MRI Abdomen Routine

Updated 11/04/23
Reviewed 05/14/25

Indications: liver, spleen, adrenal and renal indications and other general abdominal indications (other than those for pancreas, MRCP and Eovist protocols).

Full Abdomen FOV: Lung bases to iliac crest or to bottom of liver/spleen/kidneys if they extend low (top/bottom coverage), anterior to posterior subq fat (front/back coverage), right to left subq fat (right/left coverage).

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T2 HASTE/SSFSE	T2 COR	cor	no	7	1.4	front
T2 HASTE/SSFSE	T2 AX	ax	no	7	1.4	top
T2 HASTE/SSFSE	T2 FS AX	ax	yes	7	1.4	top
In/Out Phase w/ DIXON	IN/OUT AX	ax	no	5	1	top
T1 VIBE/LAVA	T1 FS PRE COR	cor	yes	3.5	0.6	front
T1 VIBE/LAVA	T1 FS PRE AX	ax	yes	3.5	0.6	top

CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

For the arterial phase bolus track and trigger when contrast reaches the renal arteries.

T1 VIBE/LAVA	T1 FS ART AX	ax	yes	3.5	0.6	top
T1 VIBE/LAVA	T1 FS 70 SEC AX	ax	yes	3.5	0.6	top
T1 VIBE/LAVA	T1 FS 3 MIN COR	cor	yes	3.5	0.6	front
Diffusion (b50, b800, ADC)	DIFFUSION AX	ax	yes	7	1.4	top
T1 VIBE/LAVA	T1 FS 5 MIN AX	ax	yes	3.5	0.6	top

RECONS:

axial and coronal subtractions

MRI Pelvis Routine (Unisex)

Updated 07/05/25
Reviewed 07/05/25

Indications: Ovarian cancers/masses/cysts/lesions, endometriosis, pelvic pain, lymphadenopathy and any pelvis exam which does not have a more specific protocol.

Use uterus protocol for uterine fibroids & uterine bleeding (among other indications).

Full Pelvis FOV: Iliac crests to few slices below introitus/anus (top/bottom coverage), greater trochanter to greater trochanter (right/left coverage), anterior pelvic wall skin to posterior buttock skin (front/back coverage).

If the mass/uterus/ovaries extend into the abdomen, increase craniocaudal coverage to include the entire structure.

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
GLUCAGON - 1 mg slow IV push **just before** beginning imaging.						
T2 HASTE/SSFSE	T2 COR	cor	no	5	1.4	front
T2 TSE	T2 SAG	sag	no	4	1	right
T2 TSE	T2 AX	ax	no	3	1	top
T2 HASTE/SSFSE	T2 FS SAG	sag	yes	4	1	sag
T2 HASTE/SSFSE	T2 FS AX	ax	yes	3	1	top
In/Out Phase w/ DIXON	IN/OUT AX	ax	no	4	1	top
T1 VIBE/LAVA	T1 FS PRE SAG	sag	yes	3	0.6	right
T1 VIBE/LAVA	T1 FS PRE AX	ax	yes	3	0.6	top
GLUCAGON - 1 mg slow IV push **just before** giving IV contrast.						
CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.						
T1 VIBE/LAVA	T1 FS 35 SEC AX	ax	yes	3	0.6	top
T1 VIBE/LAVA	T1 FS 70 SEC AX	ax	yes	3	0.6	top
T1 VIBE/LAVA	T1 FS POST SAG	sag	yes	3	0.6	right
T1 VIBE/LAVA	T1 FS POST COR	cor	yes	3	0.6	front
Diffusion (b50, b800, ADC)	DIFFUSION AX	ax	yes	5	1	top

RECONS:

axial and sagittal subtractions

MRI Abdomen/Pelvis Combo

Updated 11/04/23
Reviewed 05/14/25

The exam includes orders/requisitions for both the abdomen and pelvis. Put all images into one folder to send to PACS.

Full Abdomen FOV: Lung bases to iliac crest or to bottom of liver/spleen/kidneys if they extend low (top/bottom coverage) anterior to posterior subq fat (front/back coverage), right to left subq fat (right/left coverage).

Full Pelvis FOV: Iliac crests to few slices below introitus/anus (top/bottom coverage), greater trochanter to greater trochanter (right/left coverage), anterior pelvic wall skin to posterior buttock skin (front/back coverage).

MRCP FOV: above central intrahepatic bile ducts to bottom of gallbladder/pancreas (top/bottom coverage), front of gallbladder to few slices posterior to pancreas (front/back coverage), right of gallbladder to left of pancreatic tail (right/left coverage).

If the length of bore can't do top/bottom coverage in one scan without wrap, split abdomen and pelvis into two parts.

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice	Field of View
T2 HASTE/SSFSE	T2 AX	ax	no	7	1.4	top	abdomen/pelvis
T2 HASTE/SSFSE	T2 FS AX	ax	yes	7	1.4	top	
T1 VIBE/LAVA	T1 FS PRE AX	ax	yes	3.5	0.6	top	
T2 HASTE/SSFSE	T2 COR	cor	no	7	1.4	front	abdomen
In/Out Phase w/ DIXON	IN/OUT AX	ax	no	5	1	top	
T1 VIBE/LAVA	T1 FS PRE COR	cor	yes	3.5	0.6	front	
T2 TSE	T2 SAG	sag	no	5	1	right	pelvis
T1 VIBE/LAVA	T1 FS PRE SAG	sag	yes	3.5	0.6	right	

CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

For the arterial phase bolus track and trigger when contrast reaches the renal arteries.

T1 VIBE/LAVA	T1 FS ART AX	ax	yes	3.5	0.6	top	abdomen
T1 VIBE/LAVA	T1 FS 70 SEC AX	ax	yes	3.5	0.6	top	abdomen/pelvis
T1 VIBE/LAVA	T1 FS POST SAG	sag	yes	3.5	0.6	right	pelvis
T1 VIBE/LAVA	T1 FS 3 MIN COR	cor	yes	3.5	0.6	front	abdomen
Diffusion (b50, b800, ADC)	DIFFUSION AX	ax	yes	7	1.4	top	abdomen/pelvis
T1 VIBE/LAVA	T1 FS 5 MIN AX	ax	yes	3.5	0.6	top	

If exam is for a **PANCREAS** indication, run the following sequences at the beginning of the exam:

T2 HASTE/SSFSE	MRCP THINS COR	cor	no	4	0.8	front	MRCP
T2 HASTE/SSFSE	MRCP THINS SAG	sag	no	4	0.8	right	
T2 HASTE/SSFSE	MRCP THINS AX	ax	no	4	0.8	top	

RECONS:

abdomen - axial and coronal subtractions

pelvis - axial and sagittal subtractions

MRI Chest

Updated 11/04/23

Reviewed 05/14/25

Indications: pericardial, mediastinal, thymic masses/cysts and bronchogenic cysts.

This protocol is not used for chest wall masses (use MSK protocols) or cardiac exams.

Check with rad to see if any additional sequences are needed based on history and/or prior images.

If no prior imaging, do axial T2 HASTE nonFS of the entire thorax to find the lesion.

Chest FOV: supraclavicular to adrenals (top/bottom coverage), anterior to posterior subq fat (front/back coverage),

right to left subq fat (right/left coverage).

