CT DePuy Knee

Updated 05/05/24
Reviewed 05/15/25

Indications - pre surgical evaluation prior to knee joint replacement.
Bill under CT LE w/o Contrast charge. Do not include separate hip, knee and ankle charges.

GENERAL SCAN NOTES

Remove any metal from the imaging field of view.
Patient positioning:
Patient in supine position feet first with knees extended and toes pointing straight up.
Elevate contralateral leg if prosthesis present to minimize streak artifact.
Do not allow patient movement between or during the scans.
Topogram - iliac crests through feet.
Craniocaudal scan coverage - just above femoral head through just below talus.
Must use FOV 150-200 mm.
IV Contrast: not given for this protocol.
For **GE scanners**, it is essential for the 1st recon thickness on the scanner to match the 1st recon thickness in this protocol book for the prescribed Noise Index to be valid. The 1st recon should generally be the thickest recon in the protocol.
Prepare an uncompressed DICOM disc containing axial soft tissue images and send to:

SIEMENS PARAMETERS & RECONS

	Scan Mode	kV	mAs	Care Dose	Care kV & Lvl	Pitch	Acq	Coll	Rot Time
Sensation 16	spiral	120	200	on	NA	0.80	16	0.75	0.5
Go Up 32	spiral	130	109	on	on 170	0.80	32	0.7	1.0
Sensation 64	spiral	120	200	on	NA	0.90	64	0.6	0.5
Definition 64	spiral	120	190	on	on	0.80	64	0.6	1.0
Go Top 64	spiral	120	131	on	on 170	0.80	64	0.6	1.0
Drive 128	spiral	120	133	on	on	0.80	128	0.6	1.0
Force 192	spiral	120	133	on	on	0.80	192	0.6	1.0

Name of Series	Thick	Interval	Kernel	Window	IR Lvl	Recon Direction	
AX BONE	3.0	3.0	Br59 / B60	bone/osteo	3	head/feet	
COR BONE	3.0	3.0	Br59 / B60	bone/osteo	3	front/back	
SAG BONE	3.0	3.0	Br59 / B60	bone/osteo	3	left/right	
AX SOFT	**0.75**	**0.7**	**Br40 / B31**	**abdomen**	**3**	**head/feet**	**DePuy specific recon.**

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GE PARAMETERS & RECONS

	Scan Type	SFOV	kV	mA Range	Noise Index	Smart mA	Slice Thick	Beam Coll	Pitch	Speed	Rot Time	Dose Red	ASIR
LS 16	helical	large	120	100-440	19.09	on	2.5	20	1.375	27.50	0.5	NA	NA
Opt 540	helical	large	120	100-440	19.09	on	2.5	20	1.375	27.50	0.5	NA	NA
LS VCT 64	helical	large body	120	120-450	11.50	on	2.5	40	0.984	39.37	0.5	30	70
Disc VCT 64	helical	large body	120	100-700	14.14	on	2.5	40	0.984	39.37	0.8	NA	NA

Name of Series	Thickness	Interval	Recon Algorithm	Window Width/Level	Recon Direction	
AX BONE	**2.5**	**2.5**	**bone full**	**2500/480**	**head/feet**	**Must be first recon.**
COR BONE	2.5	2.5	bone full	2500/480	front/back	
SAG BONE	2.5	2.5	bone full	2500/480	left/right	
AX SOFT	**0.625**	**0.625**	**std full**	**400/40**	**head/feet**	**DePuy specific recon.**

PHILIPS PARAMETERS & RECONS

	Scan Mode	kV	Avg mAs	Dose Index	3D Dose	Pitch	Detect	Colli	Rot Time
Incisive 128	helical	120	103	20	on	0.80	64	0.625	0.75

Name of Series	Thick	Interval	Filter	Window	iDose	Recon Direction	
AX BONE	3.0	3.0	YC	bone	3	head/feet	
COR BONE	3.0	3.0	YC	bone	3	front/back	
SAG BONE	3.0	3.0	YC	bone	3	left/right	
AX SOFT	**0.75**	**0.7**	**B**	**abdomen**	**3**	**head/feet**	**DePuy specific recon.**

CPI
DePuy Orthopaedics, Inc.
700 Orthopaedic Drive
Warsaw, Indiana 46581-0988
(800) 689-0746

DePuy

Computed Tomography CT

Scanner Brand	Scanner Type	Scanner Specific Parameters		
		Recon Filter	Knee Slab Thickness/Spacing	Image Transfer Options
Siemens®	Sensation	B31s	0.6 mm	CD-R, DVD-R, MOD, PACS secure DICOM send
GE®	Lightspeed	STANDARD	0.625 mm	CD-R, MOD, PACS secure DICOM send
Philips®	Brilliance	B	0.6 mm OR 0.625 mm	CD-R, MOD, PACS secure DICOM send
Toshiba®	Aquilion	FC04	0.5 mm	MOD, DVD-RAM, CD-R, PACS secure DICOM send

Siemens® is a registered trademark of Siemens AG.
GE® is a registered trademark of General Electric Company.
Philips® is a registered trademark of Koninklijke Philips Electronics N.V..
Toshiba® is a registered trademark of Toshiba Corporation.

