exercise to a point of causing fatigue; this is not healthy, nor recommended.
4. Last 5 minutes, reduce pace to allow your heart rate to return to normal gradually

Do not exercise if you have:

- Fever
- Nausea or vomiting
- Muscle joint pain and swelling
- Bleeding from any source
- Irregular heart beat
- Dizziness or fainting
- Chest, arm, or jaw pain
- Intravenous chemotherapy administration on same day
- Blood drawing on same day—may exercise afterwards, prior exercise may alter counts
- Any restrictions placed on exercise activities by a physician

Exercise Precautions During Treatment:

If you are receiving chemotherapy your nurse/physician will alert you if your counts are in a range where exercise is not advised. Ask your nurse when you have your blood drawn if your counts are still in a safe range.

Recommendations *not* to exercise are as follows:

- White blood count less than 3,000 mm³
- Absolute granulocyte count less than 2,500 mm³
- Hemoglobin/hematocrit less than 10g/dl
- Platelet count less than 25,000 mm³

Exercise Tips:

- Exercise with a partner, if possible
- Carry identification with you
- Listen to inspirational tapes or your favorite music
- Keep an exercise log or diary to monitor your progress
- Exercise the same time of day if possible, to make it a routine
- Exercise or walk in a safe area, away from traffic

Exercise During Treatment:

Exercise during treatments—chemotherapy or radiation therapy—has to be self-paced. Only you can determine how much you can tolerate and when you feel up to exercising. Begin at a modest level and gradually increase your length of time. Take into consideration that during treatment there may be periods of decreased performance due to effects of treatment. Do not increase your fatigue by pushing yourself during these times. An exercise program can be easily modified to meet your changing needs during treatment; it can be started, suspended, decreased, or accelerated according to your physical energy. You may also want to consider other types of exercise such as biking, swimming, or gardening.

Check with your healthcare provider to determine if this walking program or any other exercise program is recommended during your recovery. An exercise program is one thing you can do to promote your own recovery while you are still in treatment.

My Commitment To An Exercise Program:

■ I will check with my doctor about starting an exercise program: (date)

■ I am starting an exercise program: (date)

■ I am going to ask (person) to join me:

■ I am keeping a record of my exercise program: (yes/no)

■ I plan to exercise: (place)

■ Items I need to start my exercise program: (shoes, shorts, shirts, tapes, radio):

Additional Physician Recommendations:



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Facing the Future After Breast Cancer Diagnosis

No woman would ever choose to have breast cancer. Breast cancer changes a woman's life forever. Yet, many patients have shared that the breast cancer experience added a greater dimension to their lives that allowed them to enjoy life even more than before their cancer. Recovery from breast cancer is a gradual mental process just as it is a physical one. The physical healing usually comes long before the psychological healing. You must take the steps to psychologically recover on your own timetable. Some women are eager to put the experience behind them, while others need time to absorb the impact of the changes that cancer brings. Only you can decide what is best for you. Just as your treatment team has plans for you to recover physically, you need to chart a mental recovery plan. Helpful suggestions from other breast cancer patients include:

- Demystify cancer. Learn the facts about cancer. Correct your misconceptions.
- Do not concentrate on the "what ifs." This is past and yesterday cannot be changed. Concentrate, rather, on what you can do now.
- Participate in your treatment decisions. This is your life and your body. You will feel much more in control when you express your needs about treatment decisions.
- Do not suppress your emotions and your need to talk about your experience. Grieve your loss. Talk to someone you can trust about your feelings and fears.
- Participate in a support group. Women who attend support groups tend to adjust better than those who do not reach out.
- Allow your family and friends to participate in your recovery by helping you as needed. It is therapeutic for them to feel needed.
- Provide outside support resources, such as written educational materials or support groups, to your family and/or friends to help them understand and adjust to your diagnosis. Encourage them to reach out and find the support they need.
- Form a partnership with your treatment team to battle the disease. Learn how you can best participate for maximum response during treatment.
- Communicate openly and honestly with your treatment team. They need your input. Remember, you are the only one who knows what is really happening to your body and what tools you need to recover.
- Eat healthy. Exercise regularly. Physically rest when needed. Get adequate sleep. Take time to do the things that make you feel good . . . whatever they may be.
- Don't revert to covering your anxiety with alcohol or drugs. This only postpones your psychological recovery.
- Learn focused thinking. Concentrate on the things that you have control over and can change. Do not focus on things that you have no power over or cannot change.

- Plan. Decide when and what you are going to do to make this a time of intensive growth as a person. Chart new courses for yourself that you have always wanted to pursue. This will give you new energy and facilitate recovery.
- Acknowledge that there are going to be days when things don't go well and you don't feel well, but remember to reach out, ask for help if needed, and know that "this, too, will pass." Don't try to be a "superwoman" emotionally.
- Prepare yourself for those emotionally trying days of treatment, medical tests, or anniversary dates by planning as stress-free physical and emotional schedule as is possible. Recruit a friend to share this time or plan a special treat for yourself to soften the experience.
- Remember, you are not a statistic, you are an individual. Do not look at your future purely from statistical tables. If only one person has ever beaten the odds, you have the right to become the second.
- Follow your physician's guide for medical monitoring after cancer, but don't make a "career" out of cancer. Don't let it dominate your thoughts and actions.
- Give to others out of your experience. Many women can benefit from your learning experience during breast cancer treatment. Find the best expression for you and your talents. Become a Reach To Recovery volunteer; join in fund-raisers or activities to support other patients.
- Look at the breast cancer experience as the "caution light" in your life that allowed you to slow down and examine your real needs and wishes for the future.
Start today to build the tomorrow that you desire.



Follow-up Care After Breast Cancer — Monitoring Your Future Health

The end of your treatment is finally here. This is the day that you have been waiting for since your diagnosis. However, when it comes, you may be feeling a little anxious, perhaps even a little frightened, and certainly wondering what to expect in the future. You've probably heard about and met women who have remained cancer free for many years. But you've probably also heard about women whose breast cancer recurred, sometimes within months or years after they finished treatment. This is obviously terrifying for you and your family.

Now that you are no longer in active treatment, it is important to know how to monitor your health in partnership with your healthcare team. You need to understand what to expect in the future months and years when you return for your checkups and to also know the signs and symptoms that should be reported to your physician between visits. This is vital because most recurrent breast cancer is suspected or found by women themselves, and the majority of recurrences are detected between scheduled medical visits. When choosing the doctor to handle your follow-up care, consider choosing the one with whom you feel most comfortable and one that is an expert in cancer treatment.

Signs and Symptoms to Report

Certain symptoms may indicate that your breast cancer has recurred. If you experience any of these symptoms, it is important to call

your doctor so that they can be evaluated and appropriate follow-up diagnostic tests performed. Symptoms that need to be reported to your physician include:

- Chronic bone pain or tenderness in an area
- Skin rashes, redness, or chronic swelling
- New lumps in your breast, chest wall, under arm or on the neck
- Changes in your breast(s) or surgical site such as a rash or discoloration
- Chest pain and any shortness of breath
- Persistent abdominal pain
- Headaches, dizziness, or rapid changes in vision
- Changes in weight, especially weight loss

The majority of breast cancer recurrences happen within the first five years. The most common way recurrence is discovered is by women reporting changes or symptoms as described above, followed by physician's interview about recent physical history at a follow-up appointment, and finally by a physician's physical exam of a patient. Therefore, one of the most important things you can do is keep your scheduled return appointments and maintain open, honest communication with your doctor by reporting any changes you observe in your health. With this open partnership, any recurrence should be detected early.

Monitoring Your Health

- **Breast Self Exam:** Perform a breast self exam (BSE) each month. This includes a careful check of your breast(s) or surgical site for any new lumps, redness, or swelling. This is particularly important if you have had breast surgery of any kind (mastectomy, with or without reconstruction or implant, or lumpectomy). If you do not feel competent performing a self-exam, your healthcare provider can instruct you on how to do a correct exam. You will then be able to tell the difference between a lump, normal breast tissue, normal scar tissue, changes in a radiated breast and implant material.
- **Follow-Up Exams:** Have a thorough physical exam every three to six months for the first three years after your primary therapy; then every six to 12 months for the next two years; annually thereafter. Close follow-up during the first few years is important because 60 to 80 percent of all breast cancer recurrences are detected within the first three years after therapy. Of course, your physician will have you come back into the office between visits if you notice any change. Your healthcare provider will take a detailed medical history at each visit. During your physical exam, your doctor will look for any physical changes that relate to your general health and/or any symptoms that may suggest your cancer has recurred or has spread to another part of your body (systemic disease). In addition to performing a careful breast exam, your doctor will closely examine your entire chest wall and check for lymph node enlargement in other areas of your body. Your heart and lungs will be listened to and your abdomen, neck, and other areas will be checked for any swelling. Your doctor will also check for any changes in neurological abnormalities, liver enlargement, or bone tenderness that may be a sign of metastasis.

If you are in good physical condition and have no symptoms, a physical exam and a blood count may be all the diagnostic testing required at your follow-up visits. However, if your physician feels it is necessary, other testing may be performed. Remember, however, one of the most important components of the exam will be your reporting any changes or symptoms you have experienced.

- **Mammography After Breast Surgery:** Have a yearly mammogram. If you had breast-conserving therapy (lumpectomy), you should have your first post-treatment mammogram six months after completion of radiation, then annually, or as indicated by your doctor. (Some physicians keep the six-month schedule for the lumpectomy patients for several years.) If you have had a mastectomy, you still need to have a mammogram of the remaining breast. Some physicians may also prescribe a mammogram of the tissue remaining at the site of the mastectomy while some may order a mammogram if you have an implant(s).
- **Pelvic Exam:** Every woman should have a pelvic exam at regular intervals. For most women, this will be yearly. If you have had a total abdominal hysterectomy and oophorectomy (removal of your ovaries), this may be done less often. Your periodic pelvic exams should include a Pap test as well as rectal and vaginal exams. If you take or have taken tamoxifen for prevention, you could be at increased risk for endometrial and uterine cancer and, therefore, your physician will ask you specifically about vaginal discharge or bleeding. There is no need for routine endometrial biopsies as was once recommended.



Grief and Loss After Breast Cancer

After breast cancer, it is normal to experience a period of grieving the losses brought by the diagnosis. Many things have changed because of your cancer. You need time to allow yourself to think through what has occurred and to incorporate these changes into your life.

Many women feel that in order to recover emotionally from breast cancer, they need to be "strong." They assume that tears indicate weakness and demonstrate they are unable to cope. The opposite, however, is true. Tears are a positive sign that you are in touch with your feelings and that emotional healing has begun. Do not deny yourself this part of resolving the loss. Emotional recovery requires that you feel the pain, experience the desolation and sense the hurt. Do not deny these feelings, cover them up, or run away from them. Instead, understand that grieving is common to everyone. You can work through your grief and arrive at a place where it all begins to take on meaning and where life feels familiar again.

Grief will be affected by:

- Your age and your stage of life
- Your personality
- The value you place on your breast and body image
- Your personal support system
- Your perceived support from the medical community
- The financial strain involved
- The effect on your career

- The effect on your social life
- The effect on your role in the home
- Your previous experiences of coping with loss
- Your spiritual beliefs
- Your available resources (educational and physical)

As you can see, there are many variables that affect how one copes with loss. There is no one "right" way, exact length of time or degree of intensity; rather, it is whatever works for you. The natural stages and responses to loss that many patients experience are:

- **Feelings of shock and disbelief** often occur at the time of diagnosis, causing physical and mental immobility. You don't remember what is said or done; you can't seem to physically move; you feel "frozen with fear."
- **Becoming fully aware** of your disease, often visibly manifested by:
 - crying uncontrollably
 - angry outbursts
 - physical symptoms: shortness of breath, choking sensation, sighing
 - flashes of extreme, overwhelming anguish; feelings of panic
 - urgency to retell your story to others
 - loss of appetite
 - bitterness toward others or God
 - guilty feelings

- insomnia
- depression with withdrawal
- loss of sex drive

Many of these emotions may be viewed as negative. However, when you begin to feel angry or bitter, this may be a positive sign that you are mobilizing your energies to fight. Emotions are turning outward. These, too, are steps to recovery. This period is often characterized by a need to understand the disease, its treatment and future. Educational information is necessary and beneficial to make a successful transition.

- **Bargaining** (requesting an exchange of favors from a higher power) or **restitution** (offering to right something done in the past for exchange for health) indicates you are incorporating the loss and moving forward with your life.
- **Accepting the loss** is the time when the breast cancer experience is in the past but you may find yourself:
 - thinking about the experience often
 - focusing on what you lost
 - experiencing periods of crying and depression
 - feeling physical symptoms of body pain
 - dreaming about or having nightmares about the loss
- **Incorporating the loss** is when resolution occurs and is identified by:
 - desire to plan for the future
 - ability to look back and recall positive memories
 - desire to establish new relationships and “get on” with life
 - return to previous social roles
 - desire to give to others what was learned through experience

Managing grief is not easy. Ann Kaiser Stearns states in her national best-seller, *Living Through Personal Crisis*, that, “Grief is not a mental illness. It just feels that way sometimes.” Grieving is often accompanied by many other strong emotions such as being in a state of confusion. If this description sounds familiar, you are typical of many patients.

Some people, however, find it difficult to progress through each stage and reach the level where they can incorporate their loss and look to the future. No timetables or deadlines are listed with each stage of grief because each patient moves at her own pace according to the variables affecting the process. However, if adequate time has passed and you recognize signs that your grief work is not complete, seek professional help. Call your healthcare provider or clinic where you were treated and ask for a referral to a grief professional. Counseling or anti-depressant medications may be needed to assist your healing process. Support groups are a valuable resource for resolving grief. Indications that help is needed include: Inability to complete the normal grief process within one year of the loss (diagnosis)

- Continued periods of depression lasting longer than several days at a time
- Behavior that manifests obsessive-compulsive disorders
- Social isolation
- Inability to discuss loss
- Excessive dependence on drugs or alcohol
- Thoughts of suicide

Reaching out for help does not mean you are weak, but shows an inner strength that you recognize your need for temporary assistance. Take charge of your emotional healing and ask for the assistance you need.