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T2 HASTE/SSFSE	T2 COR	cor	no	5	1	front
T2 HASTE/SSFSE	T2 SAG	sag	no	5	1	right
T2 HASTE/SSFSE	T2 AX	ax	no	5	1	top
T2 HASTE/SSFSE	T2 FS AX	ax	yes	5	1	top
Diffusion (b50, b800, ADC)	DIFFUSION AX	ax	yes	7	1.4	top
In/Out Phase w/ DIXON	IN/OUT AX	ax	no	5	1	top
T1 VIBE/LAVA	T1 FS PRE COR	cor	yes	3.5	0.6	front
T1 VIBE/LAVA	T1 FS PRE SAG	sag	yes	3.5	0.6	right
T1 VIBE/LAVA	T1 FS PRE AX	ax	yes	3.5	0.6	top

CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1 VIBE/LAVA	T1 FS 20 SEC AX	ax	yes	3.5	0.6	top
T1 VIBE/LAVA	T1 FS 70 SEC AX	ax	yes	3.5	0.6	top
T1 VIBE/LAVA	T1 FS POST COR	cor	yes	3.5	0.6	front
T1 VIBE/LAVA	T1 FS POST SAG	sag	yes	3.5	0.6	right
T1 VIBE/LAVA	T1 FS POST AX	ax	yes	3.5	0.6	top

RECONS:

axial, coronal and sagittal subtractions

MRI Pancreas (includes MRCP)

Updated 11/04/23
Reviewed 05/14/25

Indications: pancreatic mass, pancreatitis, gallbladder disease, biliary obstruction, cholethiasis, choledocholithiasis.
Use MRCP protoocol for any of the above indications if the exam is ordered without IV contrast.

Full Abdomen FOV: Lung bases to iliac crest or to bottom of liver/spleen/kidneys if they extend low (top/bottom coverage), anterior to posterior subq fat (front/back coverage), right to left subq fat (right/left coverage).

MRCP FOV: above central intrahepatic bile ducts to bottom of gallbladder/pancreas (top/bottom coverage), front of gallbladder to few slices posterior to pancreas (front/back coverage), right of gallbladder to left of pancreatic tail (right/left coverage).

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice	Field of View
T2 HASTE/SSFSE	MRCP THINS COR	cor	no	4	0.8	front	MRCP
T2 HASTE/SSFSE	MRCP THINS SAG	sag	no	4	0.8	right	
T2 HASTE/SSFSE	MRCP THINS AX	ax	no	4	0.8	top	
T2 HASTE/SSFSE	T2 COR	cor	no	7	1.4	front	full abdomen
T2 HASTE/SSFSE	T2 AX	ax	no	7	1.4	top	
T2 HASTE/SSFSE	T2 FS AX	ax	yes	7	1.4	top	
In/Out Phase w/ DIXON	IN/OUT AX	ax	no	5	1	top	
T1 VIBE/LAVA	T1 FS PRE COR	cor	yes	3.5	0.6	front	
T1 VIBE/LAVA	T1 FS PRE AX	ax	yes	3.5	0.6	top	

CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.
For the arterial phase bolus track and trigger when contrast reaches the renal arteries.

T1 VIBE/LAVA	T1 FS ART AX	ax	yes	3.5	0.6	top	full abdomen
T1 VIBE/LAVA	T1 FS 70 SEC AX	ax	yes	3.5	0.6	top	
T1 VIBE/LAVA	T1 FS 3 MIN COR	cor	yes	3.5	0.6	front	
Diffusion (b50, b800, ADC)	DIFFUSION AX	ax	yes	7	1.4	top	
T1 VIBE/LAVA	T1 FS 5 MIN AX	ax	yes	3.5	0.6	top	

RECONS:

axial and coronal subtractions

MRI MRCP

Updated 11/04/23

Reviewed 05/14/25

Indications: cholecystitis, gallstones, biliary dilatation, choledocholithiasis, jaundice, pancreatitis, RUQ/epigastric pain.

Have the patient drink 16 oz water (if not NPO) 10 mins prior to beginning exam to distend to the duodenum and allow better visualization of the ampulla.

Full Abdomen FOV: Lung bases to iliac crest or to bottom of liver/spleen/kidneys if they extend low (top/bottom coverage), anterior to posterior subq fat (front/back coverage), right to left subq fat (right/left coverage).

MRCP FOV: above central intrahepatic bile ducts to bottom of gallbladder/pancreas (top/bottom coverage), front of gallbladder to few slices posterior to pancreas (front/back coverage), right of gallbladder to left of pancreatic tail (right/left coverage).

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice	Field of View
T2 HASTE/SSFSE	MRCP THINS COR	cor	no	4	0.8	front	MRCP
T2 HASTE/SSFSE	MRCP THINS SAG	sag	no	4	0.8	right	
T2 HASTE/SSFSE	MRCP THINS AX	ax	no	4	0.8	top	
Radial Thick Slab	MRCP THICK SLAB	radial	yes	50	25	NA	
3D Slab MRCP	MRCP THIN SLAB	cor	yes	1	0	front	
T2 HASTE/SSFSE	T2 FS AX	ax	yes	7	1.4	top	full abdomen
T1 VIBE/LAVA	T1 FS PRE AX	ax	yes	3.5	0.6	top	
In/Out Phase w/ DIXON	IN/OUT AX	ax	no	5	1	top	
Diffusion (b50, b800, ADC)	DIFFUSION AX	ax	yes	7	1.4	top	

RECONS:

horizontal and vertical MIP spinners of the 3D MRCP sequence

MRI Eovist

Updated 11/04/23

Reviewed 05/14/25

Indications: FNH versus adenoma after inconclusive standard liver MR, cholangiocarcinoma, biliary anatomy, bile leak, hepaticojejunostomy evaluation, presurgical evaluation of colon metastases to the liver (when ordered as Eovist protocol).

This protocol must be approved by a body Radiologist.

After the 20 min images are obtained and if the exam is ordered for biliary anatomy, bile leak or hepaticojejunostomy evaluation, have a **body Radiologist check** images for adequate opacification of the biliary tree.

Can repeat axial and coronal T1s every 5 mins until biliary opacification is adequate.

Full Abdomen FOV: Lung bases to iliac crest or to bottom of liver/spleen/kidneys if they extend low (top/bottom coverage) anterior to posterior subq fat (front/back coverage), right to left subq fat (right/left coverage).

MRCP FOV: above central intrahepatic bile ducts to bottom of gallbladder/pancreas (top/bottom coverage), front of gallbladder to few slices posterior to pancreas (front/back coverage), right of gallbladder to left of pancreatic tail (right/left coverage).

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice	Field of View
T2 HASTE/SSFSE	MRCP THINS COR	cor	no	4	0.8	front	MRCP
T2 HASTE/SSFSE	MRCP THINS SAG	sag	no	4	0.8	right	
T2 HASTE/SSFSE	MRCP THINS AX	ax	no	4	0.8	top	
In/Out Phase w/ DIXON	IN/OUT AX	ax	no	5	1	top	full abdomen
T1 VIBE/LAVA	T1 FS PRE COR	cor	yes	3.5	0.6	front	
T1 VIBE/LAVA	T1 FS PRE AX	ax	yes	3.5	0.6	top	

CONTRAST - 1 mL/sec 10 mL Eovist followed by 20 mL saline flush. All patients receive 10 mL Eovist regardless of weight.

For the arterial phase bolus track and trigger when contrast reaches the renal arteries.

T1 VIBE/LAVA	T1 FS ART AX	ax	yes	3.5	0.6	top	full abdomen
T1 VIBE/LAVA	T1 FS 70 SEC AX	ax	yes	3.5	0.6	top	
T1 VIBE/LAVA	T1 FS 3 MIN COR	cor	yes	3.5	0.6	front	
T1 VIBE/LAVA	T1 FS 5 MIN AX	ax	yes	3.5	0.6	top	
T2 HASTE/SSFSE	T2 COR	cor	no	7	1.4	front	
T2 HASTE/SSFSE	T2 AX	ax	no	7	1.4	top	
T2 HASTE/SSFSE	T2 FS AX	ax	yes	7	1.4	top	
T1 VIBE/LAVA	T1 FS 10 MIN AX	ax	yes	3.5	0.6	top	
T1 VIBE/LAVA	T1 FS 10 MIN COR	cor	yes	3.5	0.6	front	
Diffusion (b50, b800, ADC)	DIFFUSION AX	ax	yes	7	1.4	top	
T1 VIBE/LAVA	T1 FS 15 MIN AX	ax	yes	3.5	0.6	top	
T1 VIBE/LAVA	T1 FS 15 MIN COR	cor	yes	3.5	0.6	front	
T1 VIBE/LAVA	T1 FS 20 MIN AX	ax	yes	3.5	0.6	top	
T1 VIBE/LAVA	T1 FS 20 MIN COR	cor	yes	3.5	0.6	front	

RECONS:

axial and coronal subtractions

MRI Urinary Bladder

Updated 11/25/23
Reviewed 05/14/25

Indications: bladder mass, bladder diverticulum, female urethral/periurethral diverticulum.