Frequently Asked Questions:

Q1: Are there special instructions if the patient has metal devices in the knee slab region?
A1: Yes, attempt to flex the contralateral knee as far as possible to place the metal artifact in slices outside of the knee articular region.

Q2: Can I shift the image center for each slab such that each joint is centered in the image?
A2: No, set the field of view (FOV) and image center based on the entire leg and just adjust the start and stop locations as necessary.

Q3: How should the physical image media (i.e. CD-R) be shipped to DePuy?
A3: Overnight. The surgeon and patient are counting on the delivery of the scan as soon as possible in order to meet the surgery date.

Q4: Should I be concerned about setting windowing for the project?
A4: If you have the ability to adjust the windowing, please use a soft tissue window such that the Hounsfield unit (HU) range is large.

Q5: Can I include significant overlap and thus extra slices in the project?
A5: No, follow the protocol as specified on the previous page with minimal or no overlap.

Q6: Can I scan the patient the patient in the prone position?
A6: Yes, if necessary due to patient limitations but be sure to label the orientation correctly in your scan and note the prone position on the disk.

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Also called True Net

Computed Tomography CT

Total Knee Replace

DePuy CPI Knee Scanning Protocol

This protocol is to ensure that an accurate 3-D model can be created by DePuy and used to design a patient specific knee instrument. Scan settings should be optimized to capture bony geometry and cartilage of the knee. The hip and ankle data is needed to align the entire leg for a total knee replacement. Review the following information before proceeding with the scanning process.

Scanning Procedure

- ***All data must be collected in same-center/size study(s), with the same FOV, without gaps and minimal overlap.***
- **Patient movement during the scan will disqualify the study and require rescan.**
- Minimize FOV in the range of 15 cm to 20 cm so the image captures the knee of interest, and corresponding hip and ankle. Leg alignment on the table will assist with this goal.
- Use a standard (soft tissue) reconstruction filter.
- If there are metal devices in the contralateral knee, please see page 2 for instructions.

Scan Parameters

Contrast	Area	FOV	Center	Spacing/ Thickness	Pitch	kV	Recon Filter
None	Specified Leg	15-20 cm	Constant	Equal - see diagram for values	1:1	120	Soft Tissue

XYY's

Note: If your scanner will not support the whole leg in a single study, as shown, you may perform three separate studies. To do this, set the FOV on the full leg scout and only adjust the start and stop position such that the end position of the previous study is the start of the next study.
Patient movement between and during the scans will disqualify the study and require rescan.

Just send axials images
Write Doctor's name on disk

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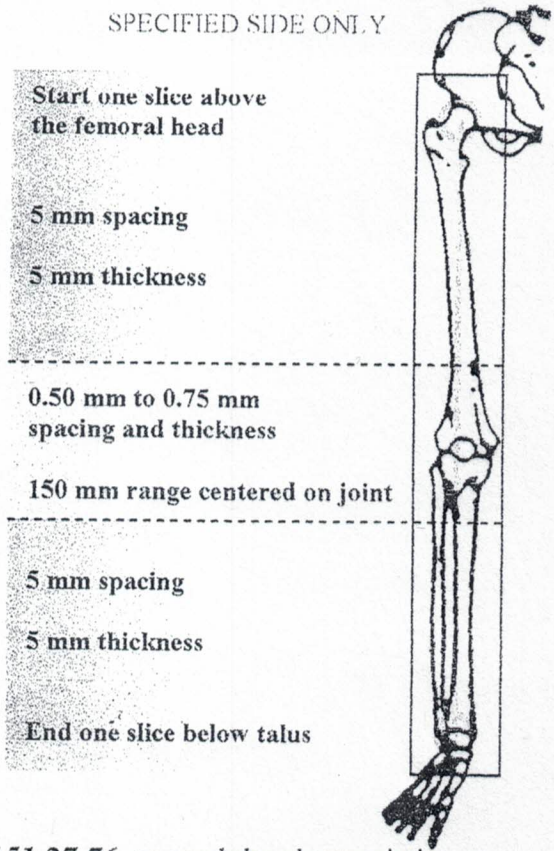
SPECIFIED SIDE ONLY



Jeff Roose or (DePuy ENGINEERS)
Brian Rose 800-473-3789

Call to arrange secure DICOM transfer to our PACS server, ***70.151.27.76***, or send the electronic image data as individual DICOM images on a CD, DVD, or optical disk. Label the disk with "CPI Knee", patient name, doctor name, imaging facility name, and imaging facility telephone number.