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Health Insurance During Treatment

When you are diagnosed, inform your insurance company of your diagnosis and ask for any guidelines for filing claims or making payments on claims. Ask for the following information:

- Need and procedure for pre-approval of hospital admissions
- Guidelines for second opinions from physicians
- Procedure to file claims
- Forms to file claims
- Name of person at insurance company who will handle your claims
- Amount of deductibles, if any, required before claims are paid
- Limits imposed on amounts paid for surgery, chemotherapy, radiation therapy, or reconstructive surgery
- Coverage for new or "experimental treatments" (autologous stem cell therapy, or autologous bone marrow treatments, etc.) or for participation in clinical trials limits for the amounts covered.
- Coverage for delayed reconstruction if a permanent prosthesis is purchased in same year (ask if they will pay for both or if one excludes payment for the other).

Consistently filing claims and making payments can become burdensome and confusing. If so, ask a family member or a friend to help with or perform this task. Record keeping makes the task much simpler. The following suggestions may be helpful:

- Purchase a calendar (pocket) to be used to record all appointments.
- Keep records on the calendar including physician visits, procedures performed, medication or supplies purchased.
- Provide the insurance or billing manager at your physician's office or cancer center with appropriate forms and ask if they will file them for you.
- Ask for a copy of all charges at the time of service, or ask to have copies mailed to you.
- Keep copies of all charges from appointments, services, medications, or medical supplies in one place.
- Check periodically to see if appropriate insurance payments are being made to medical providers.
- If problems arise with payment, contact your healthcare facility or provider and ask for help in providing the correct information needed to receive repayment.
- Call your insurance provider and talk with your claims representative to find out what additional records or assistance is needed from your medical providers. Offer to gather the information needed. (Always ask and write down the name of the person to whom you speak—you may need this for future reference).
- Keep all premiums current. **Do not allow your insurance to lapse from lack of payment.**

Insurance coverage is more difficult to obtain after any major illness. **For this reason be very careful to keep all premiums current.**

- Before you decide to change jobs, be sure you will be covered under the new employer's insurance program.

Occasionally, a cancer patient may be discriminated against in matters of insurance because of illness. If you have reasons to believe your employer has treated you unfairly, there are laws to protect you. The federal Family and Medical Leave Act, passed in 1993, requires that insurance coverage be offered to cancer patients or those with a history of cancer on the same terms as it is to other employees. There are also state laws, which vary from state to state, to protect you. Ask your social worker who may be able to help you in this matter.



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Helping Someone You Love Who Has Cancer

If someone you love has cancer, how can you best help? Breast cancer patients offer the following recommendations based on their experiences.

- One of the most important things you can do as a close family member or friend is to simply be there when needed. It is important to listen to the patient. Ask what they need or want. Accept the patient's behavior, knowing that stressful events such as a cancer diagnosis will often cause one to act out of character. They may express anger, resentment, discouragement, and act depressed. This is not uncommon after a diagnosis. Avoid judgmental comments and conflicts.
- If you are not a close family member, but are a friend or acquaintance and are not sure when to visit, simply send a card or telephone. Ask when would be a good time to visit. "Would it be convenient for me to drop by tomorrow afternoon or would it be better if I wait until next week?" Dropping by unexpectedly may cause stress if the patient is not prepared for a visit or does not feel up to receiving visitors.
- When visiting, keep your visits brief. Patients are overwhelmed with making treatment decisions after a diagnosis. During treatment, their energy level may not be up to long visits.
- Ask for specific ways to help. "May I bring over a casserole?" "Can I drive the children to school this week?" "Can I pick up some groceries while I am doing my shopping?" "I am available to drive you to your treatments if you would like." Offering what you can do instead of being vague is very helpful and appreciated.
- Ask about food preferences before you prepare and take it. "I am making a chicken casserole. Does your family eat this?" or "What's the family's favorite food?"
- During cancer treatment, helping the mate and children is helping the patient. Remember to ask the mate specifically what you can do to help them during this time.
- When visiting, resist asking direct questions about her diagnosis or treatment. Patients may not want to talk about it or may want to share the details with only a few people. Let the patient guide your discussion about her illness. Allow her the opportunity to discuss it with you if she desires.
- Do not tell the patient stories of other people you know who have had something similar unless the news is good. Depressing stories could cause additional stress.

- Avoid comparing her illness with someone else you know. Breast cancer is a common name for more than 15 different types of breast tumors. Patients very seldom have enough in common to be compared with another patient's treatments and outcomes.

- Ask her before you conclude your visit if you can call and talk to a family member or another support person about how she is doing. Calling daily or even weekly may be a burden to someone already under tremendous stress.

- Patients report one of the greatest gifts they received during their treatment was having a group of friends hire a maid one day every other week to do the heavy housework. Be creative in how you can help.



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Comfort Measures for the Homebound Patient

The following measures are designed to bring support and relief to the patient in the stage of disease where she is confined to home or bed.

Company

- Caregivers who understand the patient's limitations and energy levels should monitor visits by family and friends. Caregivers must enforce who will be able to visit, time of day and length of visits in order to keep the patient as rested as possible.
- Telephone calls should be made during hours when the patient is not resting or asleep.
- Patients always welcome cards and notes.
- Place the patient in the area of the home where family members spend most of their time, if the patient is able to tolerate the noise or stimulation. This prevents the patient from feeling isolated because of her illness.

Environment

- Put the patient's bed or chair close to a window so the patient can look outside.
- Hang a bird feeder outside the patient's window.
- Keep room warm or cool, according to the desires of the patient.
- Open doors or windows several times a day to let in fresh air.

- Keep the room uncluttered and clean.
- Evaluate the level of noise and eliminate sources, if possible.
- Monitor for odors in the room and keep the room smelling clean.
- Use soft lighting and avoid bright lights directly in the face of the patient.
- Place family pictures or favorite objects in clear view.
- Keep the bed clean and free of wrinkles.
- Keep bed clothing comfortable and change often.
- Keep all items used often in reach of the patient.
- Provide a method to call for help when needed (bell, buzzer, telephone).
- Keep water and other fluids in reach of the patient to encourage drinking.
- Change the patient's positions every two hours when awake. Move the patient from the bed to a chair and, if possible, to other areas of the house to prevent boredom.
- Provide a sheepskin pad (found in medical supply stores) to give extra comfort to areas under buttocks and prevent breakdown of skin.

Activities

- Keep books and magazines available and read to the patient if the patient can no longer read.

- Play cards or board games with the patient.
- Play video or computer games.
- Watch television.
- Listen to the radio.
- Draw, paint, color.
- Do crossword puzzles.
- Listen to cassette tapes.
- Do needlework.
- Keep a diary.
- Go for a walk or ride when patient is able.
- Bring in favorite food from a restaurant and eat with the patient.
- Plan some type of exercise (active by patient or passive with you providing the activity) to keep the patient's muscles from losing their strength.
- Give patient a back rub or massage or hire a massage therapist.
- Provide a bedtime routine to prepare for sleep. A back rub, warm drink, or bedtime snack can provide the atmosphere for a restful night's sleep.



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Learning to Relax

The diagnosis of cancer is a very stressful event. After the diagnosis, the continuing process of healthcare decisions causes fear, confusion, and sometimes anger which results in stress. Surgical choices, chemotherapy, radiation therapy, dealing with all the changes illness brings—the list of additional stressors that cancer brings goes on and on. A limited amount of stress may be helpful to energize and motivate you to become an active participant in treatment. However, constant stress can be a major contributor to your physical and mental health.

When a person is placed in a fearful or stressful situation, the body reacts with a “fight or flight” response. Our bodies prepare for battle to fight or to run from our attackers. During this time, our heart, breathing and metabolic rates increase while our muscles become tense and the digestive process slows down. Researchers have concluded that chronic arousal of the fight-or-flight state greatly impairs the immune system leading to permanent physiological changes resulting in disease. They have also found that practicing relaxation techniques can alter the process.

Dr. Herbert Benson, founder of the Mind/Body Medical Institute and associate professor of medicine at Harvard Medical School, has conducted research that has proven that a person can consciously alter this fight or flight response by learning the “relaxation response” when faced with fears and stressors.

The relaxation response decreases the respiratory, heart, and metabolic rates while relaxing muscle tension in the body. In other words, the relaxation response is a built-in method of stress control. There are many relaxation methods and not all work for everyone. You must find the best method to help you break from the stress cycle. Most people have difficulty spontaneously relaxing their bodies and need a plan or structure.

How do you learn to relax? It begins with a conscious effort.

- Find a quiet room away from interruptions and sit up straight in a chair.
- Place your hands comfortably in your lap.
- Close your eyes.
- Select a phrase, prayer or word that gives you a sense of peace, love, and safety.
- Take a deep breath very slowly and hold it for a few seconds.
- As you breathe out slowly, repeat the phrase or word.
- Continue inhaling and exhaling while repeating your phrase for approximately 20 minutes.
- When your mind wanders to another thought, refuse to entertain it and gently bring your thoughts back to your breathing and the repetitive phrase.
- Open your eyes and gradually re-orient yourself to your surroundings.

Another technique is to replace the repetitive phrase with a mental picture of a scene that brings a sense of peace and safety—a garden, park, seashore, etc. As you breathe slowly, mentally feel and explore the beauty of this favorite place in your mind—smell the fragrances, feel the warmth of the sun, hear the familiar sounds. Visualization also promotes the relaxation response in your body.

During relaxation you may feel changes in sensations such as a tingling, floating, drifting, or dropping. This indicates that your body is relaxing. It is suggested that the relaxation response be practiced twice a day.

Mini Relaxation Responses

Often there are times when stressful situations arise when we need to gain control but we cannot leave for a quiet place. Simply concentrate on breathing and repeating your phrase with your eyes open, if necessary. Take a deep breath to increase the oxygen to the brain and clear your thinking. Focus on a word, phrase, or image which will force concentrated breathing to interrupt the anxiety. Practicing a mini relaxation response can be helpful at such times as having an IV puncture or diagnostic test, during any new procedure, or taking chemotherapy or radiation. Utilize your ability to manage stress, keeping your body in a more relaxed state by practicing the mini relaxation response anytime, anywhere.

Taking charge and managing stress improves both your mental and physical health. It can be as helpful to your recovery as your medications. Ignoring stress, allowing it to become exaggerated and avoiding its consequences can damage your immune system and impede your recovery.



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Living Wills — Advanced Directives

Living wills or advanced directives are written documents that express preferences for the type of medical interventions to be used at the end of life. In 1991, the United States Supreme Court enacted the Patient Self-Determination Act (PSDA) to give a person the right to make advance directives concerning future health care. Hospitals, home care agencies, hospice programs and skilled nursing facilities that receive Medicare and Medicaid funding from the federal government are required to provide information on a patient's right to participate in this decision. They must also document these requests in the patient's medical record and provide information about the state laws regarding living wills.

Living wills allow people to make decisions about their level of treatment if their condition reaches the stage where they are not able to speak for themselves. These options may include refusing procedures and all other accepted medical treatments used to sustain life. Advanced directives also allow you to designate a person to make these health care decisions for you. This designation is called a durable power of attorney for health care.

When patients enter a health care facility, they will be asked about their preferences or previous decisions concerning life-extending care if the time comes when they are unable to make end-of-life decisions. "Do you have a living will?" or "Have you made any advanced health care directives which we should be aware of?" are typically asked questions.

These questions are asked of all patients and have nothing to do with the type of treatment or diagnosis of a patient. Often, patients think that the question was directed toward them because of their diagnosis. However, when facilities ask about advanced directives they are conforming to the requirements of the law.

Living wills allow people to plan ahead and make decisions about their desired level of care. Additional information may be obtained from:

- State Attorney General's Office
- State Bar Association
- State Office on Aging
- State Hospital Association
- Social worker at cancer center



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Message to Family Members of Cancer Patients

The one you love has received the diagnosis of cancer. Because you love her, you need to understand how you can best help during this experience. Listed below are support components that other patients have said were essential to their recovery.

- Assure the patient that you will be there to support her when needed—that her cancer will not change your relationship with her. Her greatest fear is being left alone to suffer or feeling that she is a burden to the family unit because of her illness.
 - Allow her to verbalize fears, concerns, and thoughts without critical or judgmental input from you. A person who cannot communicate openly with family members may not master the emotions the illness creates and this can impede recovery. Feelings may change as time passes. Please be patient and encourage her to share freely.
 - Accept her tears as a necessary part of healing. Tears are a common reaction to loss of health status, such as a diagnosis of cancer. A person who does not cry when suffering great change in her health is a person who is probably not in touch with the reality of her loss. **Tears are not a sign of weakness**, but a sign that healing is taking place. Do not fear that she will be upset if she sees your tears; instead, seeing your tears gives her permission to openly cry with you. This is often the time that emotional healing begins in a family.
- Tears serve as a salve to the soul, for both the patient and their family members.
- Allow her time to be alone to sort through her loss and feelings. Sometimes family members wrongly believe that the patient must be talking to or surrounded by family members after the diagnosis; but often the person wants and needs time alone to silently think about what is occurring. Do not think that this is a sign she is shutting you out. Instead, it is a sign that she is thinking through her problems. Some people need more privacy than others. Allow her this silence and offer assurance that you are there to talk openly if and when needed.
 - Understand that she cannot talk openly to **everyone** about her feelings. Often patients will choose only one or a few family members or friends for open communication because it may be very uncomfortable to talk with everyone about their situation. Do not insist that she keep retelling her “illness” story or feelings. As long as she is talking to one or more persons openly she will do well.
 - Recognize that the most **stressful** and **damaging** event that can slow the healing process is family conflict. Family stress can alter the patient's immune system function, thus blocking the key factor to recovery. If the immune system is compromised it **cannot** perform properly; therefore, healing cannot take place.

Even the most medically advanced cancer treatments cannot work if the patient is under constant stress at home. Attempt to minimize any conflicts in her environment. It is essential that she is in an atmosphere where she feels safe and away from conflict. Do your part to avoid conflict with the patient while not overtly secluding her from her normal family life.

- Support the patient in the way she feels she needs and wants help. Do not assume you know what she needs; ask her. Some patients feel stripped of their roles and usefulness when other family members suggest that they are unable to fulfill previous family responsibilities. She needs to feel that she is still a vital and essential part of the family. Do not take her roles or responsibilities away unless the patient is too weak or requests relief from her routine family duties.