Once patient arrives in the department, tell him/her not to use the bathroom and give the patient 16 oz water to drink immediately. The bladder needs to be at least partially distended for the best exam.

If the patient has a Foley catheter, clamp it before exam to distend the bladder. Remember to unclamp it at the end of the exam.

Full Pelvis FOV: Iliac crests to few slices below introitus/anus (top/bottom coverage), greater trochanter to greater trochanter (right/left coverage), anterior pelvic wall skin to posterior buttock skin (front/back coverage).

Bladder FOV: centered on bladder, FOV 13-15 cm, 320 x 320 matrix, cover several slices beyond bladder wall and mass in every plane.

If a MR cystogram is needed, the dilution is 2 mL Clariscan or 1 mL Gadavist added to 250 mL normal saline and mixed well. The patient will need a Foley catheter for a cystogram.

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice	Field of View
GLUCAGON - 1 mg slow IV push **just before** beginning imaging.							
T2 TSE	T2 TSE AX	ax	no	3.5	0.5	top	bladder
T2 TSE	T2 TSE SAG	sag	no	3.5	0.5	right	
T2 TSE	T2 TSE COR	cor	no	3.5	0.5	front	
T2 HASTE/SSFSE	T2 AX	ax	no	7	1.4	top	full pelvis
T2 HASTE/SSFSE	T2 FS AX	ax	yes	7	1.4	top	
T1 VIBE/LAVA	T1 FS PRE SAG	sag	yes	3.5	0.6	right	
T1 VIBE/LAVA	T1 FS PRE AX	ax	yes	3.5	0.6	top	
GLUCAGON - 1 mg slow IV push **just before** giving IV contrast.							
CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.							
T1 VIBE/LAVA	T1 FS 20 SEC AX	ax	yes	3.5	0.6	top	full pelvis
T1 VIBE/LAVA	T1 FS 60 SEC AX	ax	yes	3.5	0.6	top	
T1 VIBE/LAVA	T1 FS POST SAG	sag	yes	3.5	0.6	right	
T1 VIBE/LAVA	T1 FS POST COR	cor	yes	3.5	0.6	front	
Diffusion (b50, b1000, ADC)	DIFFUSION AX	ax	yes	6	1	top	
Roll the patient 3 times on scanner to mix the excreted contrast in bladder.							
T1 VIBE/LAVA	T1 FS 5 MIN AX	ax	yes	3.5	0.6	top	full pelvis

RECONS:

axial and sagittal subtractions

MRI Urogram

Updated 11/04/23
Reviewed 05/14/25

Indications: renal/ureteral stones, hydronephrosis, hydroureter, hematuria.

This protocol must be approved by a body Radiologist.

The exam includes orders/requisitions for both abdomen and pelvis. Put all images into one folder to send to PACS.

The patient should be NPO for at least 6 hrs (preferably 10-12 hrs prior to the exam).

Do not let the patient empty his/her bladder prior to getting on the scanner. The bladder is better evaluated when full.

The patient will receive 500 mL normal saline IV bolus starting 15 mins before getting patient on the table.

A nurse will administer 0.25 mg/kg IV furosemide (up to 5 mg) 5 mins before getting the patient on the table.

Contraindications to furosemide: patient not making urine, hypotension, allergy to Lasix or sulfa drugs.

Full Abdomen FOV: Lung bases to iliac crest or to bottom of liver/spleen/kidneys if they extend low (top/bottom coverage) anterior to posterior subq fat (front/back coverage), right to left subq fat (right/left coverage).

Full Pelvis FOV: Iliac crests to few slices below introitus/anus (top/bottom coverage), greater trochanter to greater trochanter (right/left coverage), anterior pelvic wall skin to posterior buttock skin (front/back coverage).

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice	Field of View
GLUCAGON - 1 mg slow IV push **just before** beginning imaging.							
T2 HASTE/SSFSE	T2 COR	cor	no	7	1.4	front	abdomen/pelvis
T2 HASTE/SSFSE	T2 AX	ax	no	7	1.4	top	
T2 HASTE/SSFSE	T2 FS AX	ax	yes	7	1.4	top	
3D Slab MRU	MRU THIN SLAB	cor	yes	1	0	front	
T1 VIBE/LAVA	T1 FS PRE AX	ax	yes	3.5	0.6	top	
In/Out Phase w/ DIXON	IN/OUT AX	ax	no	5	1	top	abdomen
T2 HASTE/SSFSE	T2 SAG	sag	no	5	1	sag	pelvis
GLUCAGON - 1 mg slow IV push **just before** giving IV contrast. **CONTRAST** - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush. For the arterial phase bolus track and trigger when contrast reaches the renal arteries.							
T1 VIBE/LAVA	T1 FS ART AX	ax	yes	3.5	0.6	top	abdomen
T1 VIBE/LAVA	T1 FS 70 SEC AX	ax	yes	3.5	0.6	top	abdomen/pelvis
T1 VIBE/LAVA	T1 FS POST SAG	sag	yes	3.5	0.6	right	pelvis
Diffusion (b50, b800, ADC)	DIFFUSION AX	ax	yes	7	1.4	top	abdomen/pelvis
T1 VIBE/LAVA	T1 FS DELAY COR	cor	yes	3.5	0.6	front	
T1 VIBE/LAVA	T1 FS DELAY AX	ax	yes	3.5	0.6	top	

RECONS:

axial subtractions

MRI Enterography

Updated 11/04/23
Reviewed 05/14/25

Indications: abdominal pain, inflammatory bowel disease, Crohns disease, ulcerative colitis, bowel obstruction, small bowel or colon mass (when ordered as enterography protocol).

Use MRI Enterography order/requisition for this exam. Put all images into one folder to send to PACS.

The patient drinks 1 bottle Volumen/CitraSelect at 45 mins, 30 mins and 15 mins prior to exam.

Use water if patient cannot tolerate Volumen/CitraSelect.

The patient drinks 16 oz water just before getting on the exam table to distend the stomach.

Image the patient in the prone position. Flip all images to supine positions before sending to PACS.

Enterography FOV: Top of small bowel to few slices below anus (top/bottom coverage), anterior to posterior subq fat (front/back coverage), right to left subq fat (right/left coverage).

If the length of the bore can't do top/bottom coverage in one scan without wrap, split abdomen and pelvis into two parts.

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
*Cine True FISP	CINE COR	cor	no	8	2	front

GLUCAGON - 1 mg slow IV push just **after** the cine true FISP sequence.

T2 HASTE/SSFSE	T2 COR	cor	no	5	0	front
T2 HASTE/SSFSE	T2 FS COR	cor	yes	5	0	front
T2 HASTE/SSFSE	T2 AX	ax	no	5	0	top
T2 HASTE/SSFSE	T2 FS AX	ax	yes	5	0	top
T1 VIBE/LAVA	T1 FS PRE COR	cor	yes	3.5	0.6	front
T1 VIBE/LAVA	T1 FS PRE AX	ax	yes	3.5	0.6	top

GLUCAGON - 1 mg slow IV push **just before** giving IV contrast.

CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1 VIBE/LAVA	T1 FS 25 SEC COR	cor	yes	3.5	0.6	front
T1 VIBE/LAVA	T1 FS 60 SEC COR	cor	yes	3.5	0.6	front
T1 VIBE/LAVA	T1 FS 90 SEC AX	ax	yes	3.5	0.6	top
Diffusion (b50, b800, ADC)	DIFFUSION AX	ax	yes	7	1.4	top
T1 VIBE/LAVA	T1 FS 5 MIN AX	ax	yes	3.5	0.6	top

*The cine true FISP sequences is 20 images per slice, ~1 sec per image, average 6 coronal slices to cover small bowel anterior to posterior.

RECONS:

axial and coronal subtractions

MRI Rectal/Anal Mass

Updated 11/25/23
Reviewed 05/14/25

Indications: rectal or anal mass/cancer.

Have the patient empty his/her bladder just before getting on the table.

Full Pelvis FOV: Just above bifurcation to few slices below introitus/anus (top/bottom coverage), greater trochanter to greater trochanter (right/left coverage), anterior pelvic wall skin to posterior buttock skin (front/back coverage).

Tumor oblique axial T2 HiRes FOV: centered on tumor, FOV 13-15 cm, 320 x 256 matrix, few slices above tumor to few slices below anus.

Anal canal oblique coronal T2 HiRes FOV: centered on anus, FOV 13-15 cm, 320 x 256 matrix, few slices anterior to anus to few slices posterior to anus.

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice	Field of View
T2 HASTE/SSFSE	T2 COR	cor	no	7	1.4	front	full pelvis
T2 HASTE/SSFSE	T2 AX	ax	no	7	1.4	top	
T2 HASTE/SSFSE	T2 FS AX	ax	yes	7	1.4	top	
T2 TSE	T2 SAG	sag	no	4	1	right	

Send the above sequences to PACS for a **body Radiologist check** to localize the mass, determine the oblique axial plane through the mass and the oblique coronal plane through the anus (if the mass approaches the anus).

GLUCAGON - 1 mg slow IV push **just before** the oblique sequences.

T2 TSE	T2 OBL AX	obl ax	no	3	0	top	mass
Diffusion (b50, b800, ADC)	DIFFUSION OBL AX	obl ax	yes	6	1	top	
T2 TSE	T2 TSE COR	obl cor	no	3	0	front	anal canal
T1 VIBE/LAVA	T1 FS PRE AX	ax	yes	3.5	0.6	top	full pelvis
T1 VIBE/LAVA	T1 FS PRE SAG	sag	yes	3.5	0.6	right	

GLUCAGON - 1 mg slow IV push **just before** giving IV contrast.

CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

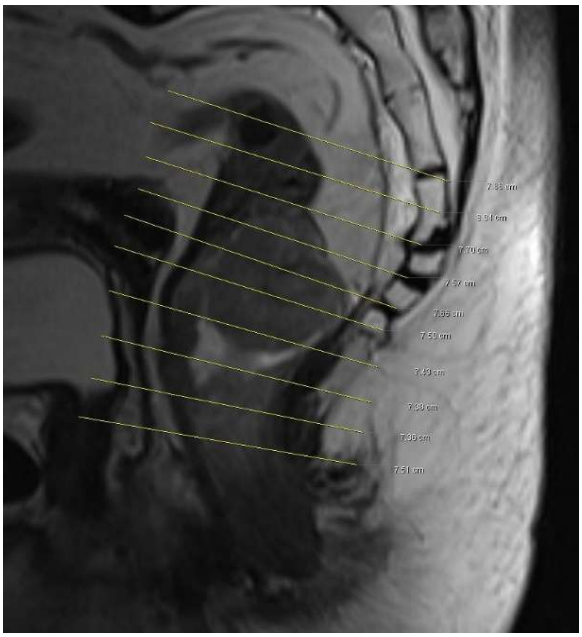
For the arterial phase bolus track and trigger when contrast reaches the renal arteries.

T1 VIBE/LAVA	T1 FS ART AX	ax	yes	3.5	0.6	top	full pelvis
T1 VIBE/LAVA	T1 FS 70 SEC AX	ax	yes	3.5	0.6	top	
T1 VIBE/LAVA	T1 FS POST SAG	sag	yes	3.5	0.6	right	
T1 VIBE/LAVA	T1 FS POST COR	cor	yes	3.5	0.6	front	

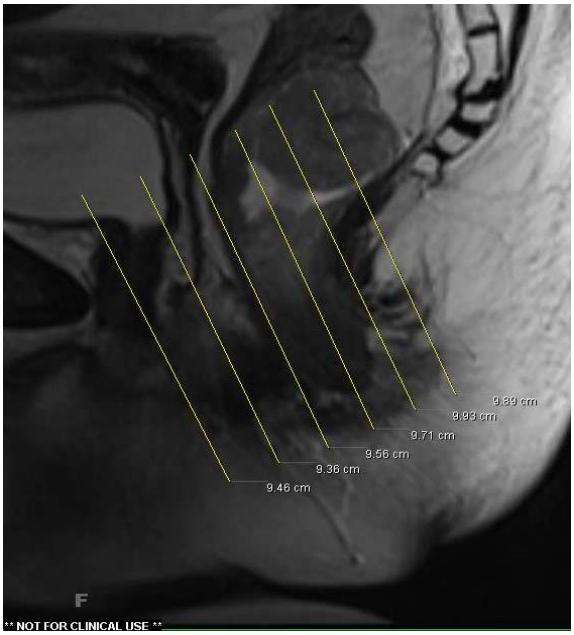
RECONS:

axial and sagittal subtractions

MRI Rectal/Anal Mass



oblique axial angulation (perpendicular to the long axis of the **tumor** in the sagittal plane)



oblique coronal angulation (parallel to the long axis of the **anal canal** in the sagittal plane)

MRI Pelvic Fistula

Updated 11/04/23
Reviewed 05/14/25

Indications: fistulas involving the rectum, colon, bladder or vagina.

There is a separate protocol for perianal fistulas.

Have the patient empty his/her bladder just before getting on the table.

Have female patients administer 30 mL US gel per vagina.

Full Pelvis FOV: Just above bifurcation to few slices below introitus/anus (top/bottom coverage), greater trochanter to greater trochanter (right/left coverage), anterior pelvic wall skin to posterior buttock skin (front/back coverage).

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
GLUCAGON - 1 mg slow IV push **just before** beginning imaging.						
T2 HASTE/SSFSE	T2 COR	cor	no	7	1.4	front
T2 TSE	T2 SAG	sag	no	4	1	right
T2 TSE	T2 FS SAG	sag	yes	4	1	right
T2 TSE	T2 AX	ax	no	4	1	top
T2 TSE	T2 FS AX	ax	yes	4	1	top
T1 VIBE/LAVA	T1 FS PRE SAG	sag	yes	3.5	0.6	right
T1 VIBE/LAVA	T1 FS PRE COR	cor	yes	3.5	0.6	front
T1 VIBE/LAVA	T1 FS PRE AX	ax	yes	3.5	0.6	top
GLUCAGON - 1 mg slow IV push **just before** giving IV contrast.						
CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.						
T1 VIBE/LAVA	T1 FS 35 SEC AX	ax	yes	3.5	0.6	top
T1 VIBE/LAVA	T1 FS 70 SEC AX	ax	yes	3.5	0.6	top
T1 VIBE/LAVA	T1 FS POST SAG	sag	yes	3.5	0.6	right
T1 VIBE/LAVA	T1 FS POST COR	cor	yes	3.5	0.6	front
Diffusion (b50, b800, ADC)	DIFFUSION AX	ax	yes	6	1	top

RECONS:

axial, sagittal and coronal subtractions

MRI Anal Fistula

Updated 06/30/25
Reviewed 05/14/25

Indications: anal and perianal fistula.

There is a separate protocol for fistulas involving the rectum, colon, bladder or vagina.

Have the patient empty his/her bladder just before getting on the table.

Full Pelvis FOV: Just above bifurcation to few slices below introitus/anus (top/bottom coverage), greater trochanter to greater trochanter (right/left coverage), anterior pelvic wall skin to posterior buttock skin (front/back coverage).

Anal canal oblique axial T2 HiRes FOV: centered on anus, FOV 15-20 cm, 256 x 256 matrix, few slices above anus to few slices below anus.

Anal canal oblique coronal T2 Hires FOV: centered on anus, FOV 15-20 cm, 256 x 256 matrix, few slices anterior to anus to few slices posterior to anus.