- After a cancer diagnosis, there is much to be learned and many decisions to be made about the diagnosis and treatment. If the patient agrees, it may be helpful for a family member or friend to gather accurate, useful information through which the patient can make decisions that meet her needs. It is also beneficial for this family member or friend to accompany her to appointments where these options will be discussed to help facilitate and verify the decision making process.

- Offer to go with the patient to a support group to learn more about illness and how you can assist her to effectively cope.

Remember:

- This is the same person that you knew before diagnosis. She would like as little change as possible.
- Let her talk openly and freely when needed.
- Do not feel tears are a weakness.
- Allow her to maintain her former roles in the family as much as possible.
- Eliminate as much stress as possible from her environment.
- Help her learn as much as she can about her disease.
- Offer to go with her to support groups or to seek additional coping skills if needed.

You are a vital part of the recovery process.
Your support may be as important as the medications the patient will receive.

My Prayer During Breast Cancer

Lord, I have just received the diagnosis of breast cancer.

Still my anxious heart as I seek to understand why.

Teach me to transform this suffering into growth,

My great fear of tomorrow into faith in your presence,

My tears into understanding,

My discouragement into courage,

My anger into forgiveness,

My bitterness into acceptance,

My experience with cancer into my testimony,

My crisis into a platform on which I can learn to help others.

God grant that one day I can embrace this time as my friend,

and not as my enemy.

Judy C. Kneece, RN, OCN



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Pregnancy After Breast Cancer

If you are still in your childbearing years, you may want to know whether you can have a child after breast cancer surgery or treatment. Many women have had healthy babies after breast cancer surgery and treatment, even in their 40s. A female has all of her eggs in her ovaries at the time of her birth. These eggs in the ovaries are not damaged by chemotherapy because the cells of the eggs are not in the dividing process during treatment. Chemotherapy may cause a meno-pausal condition that may or not be reversed after treatment is completed. If you remain in a menopausal condition (your menstrual periods do not return) you will not be able to conceive. If you regain your periods, you may or may not be able to become pregnant. However, many variables must be considered when making a decision to get pregnant after surgery and treatment. It is a decision that requires gathering all the facts and carefully weighing the risks and benefits.

You need to discuss the following variables with your team of healthcare providers. Their focus will be on your health and how pregnancy may affect you.

- Your type of cancer
- Degree of difficulty in diagnosing your cancer (For example, it was not visible on mammogram or was not a palpable lump. This makes monitoring you during pregnancy even more difficult.)
- Ductal involvement (ductal or in situ cancer)
- Tumor size
- Lymph node involvement
- Evidence of spread to other parts of your body
- Type of treatment required to initially treat your cancer (chemotherapy, stem cell, bone marrow)
- Response of cancer to treatment
- Time elapsed since treatment (some healthcare providers ask patients to wait for a certain period of time)

Ask your healthcare providers what other variables you may need to consider before making your decision. You can only make an informed decision when you have gathered all the data from your treatment team and their perspectives on how pregnancy could affect you. Pregnancy does not cause breast cancer. However, if your cancer recurs, pregnancy may preclude some treatment options that would provide optimal treatment at the time of discovery. The final decision is an individual one. You have to determine the degree of risk you are willing to take to have a baby. Your healthcare providers will be happy to assist you by providing the medical facts to help you make a decision that's right for you and your family.



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Prosthesis Selection

A prosthesis is a specially-designed form to be worn inside your bra to replace your removed breast. After the incision from your mastectomy heals, usually in four to six weeks, your physician will give you a prescription for a prosthesis. The prescription is necessary for insurance reimbursement for the purchase of your prosthesis and several special bras to wear with the form. A prosthesis may vary from a simple, soft, fiber filling placed in your bra to a custom-made form of your missing breast.

While you are healing from your surgery and cannot wear a permanent prosthesis, you may want to obtain a temporary form (soft, fiber puff) that you place in a soft, front-closing bra. You can purchase these temporary forms or bras from your local prosthesis shop or boutique located in some hospitals or cancer centers. Camisoles are also available with the soft prosthesis pocket inside. Some women feel more comfortable going braless while healing. You decide what suits you best.

The temporary prosthesis is very lightweight and this can cause it to ride up and be higher on the chest wall. This can be corrected by anchoring your bra to your undergarments with a piece of elastic which is sewn and attached by snaps or Velcro® to hold the bra in position. Some women have found that weights, such as those used for draperies and found in fabric shops, may be sewn into the bra cup on the prosthesis side to add additional weight and prevent the bra from riding up.

When you are healed and ready to shop for a prosthesis, call and make an appointment for your fitting. Specialty shops, which only deal with mastectomy products, hospital boutiques that sell women's health products and some department stores carry the forms. Ask your healthcare provider or look in the yellow pages for your local supplier.

Schedule enough time, one to two hours, to be able to carefully select a prosthesis that meets your needs. It is helpful to take a friend or mate with you to give you an honest opinion on how the prosthesis looks when wearing clothes.

Breast forms, like our breasts, come in many shapes and sizes. They will feel much like your own skin to touch and are made of various types of materials. Like natural breasts, prostheses vary in weight and their firmness varies from soft and pliable to relatively firm. They are also designed for the right and left side. Some come with nipples, others have nipples that can be attached. Most prostheses are made to wear inside a special pocket of your bra. Some attach to your body with an adhesive tape (much like Velcro®) and some have adhesive-type glue that adheres to your chest wall, so that when you move, the prosthesis moves. This prevents the prosthesis from riding up. With these models, you can wear your own bras or go braless. If you feel this type would be appropriate for your lifestyle, you may ask to try a sample of the adhesive tape to wear for a few days to be assured that you are not allergic to the adhesive.

If you have reconstruction and do not have the nipple reconstructed, there are nipple prostheses. Women who have had segmental mastectomies or lumpectomies may need a prosthesis called an “equalizer” or a prosthesis that is designed to fill in the section of tissue removed from the breast.

Mastectomy bras are designed to hold a prosthesis. Some women choose to alter their own bras by adding a special pocket to accommodate the prosthesis. The prosthesis fitter can help you decide if this will be a good option for your bras and can tell you how to alter your bras. It is recommended that you not use underwires in your bras after surgery because they can rub the incision site, causing irritation. You can also alter your swimsuit to accommodate your prosthesis. Specialty shops, many now located within hospitals or cancer centers, have many items of clothing available for after mastectomy surgery such as sportswear, swimsuits, and lingerie designed to accommodate your prosthesis.

It is important to ask your fitter the following questions about your prosthesis:

- How do I clean my prosthesis?
- Can I get it wet?
- How long will it take to dry?
- Does perspiration damage the prosthesis?
- Will swimming pool chemicals cause any damage?
- Is there an exchange policy if I decide it does not meet my needs?
- How long should the prosthesis last?
- How much will my insurance provider pay toward the cost?
- Does my insurance company pay for mastectomy bras?
- How often will my insurance provider pay replacement costs of my prosthesis?
- How often will they pay for replacement bras?

Prices for prostheses vary from a few dollars for the fiber filling to place in your bra up to \$350.00. The average woman spends around \$250.00 for a prosthesis. Those that are custom-made and that adhere to your body are more expensive. Your fitter will be able to tell you how much difference you may have to pay over the allowance that your insurance provides. It is also very important to check with your insurance provider to see if they cover reconstructive surgery if you have purchased a prosthesis in the same deductible year. Some companies will pay for only one or the other, but not both. This is very important if you plan to have reconstruction at a later date.

If you cannot afford a prosthesis, some local American Cancer Society units or cancer centers have loan closets. Women who have had reconstruction may donate their prosthesis to be given to other women that cannot afford to purchase one. Call your local unit and ask if they provide this service. The **Y-Me** organization has a Prosthesis and Wig Bank to provide women with low finances a free prosthesis or wig, if they have the appropriate size of prosthesis or color of wig available. The telephone number for **Y-Me** is 1-800-221-2141.



ST. VINCENT'S BREAST HEALTH CENTER

St. Vincent's HealthCare

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Reading Recommendations

Breast Cancer

A Breast Cancer Journey

American Cancer Society
www.cancer.org
(800) ACS-2345

Breast Cancer Survivor's Club:

A Nurse's Experience

Lillie Shockney

The Human Side of Cancer:

Living with Hope, Coping with Uncertainty

Jimmie C. Holland, Md.
Sheldon Lewis

Children

Talking With Kids About Cancer

Dave Dravecky, Outreach of Hope
1-719-481-3528
outreachofhope.org

General Encouragement

Life Strategies

Phillip C. McGraw, Ph.D.

You Don't Have to Suffer:

A Handbook for Moving Beyond Life's Crises

Judy Tatelbaum

Timeless Healing

Herbert Benson

Sexuality

Sexuality and Fertility After Cancer

Leslie R. Schover, Ph.D.

Spiritual Reading

The Encouragement Bible:

The Answer for Those Who Hurt

New International Version
Dave Dravecky's Outreach of Hope
Dave and Jan Dravecky
Joni Eareckson Tada

Dear God, It's Cancer

William A. Fintel, M. D.
Gerald R. McDermott, Ph. D

Do Not Lose Heart

Steve Halliday

Where Is God When It Hurts?

Philip Yancey

When Life Hurts

Philip Yancey

Surprised by Suffering

R.C. Sproul

A Grace Disguised

Gerald L. Sittser

The Power of Encouragement

David Jeremiah

Hinds Feet In High Places

Hannah Hurnard

Laugh Again

Charles Swindoll

Dave Dravecky's Outreach of Hope

1-719-481-3528
outreachofhope.org
The Encourager Magazine (online)



ST. VINCENT'S BREAST HEALTH CENTER

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Resources for Breast Cancer Patients

Dear Patient,

During treatment for breast cancer there are many sources of information available to you—most free of charge. Listed below are some that provide special information on breast cancer.

General Resources

AMC Cancer Research Center's Cancer Information Line

1-800-525-3777

Professional cancer counselors provide answers to questions about cancer, support and information on free publications. Equipped for deaf and hearing-impaired callers.

American Cancer Society (ACS)

www.cancer.org

1-800-ACS-2345 (1-800-227-2345)

Provides free, written information on breast cancer, support group information and referral to *Reach to Recovery* program.

Association of Cancer Online Resources

www.acor.org

Online cancer information system that archives online support groups, information on treatments and clinical trials, links to other cancer education and advocacy groups on the Internet, and much more.

BreastCancer.net

www.breastcancer.net

Archives the latest news on breast cancer and allows quick and specific searches.

BreastCancer.org

www.breastcancer.org

Breast cancer education site including articles, news, newsletter, and chats.

CancerIndex.org
www.cancerindex.org

Online index of cancer resources and Web sites providing information and support. Provides a collection of media clips on various breast cancers. To access media clips, choose “Breast Cancer” on the list on the main screen, and then click on “Multimedia Breast Cancer Resources.”

Cancerlinks.org
www.cancerlinks.org

A directory of other sites and resources on specific cancers.

MEDLINEplus: Breast Cancer
www.nlm.nih.gov/medlineplus/breastcancer.html

Breast cancer news, general information, clinical trials and information available in Spanish.

National Cancer Institute (NCI)
www.cancer.gov
1-800-4-CANCER (1-800-422-6237)

Provides free, written information on all aspects of breast cancer.

National Comprehensive Cancer Network:
Breast Cancer Treatment Guidelines for Patients
www.nccn.org

Decision trees included in this site aid patients in choosing treatment and follow-up options. Information is also available in Spanish.

Oncolink
www.oncolink.com

The Abramson Cancer Center at the University of Pennsylvania has archived general information and resources and offers an online form to ask questions not covered on the site. Information is also available in Spanish.

Organizations/Advocacy Groups

Avon Breast Crusade

www.avoncompany.com/women/avoncrusade/

A fundraising effort that has raised over \$400 million for breast cancer education and research in countries around the world.

African-American Breast Cancer Alliance (AABCA)

www.geocities.com/aabcainc

800-ACS-2345

This organization provides education to African-American women on breast health, early detection, and breast cancer support groups. For more information contact the Alliance at 612-825-3675.

Cancer Care, Inc.

www.cancercare.org

1-800-813-HOPE (1-800-813-4673)

Offers free assistance to cancer patients through counseling, education, referral and direct financial assistance. New telephone education workshops provide access to the latest breast cancer information.

Susan G. Komen Breast Cancer Foundation www.komen.org

1-800-IM-AWARE (1-800-462-9273)

Offers information on all areas of breast cancer treatment and support.

Native American Women and Breast Cancer

www.komen.org

1-800-IM-AWARE (1-800-462-9273)

Komen announces the formation of a Native American Nation Advisory Council acting to help improve access to breast health and services information.

National Asian Women's Health Organization (NAWHO)

www.nawho.org

415-773-2838

The site explains the organization's program, Communicating Across Boundaries: The Asian American Woman's Breast and Cervical Cancer Program, and offers a free download on related cultural competency training.

National Breast Cancer Coalition

www.natlbcc.org

1-202-296-7477

A grassroots advocacy movement of more than 300 member organizations and thousands of individuals working through a National Action Network, dedicated to the eradication of breast cancer through action, policy and advocacy.

Y-ME National Breast Cancer Organization

www.y-me.org

1-800-221-2141 (24 Hour Hotline-English)/1-800-986-9505 (24 Hour Hotline-Spanish)

Provides support and counseling through a 24-hour hotline. Trained volunteers, all of whom have had breast cancer, are matched by background and experience to callers whenever possible. Referrals for major cancer treatment centers available. Publication materials are available in English, Spanish, Chinese, Hindi, Korean, Russian and Vietnamese.

The Young Survival Coalition

www.youngsurvival.org

1-212-206-6610

An advocacy and awareness organization for young women who are diagnosed with breast cancer. The group offers support, information and education.

Breast Reconstruction

American Cancer Society

Breast Reconstruction after Mastectomy

www.cancer.org (in search box on home page type in “breast reconstruction”)

A thorough explanation of reconstruction options and goals for the mastectomy patient.

Breast Implants

Food and Drug Administration Breast Implant Information

www.fda.gov/cdrh/breastimplants/indexbip.html

Call 1-888-463-6332

Information on choosing an implant, the associated risks, FDA regulations, and manufacturers of implants.