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice	Field of View
GLUCAGON - 1 mg slow IV push **just before** beginning imaging.							
T2 TSE	T2 SAG	sag	no	4	1	right	full pelvis
T2 TSE	T2 AX	ax	no	3	0	top	
T2 TSE	T2 OBL AX	obl ax	no	3	0	top	anal canal
T2 TSE	T2 FS OBL AX	obl ax	yes	3	0	top	
T2 TSE	T2 OBL COR	obl cor	no	4	0	front	
T1 VIBE/LAVA	T1 FS PRE SAG	sag	yes	3.5	0.6	right	full pelvis
T1 VIBE/LAVA	T1 FS PRE COR	cor	yes	3.5	0.6	front	
T1 VIBE/LAVA	T1 FS PRE AX	ax	yes	3.5	0.6	top	
GLUCAGON - 1 mg slow IV push **just before** giving IV contrast.							
CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.							
T1 VIBE/LAVA	T1 FS 35 SEC AX	ax	yes	3.5	0.6	top	full pelvis
T1 VIBE/LAVA	T1 FS 70 SEC AX	ax	yes	3.5	0.6	top	
T1 VIBE/LAVA	T1 FS POST SAG	sag	yes	3.5	0.6	right	
T1 VIBE/LAVA	T1 FS POST COR	cor	yes	3.5	0.6	front	
Diffusion (b50, b800, ADC)	DIFFUSION AX	ax	yes	6	1	top	

RECONS:

axial, sagittal and coronal subtractions

MRI Anal Fistula

oblique axial angulation (perpendicular to the long axis of the anal canal in the sagittal plane)

oblique coronal angulation (parallel to the long axis of the anal canal in the sagittal plane)

MRI Uterus

Updated 07/05/25
Reviewed 07/05/25

Indications: cancers/masses/lesions of the uterus, endometrium, cervix & vagina; uterine fibroids and leiomyomas; uterine adenomyosis; vaginal/uterine bleeding, pre/post menopausal uterine bleeding & dysfunctional uterine bleeding.

Use unisex protocol for ovarian cancers/masses/cysts, endometriosis & vulvar cancers.

US Gel: patient administers 30 mL US gel into vagina.

US gel **required** for cervix & vaginal indications.

US gel **not required** for uterine indications, fibroids.

Full Pelvis FOV: Iliac crests to few slices below introitus/anus (top/bottom coverage), greater trochanter to greater trochanter (right/left coverage), anterior pelvic wall skin to posterior buttock skin (front/back coverage).

Mass FOV: centered on mass, FOV 13-15 cm, 320 x 256 matrix, cover several slices above and below mass.

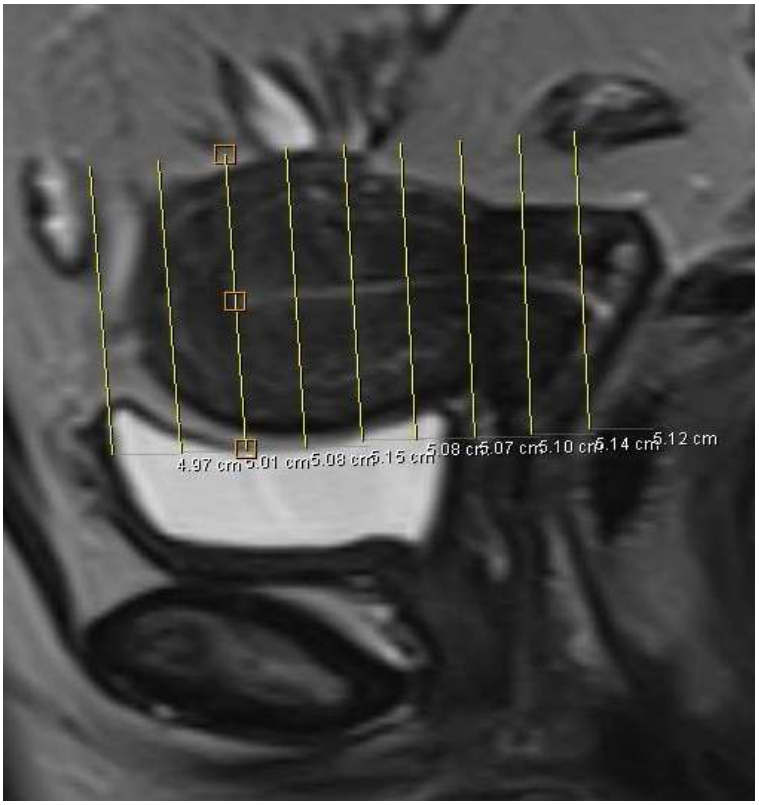
Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice	Field of View
GLUCAGON - 1 mg slow IV push **just before** beginning imaging.							
T2 HASTE/SSFSE	T2 COR	cor	no	7	1.4	front	full pelvis
T2 TSE	T2 SAG	sag	no	5	1	right	
T2 HASTE/SSFSE	T2 AX	ax	no	7	1.4	top	
T2 HASTE/SSFSE	T2 FS AX	ax	yes	7	1.4	top	
Send the above sequences to PACS for a **body Radiologist check** to localize the lesion and determine the oblique axial plane through the lesion (see axial oblique examples on next patient).							
T2 TSE	T2 OBL AX	obl ax	no	3.5	0.5	top	uterus, cervix or vagina (depends on indication & lesion location)
Diffusion (b50, b1000, ADC)	DIFFUSION OBL AX	obl ax	yes	5	0	top	
T1 VIBE/LAVA	T1 FS PRE SAG	sag	yes	3.5	0.6	right	full pelvis
T1 VIBE/LAVA	T1 FS PRE OBL AX	obl ax	yes	3.5	0.6	top	
GLUCAGON - 1 mg slow IV push **just before** giving IV contrast.							
CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.							
T1 VIBE/LAVA	T1 FS 35 SEC SAG	sag	yes	3.5	0.6	right	full pelvis
T1 VIBE/LAVA	T1 FS 60 SEC SAG	sag	yes	3.5	0.6	right	
T1 VIBE/LAVA	T1 FS 90 SEC OBL AX	obl ax	yes	3.5	0.6	top	
T1 VIBE/LAVA	T1 FS 120 SAG	sag	yes	3.5	0.6	right	
T1 VIBE/LAVA	T1 FS 4 MIN OBL AX	obl ax	yes	3.5	0.6	top	
T1 VIBE/LAVA	T1 FS 5 MIN AX	ax	yes	3.5	0.6	top	

RECONS:

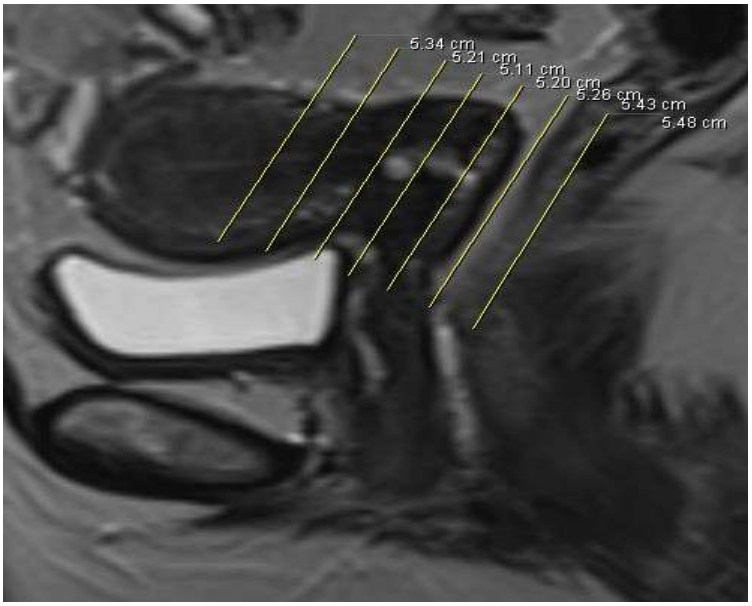
oblique axial and sagittal subtractions

MRI Uterus



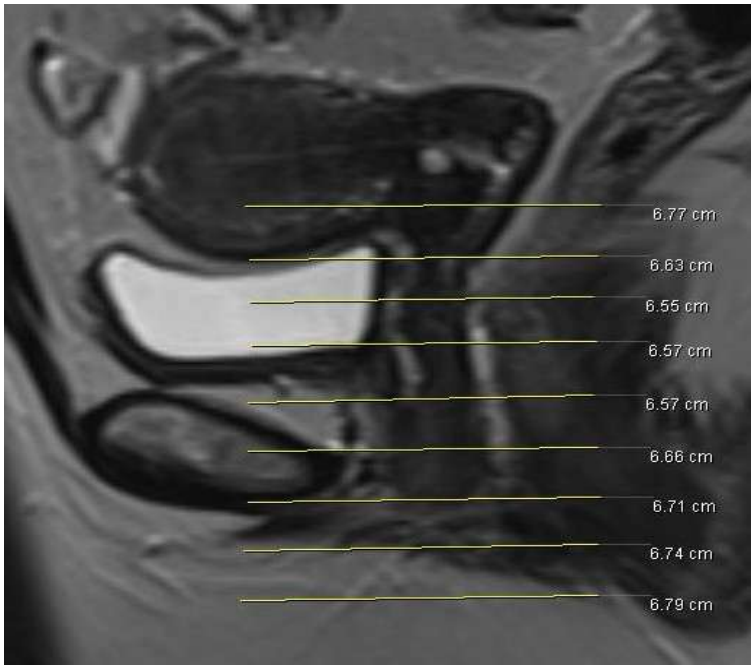
Uterine/Endometrial Lesions/Indications

Oblique axial angulation (perpendicular to the long axis of the endometrial canal in the sagittal plane)



Cervical Lesions/Indications

Oblique axial angulation (perpendicular to the long axis of the endocervical canal in the sagittal plane)



Vaginal Lesions/Indications

Oblique axial angulation (perpendicular to the long axis of the vagina in the sagittal plane)

MRI Uterus Congenital

Updated 07/05/25

Reviewed 07/05/25

Indications: congenital uterine/Mullerian anomalies, septate/arcuate/bicornuate/unicornuate/didelphys uterus.

Full Pelvis FOV: Iliac crests to few slices below introitus/anus (top/bottom coverage), greater trochanter to greater trochanter (right/left coverage), anterior pelvic wall skin to posterior buttock skin (front/back coverage).

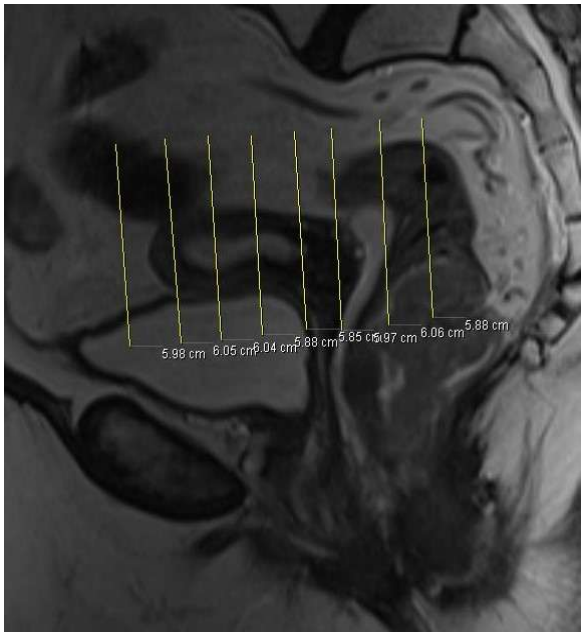
Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
GLUCAGON - 1 mg slow IV push **just before** beginning imaging.						
T2 HASTE/SSFSE	T2 COR	cor	no	7	1.4	front
T2 TSE	T2 SAG	sag	no	5	1	right
T2 HASTE/SSFSE	T2 AX	ax	no	7	1.4	top
T2 HASTE/SSFSE	T2 FS AX	ax	yes	7	1.4	top
Send the above sequences to PACS for a **body Radiologist check** to determine the oblique axial and oblique coronal planes through the uterus and whether IV contrast is needed. Some congenital indications do not require IV contrast.						
T2 TSE	T2 OBL AX	obl ax	no	5	1	top
T2 TSE	T2 OBL COR	obl cor	no	5	1	front
T1 VIBE/LAVA	T1 FS PRE SAG	sag	yes	3.5	0.6	right
T1 VIBE/LAVA	T1 FS PRE AX	ax	yes	3.5	0.6	top
GLUCAGON - 1 mg slow IV push **just before** giving IV contrast.						
CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.						
T1 VIBE/LAVA	T1 FS 35 SEC AX	ax	yes	3.5	0.6	top
T1 VIBE/LAVA	T1 FS 70 SEC AX	ax	yes	3.5	0.6	top
T1 VIBE/LAVA	T1 FS POST SAG	sag	yes	3.5	0.6	right
T1 VIBE/LAVA	T1 FS POST COR	cor	yes	3.5	0.6	front
Diffusion (b50, b800, ADC)	DIFFUSION AX	ax	yes	6	1	top

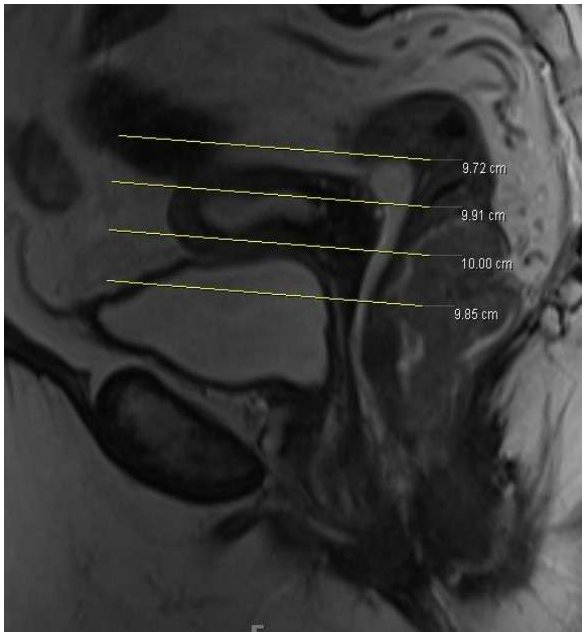
RECONS:

axial and sagittal subtractions

MRI Uterus Congenital



oblique axial angulation (perpendicular to the long axis of the endometrial canal in the sagittal plane)



oblique coronal angulation (parallel to the long axis of the endometrial canal in the sagittal plane)

MRI Prostate

Updated 11/04/23
Reviewed 05/14/25

Indications: prostate cancer and other prostate issues.

Full Pelvis FOV: Iliac crests to few slices below introitus/anus (top/bottom coverage), greater trochanter to greater trochanter (right/left coverage), anterior pelvic wall skin to posterior buttock skin (front/back coverage).

Prostate FOV: cover few slices beyond prostate and seminal vesicles in every plane.

T2 TSE: FOV 12-20 cm, in plane resolution ≤0.7 mm (phase) x ≤0.4 mm (frequency)

DWI: FOV 16-22 cm, in plane resolution ≤2.5 mm (phase) x ≤2.5 mm (frequency), TE ≤90 msec, TR ≥3000 msec

Dynamic T1 post: FOV 12-20 cm, in plane resolution ≤2 mm (phase) x ≤2 mm (frequency), TE <5 msec, TR <100 msec

Go to MRIMaster.com for a guide of proper positioning.

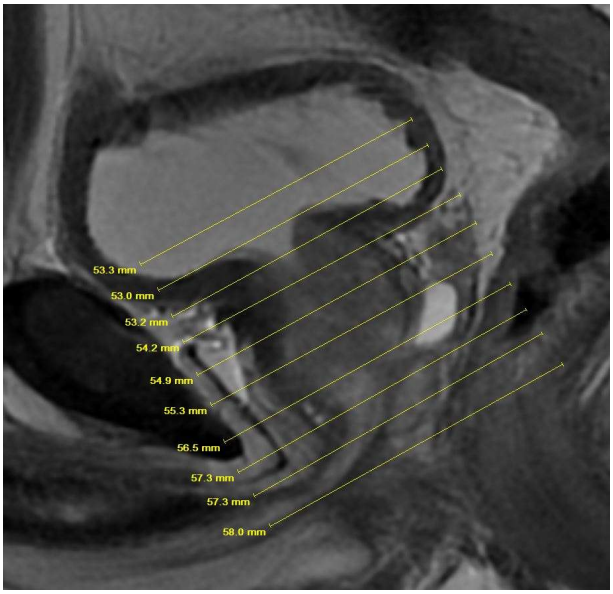
Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice	Field of View
GLUCAGON - 1 mg slow IV push **just before** beginning imaging.							
T2 TSE	T2 SAG	sag	no	3	0	right	prostate & seminal vesicles
T2 TSE	T2 OBL AX	obl ax	no	3	0	top	
T2 TSE	T2S OBL COR	obl cor	no	3	0	cor	
Diffusion (b50, b800, b1400, ADC)	DIFFUSION OBL AX	obl ax	yes	6	1	top	
T2 HASTE/SSFSE	T2 AX	ax	no	7	1.4	top	full pelvis
T2 HASTE/SSFSE	T2 FS AX	ax	yes	7	1.4	top	
T1 TSE	T1 AX	ax	no	8	2	top	
T1 VIBE/LAVA	T1 FS PRE	ax	yes	3.5	0.6	top	
GLUCAGON - 1 mg slow IV push **just before** giving IV contrast.							
CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.							
*T1 VIBE/LAVA	T1 FS DYNAMIC	obl ax	yes	3	0	top	prostate & seminal vesicles
T1 VIBE/LAVA	T1 FS POST AX	ax	yes	3.5	0.6	top	full pelvis
T1 VIBE/LAVA	T1 FS POST SAG	sag	yes	3.5	0.6	right	
T1 VIBE/LAVA	T1 FS POST COR	cor	yes	3.5	0.6	front	

*Dynamic post contrast phase is axial block every 7-10 secs beginning at injection and continuing for 2-3 mins (similar to the dynamics in pituitary MR).

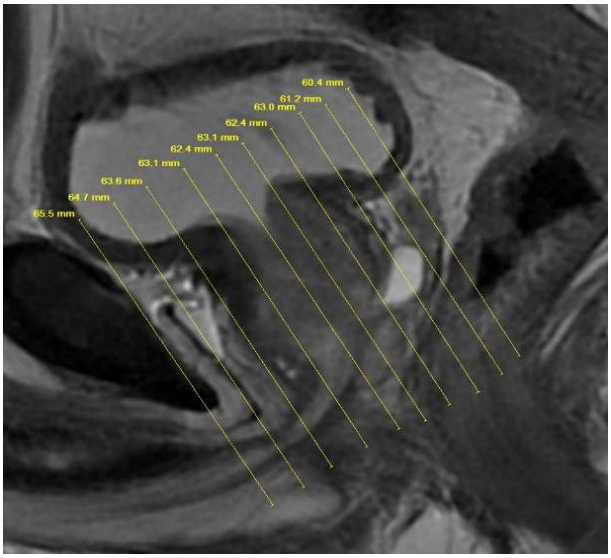
RECONS:

axial subtractions of the dynamic phases and axial whole pelvis

MRI Prostate



oblique axial angulation (perpendicular to the long axis of the prostate in the sagittal plane)



oblique coronal angulation (perpendicular to the long axis of the prostate in the sagittal plane)

MRI Penis/Scrotum

Updated 11/04/23
Reviewed 05/14/25

Indications: testicular/penile/scrotal tumor, infection, pain or trauma and implant integrity/malfunction.

Place a towel under the scrotum to elevate from between thighs. Penis is laid in midline pointing towards the patient's head and taped lightly in place.

Full Pelvis FOV: Iliac crests to few slices below introitus/anus (top/bottom coverage), greater trochanter to greater trochanter (right/left coverage), anterior pelvic wall skin to posterior buttock skin (front/back coverage).

Penis/Scrotum FOV: FOV 18-20 cm, 256 x 256 matrix, cover several slices beyond penis and scrotum in every plane.

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice	Field of View
T2 HASTE/SSFSE	T2 AX	ax	no	7	1.4	top	full pelvis
T2 HASTE/SSFSE	T2 FS AX	ax	yes	7	1.4	top	
T2 TSE	T2 AX	ax	no	4	0.8	top	penis/scrotum
T2 TSE	T2 FS AX	ax	yes	4	0.8	top	
T2 TSE	T2 COR	cor	no	4	0.8	front	
T2 TSE	T2 SAG	sag	no	4	0.8	right	
T1 VIBE/LAVA	T1 FS PRE AX	ax	yes	3.5	0.6	top	full pelvis
T1 VIBE/LAVA	T1 FS PRE SAG	sag	yes	3.5	0.6	right	
Diffusion (b50, b800, ADC)	DIFFUSION AX	ax	yes	6	1	top	

Send the above sequences to PACS for a **body Radiologist check** to determine if IV contrast is needed. Some trauma and implant malfunction cases do not require IV contrast.

CONTRAST - 2 mL/sec standard dose gadolinium (0.2 mL/kg Clariscan or 0.1 mL/kg Gadavist) followed by 20 mL saline flush.

T1 VIBE/LAVA	T1 FS 20 SEC AX	ax	yes	3.5	0.6	top	full pelvis
T1 VIBE/LAVA	T1 FS 60 SEC AX	ax	yes	3.5	0.6	top	
T1 VIBE/LAVA	T1 FS POST SAG	sag	yes	3.5	0.6	right	
T1 VIBE/LAVA	T1 FS POST COR	cor	yes	3.5	0.6	front	

If the exam is for **penile implant integrity/malfunction**, add the following sequences at the end of the exam after the patient has inflated his implant:

T2 TSE	T2 AX	ax	no	4	0.8	top	penis/scrotum
T2 TSE	T2 FS AX	ax	yes	4	0.8	top	

RECONS:

axial and sagittal subtractions

MRI Defecography (Pelvic Floor)

Updated 06/16/25
Reviewed 06/16/25

Indications: fecal/urinary incontinence, constipation, urinary stasis, rectocele, cystocele, vaginal/uterine prolapse.

IV contrast is not given for this protocol.

Full Pelvis FOV: Iliac crests to few slices below introitus/anus (top/bottom coverage), greater trochanter to greater trochanter (right/left coverage), anterior pelvic wall skin to posterior buttock skin (front/back coverage).

Parameters for cine sequences (20 images per run, 1 image per sec).

The sagittal slice for the trueFISP is midline small FOV showing the lower rectum and anal canal (see below image).

Repeat this sequence until the patient exhibits an adequate defecation attempt.

Many patients require multiple attempts before they understand and are comfortable enough to defecate on scanner.

Some patients are unable to defecate on the table no matter how many attempts they make.

The coronal slice for the trueFISP is small FOV through the anal canal (see below image).

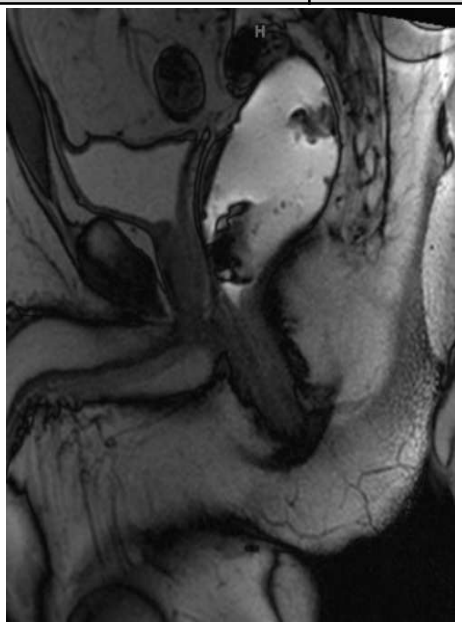
The axial slice for the trueFISP is small FOV through the upper anal canal (see below image).

Go to MRIMaster.com for a guide of proper positioning.