Cancer Treatment Database

www.cancer.gov

The National Cancer Institute maintains a cancer treatment database providing prognostic, stage and treatment information on more than 1,000 protocol (treatment) summaries.

National Comprehensive Cancer Network: Breast Cancer Treatment Guidelines for Patients

www.nccn.org

Decision trees included in this site aid patients in choosing treatment and follow-up options. Also available in Spanish.

Children

Kids Konnected

www.kidskonnected.org

1-800-899-2866

Kids Konnected is a non-profit organization that provides for the needs of the children of cancer patients. They offer a kid-friendly and informative Web site, a 24-hour hotline, leadership training, support groups, online forums, a teddy bear outreach program, and other support tools for children and families.

Clinical Aspects

Cancer.gov: Breast Cancer Clinical Trials

www.cancer.gov/clinicaltrials/

Information on choosing and participating in clinical trials, results of recent trials, and resources for finding a trial.

Inflammatory Breast Cancer (IBC) Research Foundation

www.ibcresearch.org

General information, research, articles, news articles, discussion and commentary on inflammatory breast cancer.

Hair Care and Make-Up

Look Good, Feel Better

www.lookgoodfeelbetter.org

1-800-395-LOOK (5665)

A program of the American Cancer Society that offers free class instructions on makeup application and hair care during cancer treatment. Information is available English and Spanish.

Male Breast Cancer

ACS: Male Breast Cancer Resource Center

www.cancer.org (in search box on home page type in “male breast cancer”)

Information and other Web sites on male breast cancer.

Pregnancy and Breast Cancer

Fertile Hope

www.fertilehope.org

888-994-HOPE

Fertile Hope is a national non-profit organization dedicated to providing reproductive information, support and hope to cancer patients whose medical treatments present the risk of infertility.

Pregnant With Cancer Network

www.pregnantwithcancer.org

1-800-743-4471

Connects pregnant women diagnosed with cancer to women who have lived through the experience.

Cancer.gov PDQ: Breast Cancer and Pregnancy

<http://www.cancer.gov> (in search box on home page type in “breast cancer and pregnancy”)

Information on treatment and other considerations for the pregnant breast cancer patient.

Pregnancy After Breast Cancer

www.moffitt.usf.edu (in search box on home page type in “pregnancy”)

Full-text clinical article discussing studies and historical data on pregnancy after breast cancer. Includes bibliography.

Prosthesis

Check in the yellow pages of your telephone book. Call your local unit of the American Cancer Society. Ask your surgeon or nurse for references.

Y-ME

www.y-me.org

800-221-2141(English)/800-986-9505 (Spanish)

This organization maintains a prosthesis and wig bank for women who cannot afford to purchase one. If the appropriate size of prosthesis or color of wig is available, it will be mailed anywhere in the country to you for a small shipping fee.

Support Groups

Call your local **American Cancer Society** office or National office at 800-ACS-2345.

Y-ME at 800-221-2141.

Survivorship Magazines

Coping with Cancer

www.copingmag.com

615-790-2400

Coping With Cancer is America's consumer magazine for people whose lives have been touched by cancer. This magazine provides knowledge, hope, and inspiration to cancer patients, survivors and their families. For a subscription go online or call.

CURE

www.curetoday.com

800-210-CURE (2873)

CURE is a magazine for cancer patients and their families, providing information on recent advancements in diagnosis, treatment and prevention of cancer. Healthcare providers and patients can go online to sign up for a free subscription.

MAMM

www.mamm.com

646-365-1350

MAMM is a magazine devoted to women diagnosed with breast and reproductive cancer. It helps women to understand more about their diagnosis, improve the quality of their life and assess current treatments as well as new therapies on the horizon. For a subscription go online or call.

Survivorship Resources

Imaginis

www.imaginis.com

Excellent web site for professionals and patients providing education and the latest news in breast cancer. Sign up for the online newsletter to receive concise summaries on the latest news and information on breast cancer.

Living Beyond Breast Cancer (LBBC)

www.lbbc.org

Phone: 610-645-4567 Fax: 610-645-4573

10 East Athens Ave. Suite 204

Ardmore, PA 19903

LBBC is a non-profit educational organization committed to empowering all women affected by breast cancer to live as long as possible with the best quality of life. Programs include semi-annual large scale educational conferences, a quarterly newsletter, educational teleconferencing programs, outreach to medically underserved women, and a consumer focused educational booklet.

Living With It
www.livingwithit.com

“Living with it” is a program created for women with breast cancer. It is a web and mail based program providing patients with survivor stories, diet and exercise tips, medical information, treatment organizers, and other valuable information. Information is available in English and Spanish. Patients can go online to sign up.

National Coalition for Cancer Survivorship (NCCS)
www.canceradvocacy.org
1-877-NCCS-YES (877-622-7937)

This is a survivor-led cancer advocacy organization supplying survivorship information and support. Cancer Survival Toolbox, a CD of Survival Skills, provided free (available in English, Spanish and Chinese).

Patient Advocate Foundation
(Employment Issues)
www.patientadvocate.org
800-532-5274

The Patient Advocate Foundation is a national non-profit organization that serves as an active liaison between the patient and her insurer, employer and/or debt crisis matters relative to their diagnosis through case managers, doctors and attorneys. Patient Advocate Foundation seeks to safeguard patients through effective mediation assuring access to care, maintenance of employment and preservation of their financial stability.

Reach To Recovery
National ACS Office 800-ACS-2345

A program of the American Cancer Society, offers visits from volunteers. Call your local ACS unit for an appointment. Volunteers will share helpful information for recovery, including range of motion exercises for the surgical arm.

The Wellness Community
www.thewellnesscommunity.org
Phone: 202-659-9709 Fax: 202-659-9301
919 18th Street NW Suite 54
Washington, DC 20006

The Wellness Community is a national non-profit organization dedicated to providing free emotional support, education and hope for people with cancer. There are 20 facilities nationwide. The web offers online support groups and an online newsletter for cancer patients.



ST. VINCENT'S BREAST HEALTH CENTER

St. Vincent's HealthCare

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Jacksonville, Florida 32204

Sexuality After Breast Cancer

Breast cancer has changed many things in your life. One of the potential changes may be your sexual functioning. Breast cancer and its treatment may alter the way a woman thinks and feels about her body, threatening her sense of being female. For many women, breasts play an important part in their femininity. In addition, for women who take chemotherapy, the loss of hair, while temporary, also greatly affects the way they feel about themselves. Therefore, many breast cancer patients admit that they have had concerns about their sexual attractiveness to their partner. This is a normal response. However, it is important to incorporate these bodily changes into a healthy perspective; to evaluate your present status and take steps to restore any area that may not have returned to normal.

Women have reported one of the most difficult aspects of the breast cancer experience was viewing with their mate the incisional area where the breast was changed or removed. But it is an essential part of the recovery process. While it may be something which you want to avoid or delay, it is helpful for the relationship to view the incisional area together soon after your surgery. The earlier this is done, the smoother the transition to recovery. When your mate is invited to be a part of this sensitive area of your loss, the doors are opened for his supportive and positive response to your needs. Your mate will want to share your pain and loss.

If you withdraw or prohibit your mate from seeing the incision and altered breast area, you are building a wall that may affect the sexual relationship. Certainly, the breast adds pleasure to the sexual relationship but is not essential for that pleasure to occur. It is not the loss of the breast that changes the relationship as much as it is the way you and your mate accept the loss. Facing the loss together early and openly communicating your fears that breast changes would affect the sexual relationship is the first step in successfully adjusting. Surgery has not changed you. You are still the same loving person your mate selected; **surgery does not change that fact.** Many couples say that surgery brought them closer together and the sexual relationship was enhanced because of the realization of how valuable they were to each other.

During surgery or treatment, sexual functioning may also be affected by fatigue or side effects from treatment. These are normal interruptions that are transitory and, when over, should not impair your former state of sexuality.

Ask yourself the following questions:

- Have I allowed my mate to see my scar?
- Have I talked openly about my fear of our relationship changing?
- Have I expressed my desire that our sexual functioning not be affected?

- Am I honest when I am physically fatigued and would like to be held and cuddled without intercourse?
- Have I explained that when I do not feel up to the sexual act, I am not rejecting my mate, it is simply that I need time to adjust or it's a side effect (fatigue, etc.) of my treatment?
- Have I planned a special time and saved energy for the sexual relationship to be resumed?
- If I am having problems such as a dry vagina or intercourse that has become painful because of side effects of treatment, have I talked with my physician?
- Have I restored my body image with a well-fitting prosthesis or completed or planned reconstructive surgery?
- If interested in reconstructive surgery, have I talked to a physician and received the information needed to make a decision?
- Have I discussed this decision thoroughly with my mate?
- If having problems adjusting to my body image or sexuality, have I asked to speak to a counselor?
- Have I asked my treatment team or called the American Cancer Society for information on sexuality after cancer?
- Have I treated myself to a gift to enhance my feeling of femininity after surgery—perfume, clothing, new haircut, etc.?

It is common for breast cancer patients to make adjustments in the area of sexual functioning. Fortunately, there are many things you can do and additional resources to assist you in returning to your normal sexual role. Do not allow unwanted changes to happen without reaching out to a healthcare provider, nurse, or support group for information and, if needed, help through counseling. The earlier you address these issues, the easier they are to solve.



ST. VINCENT'S BREAST HEALTH CENTER

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Sexuality and the Single Woman

Obviously, breast cancer surgical treatment (lumpectomy or mastectomy) changes a woman's body image. Chemotherapy can also alter a woman's body image beyond the loss of hair. The drugs may cause early menopausal symptoms in pre-menopausal women (generally before the age of 52). Treatments for breast cancer often cause women to doubt their sexual attractiveness. This is common for both women who are in committed relationships as well as those not in relationships. However, for single women who desire an intimate sexual partner, a breast cancer diagnosis can produce even more anxiety, doubts, and fears of attracting and keeping a partner.

It is tempting for some to want to take a vow of celibacy. How can a single woman work through these issues and feel confident to seek a relationship after breast cancer? There are no magical or easy solutions. However, it is possible to regain or find the same attractive person you were before your diagnosis.

Accepting Yourself

The first step is to accept the illness as a part of your life. Some women feel that their diagnosis and treatment left them "damaged" or not a whole person. It is essential to remind yourself that you are not alone. Approximately one-third of the people in this country will have a cancer diagnosis in their lifetime. Fortunately, in many cases cancer can be successfully treated. In fact, there are actually other diseases that are much more devastating and potentially incapacitating.

The old saying, "I complained because I had no shoes until I met a man who had no feet," is a strong guiding principle. Ask yourself, if you had to choose among other potentially debilitating illnesses or disasters, would you choose your cancer?

Breast cancer does not define who you are as a person. You are basically the same person you were before your diagnosis. The only difference is that you have been forced to face some of the hardest issues in life - dealing with a life threatening illness, dealing with surgery, dealing with the trauma of chemotherapy - and as a result you have become a stronger person. The same abilities and qualities that enabled you to successfully manage the breast cancer experience can nurture a lasting relationship.

Everyone struggles with issues that attack their self-confidence. Some are physical while others may be psychological. Would you reject a man simply because he was bald (and his hair would never grow back)? Or would you reject a new friend or co-worker when you discovered he had a previous diagnosis of prostate cancer? You probably would not. Remind yourself that others most likely feel the same about you.

Your body changes are probably more difficult and uncomfortable for you than for others. They are looking at the real you - your personality and character, your ability to love and sustain a relationship. You must learn to accept your new body image and understand that your cancer has, in fact, improved the "real" you.

Finding a Partner

Like countless other single women, to find a suitable partner you must put yourself into circulation to meet someone. Let your friends know that you are ready to go on with your life and would be interested in meeting someone. Join clubs, organizations, support groups, religious organizations, or start a hobby with others who have similar interests. Dating is no different after cancer than it was before your diagnosis. In the past, you probably met many people, dated a few, and were not attracted to some after getting to know them. Expect the same and don't blame your cancer for your inability to meet someone immediately.

Telling About Your Diagnosis

When you meet someone, it is important to spend time developing the relationship as friends before you blurt out, "I had breast cancer." Some women feel they are not being honest if they don't tell right away. Your intent, however, is not to hide your illness. Like many things in life, we only confide personal information with those we feel most comfortable with. Once the relationship has developed into a friendship, then it is time to talk about your breast cancer. Timing, however, is a delicate issue. You don't want to wait too long, but you don't necessarily tell on the first date.

When you decide to reveal your illness, the description of your experience should reflect your self-confidence and acceptance of your breast cancer. You don't want to appear as a victim nor do you want pity. Plan time for your discussion when you can both talk in privacy and not be interrupted. You may be more comfortable meeting in a public place such as a restaurant or you may prefer a more private setting.

Begin the conversation with something like, "I want to share something very personal with you that I have not talked about before. I had

breast cancer (years ago) which required (type of surgery) and (type of treatment). The diagnosis was very hard at the time, but now I feel very lucky to have had my cancer diagnosed and treated. At this time, I am (condition: cancer free, or dealing with recurrence). I feel I have become a stronger person by having to deal with a lot of hard issues. I want to be very honest with you before this relationship goes any further. I will be happy to answer any questions you may have."

You can never predict how someone will respond. Obviously you want a partner who can accept you and your breast cancer. A person who cannot do this is the last person you would want as a life partner. If the relationship does not work, don't blame your previous cancer illness. As in dating relationships before your cancer, many do not work out. Dating after cancer is the same. This is the nature of dating relationships—most don't last very long, others develop to a point and then dissolve and then there are those rare ones where things move to a point of emotional and physical intimacy. Being rejected or rejecting someone is not unique to cancer survivors. All people searching for a partner risk rejection.

As a single woman who has survived breast cancer, you need to consider how to handle a dating relationship. Rehearse what and how you will tell your new friend about your diagnosis. It may be helpful to talk to your physician, nurse educator or to a counselor. Many counselors are trained to assist women in dealing with their doubts and fears about future intimacy. You may also want to ask your healthcare providers for names of other breast cancer survivors who would be willing to talk with you about how they developed relationships and intimacy after their cancer diagnosis. Support groups are another good source for reliable information. Women, under

the direction of a trained facilitator, often discuss sexuality issues in support groups. Some Internet sites offer responsible relationship information for single women who have had cancer.

Any dating requires stamina, persistence, and courage. Dating after breast cancer is not much different. Use those qualities and strengths you were forced to depend upon during your breast cancer experience to make dating fun and rewarding. With a renewed sense of self-confidence and an acknowledgement of what's important to you in a partner, you'll find what you truly want and deserve.



GENETIC TESTING AND HIGH RISK

GENETIC TESTING
AND HIGH RISK



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Breast Cancer Genetic Testing

In the mid 1990s, scientists discovered two genes that, when mutated (altered or changed), greatly increase the risk of a person developing breast and/or ovarian cancer. The genes are known as BRCA1 and BRCA2 (BR=breast; CA=cancer). Both genes serve a protective function against cancer and are present in women and men. When a mutation in either gene exists, there is a high risk of developing cancer. Although breast and ovarian cancers are the most common, other cancers may also result from a mutation in either of the genes.

Testing

Testing for BRCA mutations that increase breast cancer risk has received much attention in the media. This attention has contributed to the incorrect impression that the test indicates breast cancer. In truth, genetic (DNA) testing only indicates that an alteration (change) in a BRCA gene exists. It does not prove the "carrier" will develop cancer, only that the carrier is at much higher risk for breast and ovarian cancers. The test is only appropriate for a small number of women (and men) and not the general public. It is estimated that currently known mutations cause approximately 7-10% of diagnosed breast and ovarian cancers. A healthcare professional with genetic experience is the best person to help determine whether or not genetic testing for BRCA mutations is appropriate for you.

Hereditary Breast Cancer

Everyone is born with two copies of approximately 25,000 genes. One copy

comes from your mother and one copy comes from your father. With regard to breast and ovarian cancer, when a woman inherits a mutated BRCA 1 or BRCA 2 gene from either parent, her risk for developing breast and ovarian cancer is increased. It was once believed that risk for hereditary breast and ovarian cancer came only from the mother's side of the family. We now know that people are just as likely to inherit BRCA mutations from their father's family.

A man or a woman may inherit and thus "carry" a BRCA mutation without ever developing cancer. This may cause the disease to look as though it has skipped a generation. In smaller families or families with more men, it may be harder to "see" the hereditary cancer risk because there are fewer women to develop cancer. It was once thought that the number of relatives with cancer was the highest predictor of a hereditary syndrome. We now know that other important factors, such as young age at diagnosis, a history of more than one cancer in the same person or male breast cancer in the family, are also strong clues that may indicate the presence of a mutation existing in a family.

Mutations in the BRCA genes can be passed equally to the sons and daughters of carriers. This places them at increased risk for developing breast, ovarian and, to a much lesser extent, prostate, colon, and pancreatic cancer. Many people assume that, if they carry a mutation, their children will inherit it. In actuality, each child has a 50% risk of

inheriting the mutation from a carrier parent. It is important to look at both sides of the family to evaluate the likelihood that a mutation may be present. A genetics professional uses a tool called a three-generation pedigree to record the family history. This helps determine the pattern of cancers in the family and whether genetic testing may be appropriate.

Certain ethnic groups have a greater likelihood of carrying a BRCA mutation. For instance, 1 in 40 Jewish persons of Northern and Central European descent (Ashkenazi) may be carriers of a mutation. Specific testing of three common mutations in this population can be ordered at a lower cost than the more extensive test generally needed for non-Ashkenazi Jews.

What are the Risks?

Women who inherit a BRCA mutation have a 56-87% risk of developing breast cancer by age 70. They also have a 27-44% risk of developing ovarian cancer. Women also face increased risk of developing a second breast cancer if they carry a mutation. These risks vary depending on which gene has the mutation. Increased risks for other cancers exist but are much lower than the risk of developing breast or ovarian cancer.

Testing for Hereditary Breast and Ovarian Cancer Syndrome

It is important that any person considering genetic testing receive counseling. After determining the likelihood of a mutation within the family, a genetics professional will discuss the advantages, disadvantages and limitations of genetic testing. In a family that appears to be at increased risk for hereditary cancer, although it may not always be possible, the ideal person to test is the youngest person who has had breast or ovarian cancer.

Following counseling, you will decide whether you want to pursue testing. This decision is totally up to you. If you should decide to have the test, a small sample of blood will be drawn and sent to a specific laboratory to determine the presence of a BRCA mutation. Whether you decide to test or not, your counselor will review cancer screening recommendations and possible treatment options based on your family history.

Genetic Testing May be Recommended for:

- A woman with breast cancer or ovarian cancer before the age of 50
- A male with breast cancer
- A woman of any age with breast and ovarian cancer
- A woman of any age with breast and/or ovarian cancer who has one first or second degree* blood relative younger than 50 with breast and/or ovarian cancer
- A woman of any age with breast and/or ovarian cancer who has two or more first or second degree blood relatives (on one side of the family) with breast or ovarian cancer
- A person with bilateral (both sides) breast cancer or multiple primary sites of cancer at younger than average ages
- A person with a blood relative who is documented as being a BRCA mutation carrier
- A woman who has not had cancer but has a **strong** family history

***first degree relative:** mother, father, sister, brother, daughter, son

***second degree relative:** aunt, uncle, grandparents, grandchildren, niece, nephew, half-brother or sister

Potential Benefits of Genetic Testing:

A positive result identifies you as a carrier of a genetic mutation. Due to the increased risk of developing cancer, it would be recommended that you be carefully monitored so that, if cancer does develop, it would be likely to be diagnosed at an early stage when treatments are more successful. Knowing that you carry a mutation could provide the motivation to change potentially harmful lifestyle choices to improve your general health (i.e., smoking, lack of exercise, or alcohol intake). Knowing you have a mutation can help you and your healthcare provider plan cancer surveillance and risk-reducing options, such as surgery, clinical trials or medications to reduce the risk of developing cancer. Other family members may choose to be tested or to pursue increased surveillance based on their awareness of a mutation.

A negative test, when there is a known mutation in the family, means the person is at normal risk of developing cancer. This knowledge can relieve anxiety and prevent unnecessary and expensive tests and procedures. Strength of the family history is important when interpreting a negative test in a family without a known mutation

Potential Disadvantages of Genetic Testing:

A positive test may cause you to experience anxiety stemming from knowledge that you are at "high risk" for developing cancer. Family members may also react unpredictably to positive test results because their own risk of cancer may be increased.

Deciding Whether to Test:

The decision to have genetic testing should be made in partnership with a healthcare professional skilled in genetic counseling who will:

- Evaluate your risk
- Determine whether you meet usual criteria for testing
- Answer your questions about the process
- Assist you with financial questions
- Obtain informed consent for testing
- Develop a surveillance/treatment plan whether you test or not
- Protect your confidentiality
- Refer you for psychological counseling as needed

Your counselor can also provide additional resources on BRCA genes/mutations and genetic testing.



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High Risk Recommended Reading List

Assess Your True Risk of Breast Cancer

Patricia T. Kelley
Henry Holt and Company: New York, 2000
ISBN: 0805064680

Cancer and Genetics: Answering Your Patients' Questions

American Cancer Society
PRR Inc.: New York, 1997
ISBN: 096418236X

Clinical Cancer Genetics: Risk Counseling and Management

Kenneth Offit
Wiley-Liss: New York, 1998
ISBN: 0471146552

Curing Cancer: The Story of Men and Women Unlocking the Secrets of our Deadliest Illness

Michael Waldholz
Simon & Schuster: New York
ISBN: 0684848023

One Renegade Cell: How Cancer Begins

Robert A. Weinberg
Basic Books: New York, 1998
ISBN: 0465072763



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I'm High Risk — What Do I Do?

If you have a family history of breast cancer on your mother's or father's side, you are considered "high risk" for the disease. "High risk" is a term that terrorizes thousands of women each year after a family member's diagnosis of breast cancer. Thoughts that "this can happen to me, too" can cloud the future and fill you with fear. Often, this fear may be so overwhelming that some women avoid taking necessary precautionary measures. Others become super-zealous and obsessive in checking their breasts. What is a normal, healthy and balanced approach to breast care if you are considered high risk?

In some ways, being considered high risk may be a blessing, one that could save your life. You may wonder how. Because of a family member's breast cancer, you and your healthcare provider will most probably watch your breast health more carefully. If cancer should occur, close monitoring should find it in an early stage, when it is most treatable. Women with no history may lack the motivation to be diligent and may ignore guidelines for early detection and screening, resulting in late detection.

Don't be frightened of the term "high risk." Being at high risk does not mean that you will get cancer. It is, however, like a yellow light, a warning to be cautious. A family history is no reason for panic; rather, it should be motivation to learn steps for protection and early detection.

Hereditary Breast Cancer

Based on current information, approximately 7-10 percent of breast cancer patients have a family history that includes a mutated gene that is inherited from a mother or a father. Hereditary breast cancer is caused by one of two identified genes, BRCA1 or BRCA2, (BR=breast; CA=cancer). These genes can be identified by having a vial of blood drawn and sent to a specialized lab. If your cancer history fits the family or personal cancer history criteria, after consultation with a professional, the test is available to determine if you carry a mutated BRCA gene.

The typical characteristics of breast cancer caused by a hereditary gene mutation are included in the following list. If you find that your family history has any of these characteristics, call your medical center and ask who you can speak with to discuss your risk.

Family cancer history-reasons for seeking out a healthcare professional to talk about your risk:

- A mother or sister diagnosed with breast cancer or ovarian cancer before the age of 50
- A male in your family with breast cancer
- A family member diagnosed with both breast and ovarian cancer
- A family member of any age with breast and/or ovarian cancer who also has one first or second degree* blood relative younger than 50 with breast and/or ovarian cancer

- A family member of any age with breast and/or ovarian cancer who has two or more first or second degree blood relatives (on one side of the family) with breast or ovarian cancer
- A family member with bilateral breast cancer (cancer in both breasts) or multiple primary sites of cancer diagnosed at younger than average ages
- A family member who has had genetic testing and is confirmed as being a BRCA mutation carrier

If you find that your family history includes one or more of these characteristics, ask to speak to a professional counselor about your own risk. The counselor can determine if your history qualifies you for BRCA testing. The testing involves simply having blood drawn; a single vial of blood is collected and sent to a special laboratory for testing. The testing process takes approximately four weeks. The result is returned to your counselor, and an appointment is made to tell you the result. If genetic testing for the mutated gene is negative, your risk is the same as the normal population's. If the test finds that you are a "carrier" of the family mutation, your physician will discuss options for increased surveillance, drugs for prevention, or prophylactic surgery, all with lifestyle changes discussed below.

Taking Charge of Your Breast Health

- Find a healthcare provider who understands your risk and takes a special interest in early detection for breast cancer. Look for a healthcare provider whom you feel comfortable talking with about your breasts and who supports you in learning how to monitor your breasts. After reviewing your family and personal cancer history, the provider will determine if you qualify for BRCA testing.
- Provide your healthcare provider with the name or type of breast cancer your

relative had (There are approximately 15 different major types of breast cancer with variations in how they are found and treated). Breast cancer that is hereditary may show up in the same manner as the relative's cancer; therefore, knowing the type of cancer is helpful for early detection. For example, if your sister's cancer did not show up on a mammogram, your healthcare provider will not depend on a mammogram alone to detect potential problems.

- Learn how to perform a breast self-exam from a qualified instructor.
- Perform a breast self-exam during the same time of your monthly cycle. Allow time to perform a thorough exam. Do not examine your breasts more than once a month. This is not necessary. Because the breasts are changing during the month, random checking could cause confusion about what is normal for your breasts.
- Comply with mammography screening guidelines for high-risk women. Although guidelines vary, most experts agree that if there is a family history, yearly mammography with a baseline at 35 years is important. If the family history includes a pre-menopausal breast cancer, mammography starting ten years earlier than when the relative's breast cancer occurred is often a recommended guideline.

- Change those lifestyle factors that have been implicated as risk factors for many diseases. The following changes in lifestyle have proven to promote better general health and decrease the risk of other diseases. Your goal is to improve and maintain your general health. No one has proven specifically what causes or prevents breast cancer, but we do know what creates good general health.

- Avoid high fat diets, especially animal fats. A low-fat, high-fiber diet is a wise choice. Replace sugary, fatty foods with a diet of fresh fruit, vegetables and whole grains.
- Monitor alcohol consumption. Alcohol consumption has been proven to promote breast cancer and other diseases. Drink in moderation, or better yet, not at all. Remember, beer and wine are alcoholic beverages.
- Avoid carcinogens (proven cancer-causing agents) that have been identified in many food additives and chemicals in the environment.
- Stay active. Exercise reduces stress. Stress has been shown to have a direct effect on the immune system by lowering its ability to fight disease. Start a walking program or join an exercise group.

After a relative's diagnosis of breast cancer, it is time to face the fear of being high risk and plan to take action. Talk to a healthcare profession if your family history has characteristics of hereditary cancer. Lifestyle changes to maintain a healthy body, along with early detection and screening, should assure that, if cancer occurs, it will be found early, when it can be treated most successfully.

Remember, "high risk" does not mean you will have cancer. It is only a yellow light, a caution light that allows you time to make wise decisions.



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Lifestyle Modifications For High Risk Women

Being "high risk" for breast cancer is not an absolute diagnosis, but rather a caution to carefully monitor your health. Women who monitor their lifestyles and comply with recommended screening guidelines are using the most effective tools known in the battle against breast cancer. Early detection provides a woman her best chance against breast cancer.

Your healthcare provider will recommend a screening program consisting of monthly breast self-exams, clinical exams by a healthcare professional and mammography. These three screening methods are very effective for early detection.

Lifestyle changes that could reduce the risk for cancer should also be a part of your program. Current research has identified areas in which certain health choices could reduce the risk for many cancers.