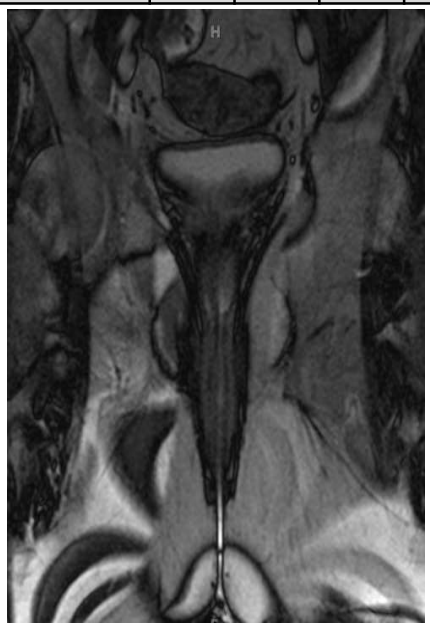
Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice	Field of View
T2 HASTE/SSFSE	T2 COR	cor	no	7	1.4	front	full pelvis
T2 TSE	T2 SAG	sag	no	5	1	right	
T2 TSE	T2 AX	ax	no	5	1	top	
T2 HASTE/SSFSE	T2 FS AX	ax	yes	7	1	top	

Have the patient administer 120 mL US gel via syringe into her/his rectum. Make sure the US gel is present/visible and that the pubic symphysis & distal coccyx are present on the first cine sagittal images prior to continuing with the remaining cines.

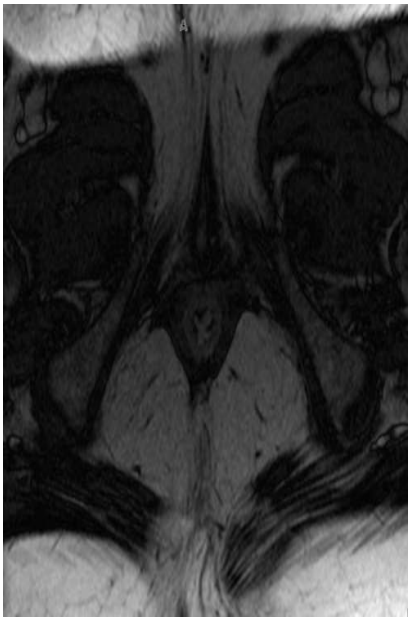
Cine True FISP	CINE SAG 1	sag	no	1.4	1	right	FOV as specified above
Cine True FISP	CINE SAG 2	sag	no	1.4	1	right	
Cine True FISP	CINE SAG 3	sag	no	1.4	1	right	
Cine True FISP	CINE COR	cor	no	1.4	1	front	
Cine True FISP	CINE AX	ax	no	1.4	1	top	



sagittal FISP



coronal FISP



axial FISP

MRI Pregnant Patient

Updated 11/20/23

Reviewed 05/14/25

This protocol must be approved by a Radiologist.

IV contrast is not given unless a Radiologist approves regardless of how it is ordered.

Charge as MR abdomen w/o or MR pelvis w/o depending on where the maximal pain is located.

Place skin marker at site of maximal pain. Center CC FOV at site of maximal pain.

There is a separate protocol for evaluating placental issues in pregnant patients.

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T2 HASTE/SSFSE	T2 COR	cor	no	5	1	front
T2 HASTE/SSFSE	T2 FS COR	cor	yes	5	1	front
T2 HASTE/SSFSE	T2 AX	ax	no	5	1	top
T2 HASTE/SSFSE	T2 FS AX	ax	yes	5	1	top
T2 HASTE/SSFSE	T2 SAG	sag	no	5	1	right
True FISP	TRUE FISP AX	ax	no	5	1	top
In/Out Phase w/ DIXON	IN/OUT AX	ax	no	5	1	top
T1 VIBE/LAVA	T1 FS AX	ax	yes	3.5	0.6	top
Diffusion (b50, b800, ADC)	DIFFUSION AX	ax	yes	7	1.4	top

MRI Placenta

Updated 11/25/23

Reviewed 05/14/25

Indications: morbidly adherent placenta, placenta accreta/increta/percreta, placenta previa, placental abruption.

This protocol must be approved by a Radiologist.

IV contrast is not given unless a Radiologist approves regardless of how it is ordered.

Full Uterus FOV: Top to bottom coverage to include entire pelvic or entire uterus whichever is larger, greater trochanter to greater trochanter (right/left coverage), anterior pelvic wall skin to posterior buttock skin (front/back coverage).

The oblique axial plane is relative to the long axis of the placenta (see below picture).

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T2 TSE	T2 SAG	sag	no	4	1	right
T2 TSE	T2 OBL AX	obl ax	no	4	1	top
T2 HASTE/SSFSE	T2 AX	ax	no	6	1	top
T2 HASTE/SSFSE	T2 FS AX	ax	yes	6	1	top
T2 HASTE/SSFSE	T2 COR	cor	no	6	1	front
T1 VIBE/LAVA	T1 FS SAG	sag	yes	5	0.5	right
T1 VIBE/LAVA	T1 FS AX	ax	yes	5	0.5	top

oblique axial angulation (perpendidular to the long axis of the placenta in the sagittal plane)

MRI ER Adult

Updated 11/04/23

Reviewed 05/14/25

Indications: primary indication is ER patients who refuse or cannot undergo CT imaging.

This protocol must be approved by a Radiologist.

IV contrast is not given unless a Radiologist approves regardless of how it is ordered.

If IV contrast is approved, just run the AP combo protocol.

The exam includes orders/requisitions for both the abdomen and pelvis. Put all images into one folder to send to PACS.

Place skin marker at site of maximal pain.

Full Abdomen FOV: Lung bases to iliac crest or to bottom of liver/spleen/kidneys if they extend low (top/bottom coverage) anterior to posterior subq fat (front/back coverage), right to left subq fat (right/left coverage).

Full Pelvis FOV: Iliac crests to few slices below introitus/anus (top/bottom coverage), greater trochanter to greater trochanter (right/left coverage), anterior pelvic wall skin to posterior buttock skin (front/back coverage).

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice	Field of View
T2 HASTE/SSFSE	T2 COR	cor	no	7	1.4	front	full abdomen
T2 HASTE/SSFSE	T2 AX	ax	no	7	1.4	top	
T2 HASTE/SSFSE	T2 FS AX	ax	yes	7	1.4	top	
T1 VIBE/LAVA	T1 FS AX	ax	yes	3.5	0.6	top	
In/Out Phase w/ DIXON	IN/OUT AX	ax	no	5	1	top	
Diffusion (b50, b800, ADC)	DIFFUSION AX	ax	yes	7	1.4	top	
T2 HASTE/SSFSE	T2 SAG	sag	no	5	1	right	full pelvis
T2 HASTE/SSFSE	T2 AX	ax	no	7	1.4	top	
T2 HASTE/SSFSE	T2 FS AX	ax	yes	7	1.4	top	
T1 VIBE/LAVA	T1 FS AX	ax	yes	3.5	0.6	top	
Diffusion (b50, b800, ADC)	DIFFUSION AX	ax	yes	7	2	top	

MRI Pediatric Patient

Updated 11/20/23

Reviewed 05/14/25

This protocol must be approved by a Radiologist.

IV contrast is not given unless a Radiologist approves regardless of how it is ordered.

Charge as MR abdomen w/o or MR pelvis w/o depending on where the maximal pain is located.

Place skin marker at site of maximal pain. Center CC FOV at site of maximal pain.

There is a separate protocol for evaluating placental issues in pregnant patients.

Go to MRIMaster.com for a guide of proper positioning.

Pulse Sequence	PACS Name	plane	fat sat	slice (mm)	gap (mm)	first slice
T2 HASTE/SSFSE	T2 COR	cor	no	5	1	front
T2 HASTE/SSFSE	T2 FS COR	cor	yes	5	1	front
T2 HASTE/SSFSE	T2 AX	ax	no	5	1	top
T2 HASTE/SSFSE	T2 FS AX	ax	yes	5	1	top
T2 HASTE/SSFSE	T2 SAG	sag	no	5	1	right
True FISP	TRUE FISP AX	ax	no	5	1	top
In/Out Phase w/ DIXON	IN/OUT AX	ax	no	5	1	top
T1 VIBE/LAVA	T1 FS AX	ax	yes	3.5	0.6	top
Diffusion (b50, b800, ADC)	DIFFUSION AX	ax	yes	7	1.4	top