Areas that may affect breast cancer are:

- **Age of first pregnancy:** Data shows that women who deliver their first full-term baby before age 30 are less likely to develop breast cancer and women who give birth are less likely to develop ovarian cancer.
- **Body weight:** Obesity has been shown to increase the risk for post-menopausal breast and ovarian cancer. Individuals who are 40 percent or more above normal weight should consider the implications of their weight on their risk status. A diet that is low-fat, high-fiber, and
- calorie-restricted for gradual weight loss should be started. Do not attempt "crash" or fad diets that cause you to lose weight quickly; these can be unhealthy. The diet that reduces cancer risks is rich in green leafy vegetables, fruits, whole grains and one that is low in meats, sugars and processed foods. Some studies have indicated soy products may be beneficial. Ask your healthcare provider which, if any, dietary supplements may be beneficial for you.
- **Exercise:** Studies show physical activity may decrease a woman's risk for breast cancer risks. Moderate exercise (30 minutes daily for a minimum of five days a week) increases the immune system's ability to protect the body against unhealthy cellular activity. However, strenuous activity may not be helpful because of the stress it places on the body. A complete exercise program includes aerobics (walking), muscle building and stretching or flexibility exercises. Talk with your healthcare provider for suggestions and information on a healthy exercise program.
- **Alcohol:** Some studies suggest that there is a link between alcohol consumption and the development of breast cancer. Regular use at a younger age carries the highest defined risk. Occasional, moderate use has not been shown to have a great impact. High-risk women should carefully evaluate alcohol usage and either keep consumption to an occasional drink or abstain.

- **Smoking:** Smoking has proven to decrease the body's natural immune system surveillance, increasing the risk for many types of cancers. The relationship between smoking and breast cancer is not clearly defined as a direct cause, but there is proof that smoking increases a woman's risk of dying from breast cancer by 25 percent. High-risk women are advised to stop or severely limit tobacco use to protect their general health.

You can't change your genetic makeup or your past medical history. However, there are areas that can be changed that impact your general health as well as your breast health. Consider your lifestyle and make the changes necessary to protect your future.



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After Your Mother's or Sister's Breast Cancer

Your mother's or sister's diagnosis of breast cancer changes many things in the family, particularly the fact that you are now considered at high risk for the disease. "High risk" is a term that terrorizes thousands of women each year after a family diagnosis of breast cancer. Thoughts that "this can happen to me, too" cloud the future. Often, this fear is so overwhelming that some women avoid taking necessary precautionary measures while others become super-zealous and obsessive in checking their breasts. What is a normal, healthy balance for those who are considered high risk?

In some ways, being considered high risk may be a blessing, one that could save a woman's life. Because of a mother's or sister's breast cancer, women and their physicians will watch their breasts and health more carefully. A family history may also alert your physician to look closely at your cancer history over several generations to see if your mother's or father's family may carry a gene mutation (change) that may be the cause of cancer in your family. Women with no history may lack the motivation to be diligent, and many ignore guidelines for early detection and screening, resulting in late detection. Don't be frightened of the term "high risk."

"High risk" does not mean cancer is a certain part of your future. It is more like a yellow light, a warning to be vigilant. A family history is no reason for panic. Rather, it is a motivation to learn steps for protection and early detection. Based on current information, only 7-10 percent of diagnosed breast cancers have a family history connection. Women whose mother or sister was diagnosed post-menopausally have significantly less risk than those whose mother or sister was diagnosed pre-menopausally.

If a mother's or sister's breast cancer is diagnosed post-menopausally, first degree relatives are at two to three times greater risk for having breast cancer than a woman with no family history. If the cancer occurred before menopause or if cancer was found in both breasts, the risk increases. Breast cancer that occurs before menopause or occurs in both breasts seems to have a higher incidence of genetic inheritance from a mutated gene from either a mother or father. It is important to know the type of cancer and the age of diagnosis of a mother or sister along with other cancer history in the same bloodline and provide this information to your healthcare provider.

Family cancer history reasons for seeking out a healthcare professional to talk about your risk of hereditary cancer:

- A mother or sister diagnosed with breast cancer or ovarian cancer before age 50
- A male in your family with breast cancer
- A family member diagnosed with both breast and ovarian cancer
- A family member of any age with breast and/or ovarian cancer who also has one first or second degree* blood relative younger than 50 with breast and/or ovarian cancer
- A family member of any age with breast and/or ovarian cancer who has two or more first or second degree blood relatives (on one side of the family) with breast or ovarian cancer
- A family member with bilateral breast cancer (cancer in both breasts) or multiple primary sites of cancer diagnosed at younger than average ages
- A family member who has had genetic testing and is confirmed as being a BRCA mutation carrier

***first degree relative:** mother, father, sister, brother, daughter, son

***second degree relative:** aunt, uncle, grandparents, grandchildren, niece, nephew, half-brother or sister

It is important to find a healthcare provider who understands your risk and takes a special interest in early detection for breast cancer. Often, a mother's or sister's physician is a good choice because he or she is well aware of the family history. Call your local hospital and ask if they have anyone who specializes in hereditary breast cancer assessment.

Other components that should be a part of a healthy lifestyle include:

- Learn breast self-exam. Accurate and thorough instructions by a qualified physician or other healthcare provider are

of primary importance to help a woman monitor her own breasts. Make an appointment with a physician or other healthcare provider for breast self-exam instructions. You may also contact a hospital, breast center, or the American Cancer Society for further information. Many hospitals, cancer centers, or mammography centers offer group or individual classes to the community.

- Practice monthly breast self-exams at the end of the menstrual period, allowing adequate time for a careful exam. If you no longer have a menstrual period for biological or surgical (hysterectomy) reasons, check your breasts on the same day of each month. After you have completed a thorough exam, do not check your breasts again during the month. The breasts are constantly changing in texture during the monthly cycle, and random checking may cause confusion and unnecessary concern.
- Have a clinical exam by a physician or other healthcare provider. A yearly exam is recommended if your relative was diagnosed post-menopausally. Two exams yearly are often recommended if the relative's breast cancer occurred before menopause. Ask your healthcare provider.
- Have regular mammograms. Guidelines for high-risk women vary among health care providers. Most agree that if a family history exists, women should have a yearly mammogram with a baseline (first mammogram) at age 35. If the family history included a pre-menopausal breast cancer, it is generally recommended that mammography start 10 years earlier than the age of the relative when diagnosed with breast cancer.
- Monitor the lifestyle factors that have been identified as promoters for many diseases. The precise cause of breast cancer has not been identified, but we do know lifestyle changes that maintain better general health.

- Choose a nutritious diet. A low-fat, high-fiber diet consisting of fruits, vegetables, and whole grains is recommended. Avoid diets high in fats, especially animal fats (saturated fats). Select high protein foods that are low in fat and avoid foods high in sugar. A low-fat diet helps with weight control and increases energy and a sense of well-being. Avoid any diet that severely restricts any one food group.
- Watch your weight. Overweight women have a higher incidence of having breast cancer after menopause.
- Limit alcohol. Alcohol consumption has been proven to increase women's risk for breast and other cancers. Drink in moderation, or better yet, not at all. Remember, beer and wine are also alcoholic beverages.
- Don't smoke. Avoid cigarettes and other carcinogens (proven cancer-causing agents) that have been identified with environmental chemicals and some food additives.
- Stay active. Exercise has been proven to reduce stress. Stress has been shown to have a direct effect on the immune system by lowering its ability to fight disease. Start a walking program or join an exercise group.

Find someone to talk to about your fears of being at higher risk for breast cancer. Counselors with a background in genetics are helpful in planning how to deal with your risk emotionally and physically. Support groups are available in some areas for women with family members with breast cancer. Support groups foster positive steps of action against misinformation and help women evaluate the latest information on the disease.

After a mother's or sister's breast cancer, face the fear of being high risk and plan to take action. Change your worry into action. Review the list above for cancer that may be linked to an inherited family gene mutation and ask to talk to a professional about your family history. Lifestyle changes, along with early detection and screening, should assure that if cancer occurs, it will be found early, when it can be treated most successfully. If you are 35 or older and have not had a mammogram or a breast exam by a healthcare provider, call today to schedule both. This is the best protection we have at this time against breast cancer-early detection.



Positive BRCA1 and BRCA2 Gene Mutations

Negative Test Result

If you receive a negative diagnosis from your test for hereditary breast cancer for the BRCA1 and BRCA2 gene mutations, your present risk for breast cancer is based on your family and personal health histories. Most often this puts most women back to the normal population risk and screening guidelines recommended by the American Cancer Society. However, some women because of their family or personal history will be negative for the gene but still be considered high risk and have increased surveillance for breast cancer recommended. Your healthcare team will discuss your present estimated risk and make recommendations for future screening.

Positive Test Result

If the test results were positive for BRCA1 or BRCA2 gene mutations, your healthcare provider will discuss opportunities and options to prevent or detect the cancers early. Authorities in cancer treatment have made recommendations to reduce the risk of the cancers that include increased surveillance, chemoprevention, and surgery. A brief options overview will prepare you to discuss your future care with your healthcare team.

1. Increased Surveillance

Breasts:

- Breast self-exam: monthly starting by age 18 to 21
- Clinical breast exam: annual or semi-annual starting by age 25 to 35
- Yearly mammogram or breast MRI screening starting at age 25 or individualized based on earliest age of onset in family

- Consultation with a breast specialist provider when any change is detected

Ovaries:

- CA-125 serum tumor marker testing annually or semiannually beginning at age 25 to 35
- Transvaginal ultrasound starting between ages of 25 and 35 every 6 to 12 months
- Clinical vaginal examination starting between age of 25 and 35 every 6 to 12 months

2. Surgery

Breasts:

- Bilateral prophylactic mastectomies before age of 40 to reduce risk of breast cancer to the lowest level. (Note: breast cancer can still occur on the chest wall because only about 95% of the tissue can be removed from the chest. This also reduces the risk to the lowest level possible.)

Ovaries:

- Bilateral prophylactic (prevention) oophorectomy (removal of ovaries) between age 35 - 40 or after childbearing, to reduce risk of ovarian cancer. This reduces the risk of both breast as well as ovarian cancer. (Note: ovarian cancer can still occur on the lining of the abdominal cavity from the cells that are left after surgery. However, this reduces risk to the lowest possible level.)

3. Chemoprevention (Hormonal Therapies):

Breasts:

- Chemoprevention or hormonal therapy (SERMs) such as tamoxifen greatly reduces the risk of breast cancer in high-risk women.

Ovaries:

- Oral contraceptives greatly reduce the risk of ovarian cancer.

Men with Positive Test

- BSE training and regular monthly practice
- Clinical exam every 6 months
- Consider baseline mammogram and annual mammogram if gynecomastia or glandular density (increased size or firmness)
- Adhere to screening guidelines for prostate cancer

Men and Women Recommendations

- Advise relatives with same blood line about options of risk assessment, management and consideration of genetic testing
- Learn about signs and symptoms of cancer

Summary:

When diagnosed with a positive mutation in either the BRCA1 or BRCA2 gene, decisions will need to be made about surveillance, chemoprevention or surgical options. Each option has advantages and disadvantages to consider. These are not easy decisions. Your physicians will discuss the above options. Talking with an experienced psychological counselor will be helpful in evaluating the impact of the options on your individual lifestyle and personal goals.

Myriad Genetic Laboratories' Web site located at www.myriad.com/med/brac can provide up-to-date research on BRCA1 and BRCA2 testing and recommended surveillance.

Recommended Internet Support: High Risk Hereditary Breast Cancer

www.facingourrisk.org

Facing Our Risk of Cancer Empowered (FORCE)

www.myriad.com

Myriad Genetic Laboratories

High Risk Ovarian Cancer

www.ovarian.org

National Ovarian Cancer Coalition



COMPLEMENTARY THERAPIES



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Alternative and Complementary Therapies for Cancer

In the treatment for cancer, there are proven and unproven treatments. Treatments outside of the medical treatment team's established norm of recommendations are called alternative therapy (treatments in place of). Complementary therapy (treatments added to) may enhance the therapy recommended by your physician and others may interfere with treatment. Always discuss any form of treatment with your physician.

After a diagnosis of cancer, you will hear from many sources—friends, family, and the media—about treatments for cancer. Some of the information sounds very appealing, especially when faced with choosing between treatments that have unpleasant side effects and those that do not. It is true that chemotherapy and radiation therapy have some unpleasant side effects; however, these treatments have proven results. They have been found effective in fighting your type of cancer. The types of treatment recommended by your physicians have many years of scientific study and clinical trials supporting their effectiveness. Many of the alternative therapies have no studies proving their effectiveness. Some healthcare organizations, including hospitals, cancer clinics, and physicians, however, are engaged in clinical trials to test the effectiveness of some alternative therapies. Choosing to forgo conventional therapy and replace it with an alternative treatment calls for a critical, thorough, and wise investigation.

Before considering a non-traditional, unproved alternative therapy, ask the following questions:

- What and how much scientific evidence from clinical studies on humans has been published that explains the effectiveness of this treatment on my type of cancer?
- Are they testimonials from reputable health professionals or only anecdotal reports?
- Are the claims validated with clinical data such as x-rays or laboratory tests?
- Is the person promoting the therapy benefiting personally?
- Do the promoters claim that if the products fail, it is because of "lack of faith?"
- What will the treatment cost? Will insurance cover it?
- Can you continue your regular treatments and try the unproved at the same time?

Some complementary therapies are encouraged by physicians. Complementary therapies and activities may enhance your recovery. These may include meditation, relaxation, stress management, acupuncture, exercise such as yoga, and some diets and vitamin supplements which do not compromise your nutrition. Discuss with your physician the complementary therapies that will not interfere with your treatment and may be beneficial to you. Many healthcare organizations including hospitals and cancer centers have integrated these types of therapies in the treatment protocol in an attempt to provide a more holistic and balanced approach to treatment.



Aromatherapy

Essential oils have been used in many cultures throughout history for healing and relaxation. It is based on the belief that certain oils possess calming effects with others having stimulating and uplifting effects. Molecules in the oils are absorbed into the bloodstream either through the skin during massage, or by inhalation of the scent through the nose and lungs. The biochemical effects on the body are not fully established, but smell is known to have psychological effects.

Plant roots, flowers, leaves, stalks, and some trees are processed to extract the essential oils for aromatherapy. The plant is boiled or steamed until it vaporizes. Chemicals in the scents released by the oils are thought to act on the hypothalamus, the part of the brain that influences mood and the hormonal system. Studies on hospital patients show that massage with certain oils can relieve anxiety, for example. Some hospitals use aromatherapy to relax a patient before a potentially frightening procedure such as an MRI. Some oils also have obvious chemical effects when applied to the skin such as tea tree oil as an antiseptic.

Main Uses:

- Stress related conditions such as headaches or insomnia
- Digestive disorders
- Colds
- Pregnancy and labor

- Menstrual problems
- Relaxation and well-being

Oils and Effects:

- Calming - bergamot, chamomile, clary sage, geranium, jasmine, lavender
- Uplifting - clary sage, grapefruit, jasmine, lavender, neroli, rose, rosemary, ylang-ylang
- Stimulating - black pepper, cinnamon, eucalyptus, ginger, peppermint, pine
- Antiseptic, antibacterial and antifungal - tea tree, lavender
- Decongestant - eucalyptus, lavender, peppermint, pine

Precautions:

- Be cautious if using inhalants for asthma or are prone to nosebleeds
- Do not swallow oils unless under supervision of medical healthcare provider
- Do not apply undiluted essential oils to the skin (except lavender and tea tree)
- Keep essential oils away from open flames
- Keep out of reach from children
- Consult with a medical healthcare professional before using essential oils if you are pregnant, epileptic, or have high blood pressure



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Art Therapy

Art enables many people to express feelings that may seem too difficult or threatening to articulate verbally. Through artistic expression, many people find therapeutic relief from emotional distress. Art therapy is often available through hospitals for cancer, AIDS, and Alzheimer's patients. The technique is often used by psychiatrists and psychologists to treat mental and emotional disorders and addictions.

Sessions may be individual or in classes led by a trained art therapist. Patients do not need to have any training or be considered talented. They are encouraged to express their feelings by making images using various mediums (painting, drawing, photography, sculpting, etc). Releasing emotions through creative art is thought to be healing in itself, and the work may contain personal symbols that the patient is encouraged to interpret.

Main Uses:

- Chronic diseases
- Mental and emotional problems
- Children's emotional conditions
- Learning and communication difficulties
- Eating disorders
- Stress, including stress relief in serious conditions
- Addictions
- Bereavement
- Alzheimer's disease
- Personal development



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Biofeedback

Biofeedback machines electronically monitor pulse rate, brain waves, skin sweat, and other physical responses to teach people how to control involuntary body functions such as heart rate or skin temperature. Scientific research supports biofeedback's role in teaching people to relax muscles that relieve headaches or persistent back pain or treat urinary incontinence, for example.

Different types of biofeedback devices measure changes in body functions. With the sensors in place on your body, you are taught to recognize which signals indicate relaxation or tension. Techniques such as breathing and muscle relaxation can help achieve the desired response which might include lowered heart rate or reduced blood pressure. Mastering these techniques takes practice, and at least six half-hour sessions may be necessary with further follow-up sessions at home. Many of the therapies are reimbursed by your insurance provider.

Main Uses:

- Stress, tension, anxiety, insomnia
- Headaches, migraines
- High blood pressure
- Irritable bowel syndrome
- Asthma
- Raynaud's disease
- Incontinence



Chiropractic

Chiropractors use manual techniques to diagnose and treat disorders of the spine, joints and muscles. The body is treated as a mechanism with the spine as the key support, linking the brain to the body. Chiropractic therapy is based on the principle that the spinal cord carries nerves to the whole body. Chiropractors believe that any distortion of the spinal column will have an effect on other parts of the body. Accordingly, the spine should be properly aligned in order for the body systems to work in harmony and to enable the body's self-healing processes to function efficiently. Any strain, damage, or distortion of the spine is said to promote problems in the internal organs, glands, and blood vessels and can undermine the body's self-regulating and healing processes.

Treatment

The chiropractor will take a detailed medical history including lifestyle and may do some diagnostic testing such as x-rays. You will be maneuvered into different positions to examine the functioning of your spinal column, joints, and muscles. If you have stiff or locked joints, for example, the chiropractor would make "adjustments" by moving the joint as far as it will go (mobilization) then give a rapid, precise, measured thrust to move it slightly further. There may be an audible but painless 'click' in the joint as the pressure changes. Initial sessions last from 30 to 60 minutes, subsequent visits may be shorter. The total number of sessions depends on how the body responds to the treatment.

Main Uses:

- Spine and neck disorders
- Muscle, joint, and postural problems
- Sports and repetitive strain injuries
- Sciatica
- Headaches and migraines
- Digestive disorders
- Tinnitus
- Vertigo
- Menstrual pain
- Asthma

Precautions

Consult your healthcare provider if you have osteoporosis, inflammation, infections, tumors, circulatory problems, or a recent fracture. Chiropractors are skilled in other pain-relief methods. Avoid strenuous manipulation if you have badly slipped (prolapsed) disks. Women with bone metastasis should inform their chiropractor before a treatment.



Cancer Treatment Terminology and Information Resources

Terms associated with healthcare therapies, including **medical** or **clinical**, **investigational**, **complementary**, **integrative**, **unproven**, **alternative**, and **quackery**, are often used to describe methods of diagnosing, preventing, or treating health conditions and diseases, including cancer. As a patient, it is important to understand what the terms mean, which approaches are considered safe, and where you can find accurate information about various types of treatments.

Medical Treatments

Medical or clinical treatments are those that have been clinically tested for years following a strict set of guidelines and are found to be safe and effective. The results of such studies have been published in medical journals and peer reviewed by other doctors and/or scientists in the field. The Food and Drug Administration grants approval for the treatments or procedures to be used in mainstream medicine.

Investigational Treatments

Investigational treatments or research treatments or therapies are studied in a clinical trial. Clinical trials are research based projects that determine if a new treatment is effective and safe and, if applicable, the optimal dose for treatment. Before a drug, device, or other treatment can be widely and responsibly used to treat patients, it is studied and tested, first in laboratory setting, usually with test tubes and then in animals. If these

studies prove successful and safe, it is then tested on patients in a clinical trial. Patients are recruited to participate in a clinical trial and are monitored as to their response to the investigated therapy. A significant number of patients must participate in order to validate the results. If clinical trials prove the effectiveness of the treatment or drug, the Food and Drug Administration may approve it for regular use by healthcare providers. Only then does the treatment become part of the standard, recommended collection of proven methods used to treat or diagnose disease in human beings.

Complementary Therapies

Complementary therapies refer to supportive methods that are used to complement or add to proven medical treatments. Complementary therapies may not be done to cure disease but rather to help control symptoms and improve general well-being. Examples of some types of complementary therapies that may support medical treatment are:

- meditation
- yoga
- aromatherapy
- art and music therapy
- biofeedback
- massage therapy
- prayer
- spiritual practices
- journaling
- t'ai chi
- exercise
- nutrition
- counseling and psychotherapy
- healing energy
- herbal therapy
- chiropractic therapy
- reflexology
- hypnotherapy

Integrative Therapy

Integrative therapy is a term that refers to the combination of both evidence-based or mainstream medicine and complementary therapies.

Unproven or Untested Methods

Unproven or untested therapies may refer to treatments with little basis in scientific fact or it may also refer to treatments or tests that are currently under investigation. Adequate scientific study and evidence is not yet available to support its use.

Alternative Therapies

Alternative refers to treatments that are used in place of conventional medical therapies and may often be promoted as cures. Most often they are unproven because they have never been scientifically tested according to U.S. standards or they may have been tested and found to be ineffective. Choosing alternative therapies instead of traditional medical treatments may cause a patient to put her health at risk.

Quackery

Quackery refers to the treatments, drugs or devices that claim to prevent, diagnose or cure diseases or health conditions, including cancer, that are known to be false or have no proven scientific evidence on which to base their claims. These methods are most often based on a few patient testimonials or so called “doctor” recommendations as evidence for its efficacy and safety. Often the treatment is claimed to be effective for multiple diseases as well as cancer. The elderly or chronically ill are often targets of quackery therapies.

After a cancer diagnosis, you deserve every opportunity to restore your health to optimal levels. Choosing appropriate treatments is the foundation for your recovery. Many

people find that it is helpful to combine complementary therapies with treatment recommended by their healthcare providers but are often reluctant to share this decision with their physician. However, it is important to tell your healthcare providers about any treatments, therapies, drugs, vitamins, or herbal products you are considering. There are many therapies that you can safely use along with standard medical treatment to relieve symptoms, reduce side effects, ease pain, and to enjoy your life more. However, there are also some therapies that could interfere with traditional treatment and even cause harmful side effects. Recovery is a partnership between you and your physician. You must communicate to receive the best care possible.

Finding Information on Complementary and Alternative Treatments:

The Internet is a helpful tool for self-education. However, it is also a tool that can be used to promote useless treatments with unproven outcomes. The following is a list of reputable sites providing information you may find helpful.

Alternative and Complementary Medicine

- American Cancer Society:
www.cancer.org
- CancerGuide by Steve Dunn:
www.cancerguide.org
- National Cancer Institute: www.nci.nih.gov
- National Center for Complementary and Alternative Medicine (NCCAM):
www.nccam.nih.gov
- NIH Center for Complementary & Alternative Medicine Citation Index:
www.nccam.nih.gov/health/decisions

Herbal and Food Supplements:

- American Botanical Council:
www.herbalgram.org
- Medical Herbalism: A Journal for the
Clinical Practitioner: www.medherb.com
- Pharmaceutical Information Network:
www.pharminfo.8media.org
- US Pharmacopoeia Consumer:
www.usp.org

**Research on
Alternative/Unproved Methods:**

- National Council Against Health Fraud:
www.ncahf.org
- Quackwatch: www.quackwatch.com

**Book on Complementary and
Alternative Therapies:**

- American Cancer Society's Guide to
Complementary and Alternative
Cancer Methods,
Foreword by David S. Rosenthal, M.D.



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Counseling and Psychotherapy

Counseling and psychotherapy generally involve a patient discussing with a skilled listener thoughts, feelings, memories, and situations that may contribute to personal difficulties. Therapists are often employed by hospitals, and many are in private practice. All therapists should be highly trained. The better qualified have several years—usually five to seven—of training. Psychologists have at least a bachelor's degree for studying the mind and behavior. Clinical psychologists have further training. Psychotherapists tend to specialize in a certain treatment technique, either psychodynamic or humanistic. Choose a therapist you can trust and relate to, regardless of technique. Inquire about the therapist's training, experience, and affiliations with professional associations. You may choose to end therapy whenever you wish.

A session usually lasts about an hour and takes place once a week. Analytic sessions may be more frequent. Sessions may last for weeks or years. Your health insurance may cover part of the treatment charges.

Types of Therapy

- **Psychoanalysis** - the unconscious, in the form of unacknowledged and repressed ideas, feelings, thoughts, memories, and attitudes, is uncovered and reclaimed.
- **Group Therapy** - small groups with a shared situation, such as addiction or illness, meet over several months to share experiences and feelings with a practitioner.
- **Family Therapy** - family discusses difficulties and hidden conflicts with a therapist with the intent of resolving problems and changing patterns of behavior.
- **Counseling** - practitioners focus on specific problems, such as grief, divorce, or job loss, rather than on intense personal issues.
- **Cognitive Behavioral Therapy** - involves everything from basic desensitization for phobias to stress management, eating disorders and less severe forms of depression. Techniques may include relaxation, biofeedback, visualization, and meditation with the intent to identify and change negative thoughts, expectations, and behavior, but not to seek to understand the deeper psychological origins of a problem.
- **Humanistic Psychotherapy** - emphasis on personal development and achieving one's potential. Typical goals are financial or job success, spiritual development, relationship development or emotional openness. Techniques may include experimenting with unfamiliar ways of behaving and relating to others.
- **Neurolinguistic Programming** - combines cognitive behavioral techniques and hypnotherapy methods. The practitioner helps you understand how and why you organize thoughts and feelings and assists you in reorganizing them to work better.

- **Transactional Analysis** - encourages the recognition of potentially conflicting roles such as the creative but needy child, the realistic adult, or the nurturing but judgmental parent.
- **Transpersonal Approaches** - explores dreams, inner heroes, creativity, and aspirations.



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Diet Therapies

The role of diet in causing and preventing conditions such as heart disease and cancer is well established, as is the importance of vitamins and minerals in maintaining health. Nutritionists, however, go one step further than most conventional dietitians or physicians by using diet and food supplements to treat as well as to prevent illness. They look for nutritional deficiencies, food allergies or intolerances, and for lifestyle and environmental factors that disturb the digestion and the full absorption of nutrients into the bloodstream.

Practitioners believe that even if you eat a balanced diet and have a healthy metabolism, you can still be adversely affected by toxins including industrialization and environmental factors. Nutritionists are convinced these factors cause problems that range from frequent infections, vague aches or pains, and fatigue, to serious conditions including severe depression, high blood pressure, and even cancer. A number of practitioners believe environmental factors and nutritional deficiencies are so serious that dietary adjustments alone may not be sufficient and recommend high doses of vitamins and minerals. Conventional physicians question the safety and lack of research into the possible side effects of such high doses.

Common Diet Therapies:

- **Stone Age Diet** - plain fish, lamb, vegetables, and moderate amounts of fruit allowed, but cultivated wheat and unrefined grains and dairy products are restricted. Recommended for irritable bowel syndrome or a wheat sensitivity.

- **Vegan Diet** - is entirely free of animal products - no meat, poultry, fish, eggs, milk or honey. Adequate protein depends on a balance of peas, beans, nuts, grains and seeds.
- **Raw Food Diet** - includes 70 percent raw fruit and vegetables and 30 percent grains, nuts, dairy products, and meat. The "enzyme activity" of uncooked food is said to benefit the digestive system and promote well-being.
- **The Hay Diet** - protein and carbohydrate foods are eaten separately and "neutral" foods can be combined with either group. Recommended for people with low resilience and energy levels and poor digestion.
- **Macrobiotic Diet** - balances food according to yin (light) and yang (dense) properties. The most extreme forms consist almost entirely of brown rice and vegetables and in the long term could lead to malnutrition.

Precautions:

- Check with your physician before beginning any nutrient supplements. They may react with or counteract with prescribed medications.
- Do not take high doses of vitamins or minerals without consulting your physician. Excessive supplementation can have adverse side effects.
- Do not follow a strict diet for long periods without the supervision of a qualified nutritionist. Always consult your physician before beginning a diet program.



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Energy Healing

Energy healers claim to use an unexplainable, non-threatening healing energy to activate a patient's natural self-healing process. It is done by laying on of hands or by offering healing at a distance through the medium of thought or prayer. The nature or source varies among healers, but most believe in a divine or higher power. Healers seem to be ordinary people who see themselves as "channels" for healing energy. Spiritualist healers say that a spirit of the dead assists them and regard themselves as conductors of supernatural healing power. While the process is not based on any scientific knowledge, physicians admit that energy healing can help people; in fact, some healers practice in healthcare organizations. Many nurses practice therapeutic touch. Research suggests that it can relieve anxiety, speed wound healing, decrease post-operative pain, and reduce the effects of stress on the immune system.

After discussing lifestyle and concerns with the client, healers will "center" themselves by relaxing and focusing their minds. Most healers view their hands as the conductor of healing power and will place them on or slightly above the body. By touching you slightly or making sweeping movements, the healers are able to assess any "imbalances" in your "energy field." The sweeping hand movements are thought to rebalance disruptions in the energy field and to stimulate the natural healing process. After doing this, the healer is said to be "attuned," and can then concentrate on allowing healing energy to flow into your body.

Reiki is one of the fastest growing healing therapies. Practitioners claim to channel "reiki energy" to areas of need, both in their patients and in themselves. Reiki is said to work at an atomic level, making the body's molecules vibrate so intensely that "energy blockages" are dissolved.

Main Uses:

- Adjunct to conventional medicine in serious, chronic, and painful conditions
- Stress related problems
- Wound healing

Precautions:

Do not consult a healer who demands your unquestioning faith in order for treatment to succeed. Healers should never offer a diagnosis or promise a cure.



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Hypnotherapy

Hypnotherapy is a state of heightened relaxation that therapists use to alleviate pain, foster self-confidence, overcome phobias, or even treat conditions such as asthma. After the patient is hypnotized, the practitioner attempts to plant positive suggestions in the subconscious mind, which is more open in this state to influence than during normal waking times. Practitioners insist that patients are aware of their surroundings and are unlikely to do anything against their will.

If you choose to visit a hypnotherapist, you will be asked about your medical history and any present conditions and why you are seeking help. Depending on the practitioner's form of therapy and training and the problem, you may be asked to recall past experiences or be taken progressively into a deeper relaxed state of mind and encouraged to overcome your problems.

Main Uses:

- Pain relief
- Phobias
- Stress and anxiety
- Depression
- Addictions
- Asthma
- Skin conditions
- Digestive disorders

Precautions:

May not be advisable for those with severe depression, psychosis, or epilepsy.



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Journaling

Writing in a journal is an effective way to handle the emotions that living with cancer has triggered. Journal writing empowers you to express your difficult feelings in a safe and private way. It allows you to come to terms with cancer at your own pace and in your own way. Your journal is always there to receive your thoughts and feelings. It helps make sense of life events, find meaning in them and learn the lesson they have to teach. Because journal writing forces you to look inward, it helps clarify your fears and thoughts. By writing, you will realize that your illness is only a part of you, not the whole person. It helps you put your illness in perspective.

Prepare by getting a notebook or use your computer and select a time you will journal daily. Some people like writing early in the morning, while others like writing at the end of the day. Select the best time for you.

Ideas for Journaling

- Record your feelings, fears and what blessings you enjoyed or discovered each day.
- Start a list of 50 ways cancer has changed your life; 50 strengths you have; 50 things you have always wanted to do; 50 ways to nurture yourself. Add to the list gradually.
- Write down your goals-weekly, monthly, yearly. Return to check them off when accomplished.
- Write down your prayers, if you are spiritual.
- Collect inspirational sayings and poems.

Place your journal in a place where others will not read it. This allows you to be completely honest. This is your history of how you are growing and changing.



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Maintaining A Healthy Diet

Almost every woman has at some time gone on a diet to lose weight. When we talk of diet, we usually think of an effort to lose weight. However, our diet not only affects our weight but also, of even greater importance, has a direct effect on our health and longevity. What we eat plays a major part in our health status. In the United States, heart disease and cancer account for the most deaths, and diet plays a significant role in their development. Dr. Henry Leis, a breast cancer specialist, states,

“Dietary factors are now linked to the etiology (cause) of about 50 percent of all cancer, acting as promoters in their multi-step pathogenesis (development of disease). There is a strong correlation between dietary fat intake and cancer based on international studies.”

Women are now becoming diet activists not simply to lose weight but to improve their health status. Diet is now considered a powerful tool in fitness and preventive health, reducing the risk of cancer, diabetes, cardiovascular and other serious diseases. Diet and disease are linked. The first step we need to take is to identify how we need to change our diet to promote a healthier lifestyle.

Dietary fat has been identified as a risk factor for many diseases and is often the culprit for much unwanted weight. Sugar has gotten the blame for years even though fat was more of a common denominator, not only for weight increases but for many diseases. Therefore, a

smart diet is monitoring what we eat in order to have a healthier life, and, in the meantime, losing unwanted pounds. Findings regarding dietary fat include:

- Dietary fat has the ability to increase the level of the hormone estrogen, which has proven to stimulate some tumors.
- Dietary fat has been linked to higher cholesterol that can lead to cardiovascular disease.
- Dietary fat has more calories than other nutrients (proteins and carbohydrates).

Smart dieting recognizes that it is wise to lower anything that has the potential to promote disease and increase weight. Fat consumption can be monitored. How? We learn how to count fat calories. Then we learn to substitute healthful fats—mono and polyunsaturated fats—such as safflower, sunflower, canola and olive oils, in place of saturated fats such as animal, coconut, and palm oils that cause an elevated cholesterol level.

Learn to:

- Read labels for percentage of fat content and grams per serving.
- Read for kind of fat.
- Select the healthy fats.
- Limit the number of fat grams eaten daily.

Authorities say that we should not have more than 25 percent of our daily calories from fat.

To determine how many fat calories you can eat, divide the number of calories a day by four (25 percent) or by five (20 percent).

**2,000 calories a day
divided by 4 = 500 calories a day from fat.**

Then divide the 500 calories from fat by 9 to get grams of fat you can eat per day

500 divided by 9 = 55 grams of fat per day.

If you wish to **lose weight**, you may **reduce your number of grams** to a lower number but **do not go on a totally fat-free diet**; this is not healthy. Between 15 and 25 percent of daily calories should come from dietary fat. Essential vitamins needed daily are found in dietary fat.

<u>Age</u>	<u>Weight</u>	<u>Fat budget</u>
25 - 50	110-130 lbs	65 grams
	130-150 lbs	75 grams
	150-170 lbs.	85 grams
51 & up	110-130 lbs.	55 grams
	130-150 lbs.	65 grams
	150-170 lbs.	75 grams

Now that you have determined the number of fat grams you can eat a day, find yourself a fat gram chart, select the foods you enjoy, and eat a balanced diet that does not leave you feeling hungry or deprived. Hints that prove helpful in this eating style:

- Eat more chicken, turkey, and fish instead of red meat; remove skin. Do not fry; instead, broil or bake meat. Cook with a nonstick skillet and use cooking spray.
- Buy fat-free or low-fat salad dressings and mayonnaise.
- Buy low-fat cheese.
- Try frozen or low-fat yogurt for dessert instead of ice cream.
- Look at fat grams in bread; most are low fat, but a croissant is high in fat.

- Eat more whole grain pasta, bread, and cereals.
- Eat more fresh fruit.
- Cook vegetables with little or no fat.
- Drink skim milk.
- Drink a minimum of eight 8-ounce glasses of water daily.
- Read all labels; watch for hidden fat in foods.

To help prevent disease, Dr. Henry Leis states: "Differences can be affected by a host of lifestyle variables and not simply by a low fat diet. Other factors of major importance include a high-fiber, reduced calorie diet; avoidance of obesity; proper exercise; use of appropriate vitamins and minerals as supplements; limiting consumption of alcohol, salt-cured, smoked and nitrite cured foods; and reducing levels of environmental carcinogens. These changes can do much to reduce the incidence of cancer and cardiovascular disease and increase longevity."

"We are what we eat" and what we eat is one thing we can all control. A sensible approach of reducing dietary fat, adding additional fiber, and eating a balanced diet can be a valuable tool in reducing our weight while also reducing our risk of disease.

Additional diet suggestions:



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Massage Therapy

Massage is probably the oldest and simplest form of medical care. It has been used for thousands of years around the world to promote well-being, ease pain, and relieve anxiety. A number of studies support its healing role in lowering blood pressure; improving circulation, muscle tone and digestion; and promoting relaxation.

Massage can stimulate the release of endorphins, the natural painkillers produced by the body. It also induces a feeling of comfort and well-being that can aid relaxation and reduce levels of stress hormones, such as cortisol and norepinephrine, that may otherwise eventually weaken the immune system.

Massage can directly affect body systems that govern heart rate, blood pressure, respiration, digestion, and pain. As local circulation improves, so does the supply of oxygen and nutrients to the skin and body tissues, and excess tissue fluids are flushed away. The lymphatic system can then work more effectively to eliminate waste products that can cause pain and stiffness in joints and muscles. Massage also relaxes tension in the muscles improving mobility and flexibility. Massage has been effectively used with babies to reduce colicky sensations and digestion problems while creating a closer bond. Psychologically, massage can calm the mind and reduce anxiety, thereby equipping people to better cope with stress.

Massage techniques may differ but usually consist of gentle stroking, kneading and squeezing, deep penetration and short, sharp taps to the body. Massage therapy is used in other complementary therapies such as aromatherapy, reflexology, Rolfing, Hellerwork, and osteopathy.



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Meditation

Meditation involves focusing the mind and ignoring distractions. People who meditate claim they have clearer thoughts, calmness, and energy. Research suggests that meditation can improve conditions including anxiety, migraines, irritable bowel syndrome, and PMS. By triggering the relaxation response, meditation reverses the physiological effects of stress including reducing heart rate, slowing metabolism, slowing digestive system, and loosening muscles. Brain waves change to a distinctive alpha pattern that indicates the mind and body are resting deeply, although still mentally alert. It is possible to learn meditation from books, tapes, or videos but consulting a teacher or joining a group is recommended.

Meditation Techniques:

- **Mantra Meditation** - repetition of a word or phrase in your head
- **Breath Awareness** - focus on breathing and counting "one" or thinking of a word or image that induces a sense of peace each time you exhale
- **Vispassana (Mindfulness)** - enter a state of "diffuse openness" in which you are fully conscious of, but detached from, your immediate experience and thoughts
- **Object Meditation** - focus with eyes open on an object, concentrating on its shape, weight and texture

Main Uses:

- Stress and anxiety
- High blood pressure
- Headaches
- Fatigue, depression, insomnia
- Pain
- Addictions
- Boosting the immune system
- Personal development



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Music Therapy

Music unquestionably soothes and stirs emotions. Music allows feelings to be expressed that may be too profound for words. Its association with healing is ancient, but music has only recently come to be employed as a therapy for those with serious illnesses, disabilities, and mental or psychological distress. Research indicates that listening to music may stimulate neurochemicals that promote relaxation and even enhance the immune system. Many dentists' offices, intensive care units, cancer centers, and obstetric units use music to reduce a patient's anxiety.

Sessions are individual or group, and treatment varies according to the condition. It is unnecessary to have music training or knowledge to benefit from the therapy. Participation or listening can be soothing and provide relief for those with stress related conditions. Music can also relieve physical pain or stimulate memories, making it very useful for the elderly.

Main Uses:

- Learning and communication difficulties, especially autism
- Mental, emotional, and behavioral problems
- Depression
- Stress, anxiety, especially associated with chronic diseases
- Care for the elderly
- Pain relief, especially in labor or in terminal illness



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Reflexology

Reflexology is one of the most popular complementary therapies and is offered in many hospitals, cancer centers, pain clinics and infant intensive care units. The therapy is based on the belief that the hands and feet mirror the body, and stimulation of specific reflex points on them can affect associated organs and systems. The big toe, for example, reflects the head and brain. A combination of massage, pressure, and pinching over all parts of the feet, or in some cases the hands, can bring deep relaxation.

Zones on the left side of the body are said to correspond to reflex points on the left foot and hand, and those on the right to the right foot and hand. Practitioners believe that granular crystalline accumulations of waste products, possibly uric acid and calcium, collect around reflex points. The more tender these points are to the touch, the greater the "imbalance" in the body. The practitioner tries to break down these deposits to free "energy flow" along the zones and stimulate circulation to clear "toxins." Mental health is also said to be reflected in the feet. Therefore, reflexology is also used to treat emotional problems.

Despite a lack of any scientific evidence, physicians concede that pressure on the 7,200 nerve endings in each foot seems to promote feelings of deep relaxation, which may induce useful, nonspecific effects.

Precautions:

- Avoid in first three months of pregnancy
- Consult with physician if you have long term health problem
- Inform practitioner of any medications you are taking



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Yoga

Yoga is a regime of mental and physical training based on the traditional Indian health system, Ayurveda. Yoga is focused on life and how it should be lived with an emphasis on healthy eating and good personal hygiene. It progresses through physical postures and breathing techniques to meditation that clears the consciousness. Yoga is valued for its ability to increase flexibility and relieve stress. Most physicians accept yoga as a health benefit, often relieving asthma, arthritis, and heart conditions.

People of all ages can benefit from yoga, and it is probably best learned in a class setting. After gentle warm-up exercises, the yoga teacher demonstrates the correct way to perform asanas, postures designed to stretch and strengthen muscles and to stimulate nerve centers and organs. The class then practices the technique. You should not be tempted to push yourself too far or be competitive. If you are practicing yoga for medical reasons, always consult a teacher trained in yoga therapy.

Main Uses:

- Stress, anxiety, fatigue, moderate depression
- Headaches, migraines
- Circulatory disorders
- Asthma, bronchitis
- Irritable bowel syndrome
- Persistent back problems
- Menstrual problems
- Improve mobility and flexibility
- General well-being

Precautions:

- Be cautious if pregnant or menstruating.
- Consult a physician if you have back or neck pain, high blood pressure, circulatory problems, heart disease, or disorders of the brain, ears, or eyes.