

# CT Mako Knee

Updated  
5/5/2024

Indications - pre surgical evaluation for knee joint replacement.

Bill under CT LE w/o Contrast charge. Do not include separate hip, knee and ankle charges.

## GENERAL SCAN NOTES

Move the patient's arms over his/her head if possible. Remove any metal from the imaging field of view.

Patient positioning:

Patient in supine position feet first with both knees and ankles aligned.

Elevate the knee of interest slightly with a rolled towel or blanket.

Motion rod should be placed along lateral aspect of leg.

Wrap the Velcro strap one complete revolution around the rod.

Do not allow patient movement between or during the scans.

Topogram - iliac crests through feet.

Craniocaudal scan coverage (see image below):

Hip - above femoral head to lesser trochanter of femur. FOV must be <500 mm.

Knee - 10 cm above knee joint to 10 cm below knee joint. FOV must be <250 mm.

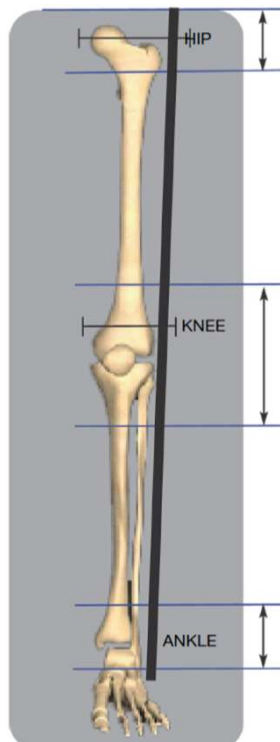
Ankle - few centimeters above ankle joint through bottom of talus. FOV must be <500 mm.

Matrix must be 512 x 512 squared.

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 all images (without DICOM viewer).



**Craniocaudal Scan Coverage**



**Metal Rod Placement**

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## SIEMENS PARAMETERS & RECONS

For Hip, Knee and Ankle scans:

	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	200	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	200	on	on	0.80	64	0.6	1.0
Go Top 64	spiral	120	200	on	on 170	0.80	64	0.6	1.0
Drive 128	spiral	120	200	on	on	0.80	128	0.6	1.0
Force 192	spiral	120	200	on	on	0.80	192	0.6	1.0

### HIP RECONS

Name of Series	Thick	Interval	Kernel	Window	IR Lvl	Recon Direction
<b>AX HIP BONE</b>	<b>3.0</b>	<b>3.0</b>	<b>Br59 / B60</b>	<b>bone/osteo</b>	<b>3</b>	<b>head/feet</b>
COR HIP BONE	3.0	3.0	Br59 / B60	bone/osteo	3	front/back
SAG HIP BONE	3.0	3.0	Br59 / B60	bone/osteo	3	left/right

**Mako specific recon.**

### KNEE RECONS

AX KNEE BONE	3.0	3.0	Br59 / B60	bone/osteo	3	head/feet
COR KNEE BONE	3.0	3.0	Br59 / B60	bone/osteo	3	front/back
SAG KNEE BONE	3.0	3.0	Br59 / B60	bone/osteo	3	left/right
<b>AX KNEE THINS</b>	<b>0.75</b>	<b>0.75</b>	<b>Br59 / B60</b>	<b>bone/osteo</b>	<b>3</b>	<b>head/feet</b>

**Mako specific recon.**

### ANKLE RECONS

Name of Series	Thick	Interval	Kernel	Window	IR Lvl	Recon Direction
<b>AX ANKLE BONE</b>	<b>3.0</b>	<b>3.0</b>	<b>Br59 / B60</b>	<b>bone/osteo</b>	<b>3</b>	<b>head/feet</b>
COR ANKLE BONE	3.0	3.0	Br59 / B60	bone/osteo	3	front/back
SAG ANKLE BONE	3.0	3.0	Br59 / B60	bone/osteo	3	left/right

**Mako specific recon.**

# CT Mako Knee

## GE PARAMETERS & RECONS

For Hip, Knee and Ankle scans:

	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	12.50	on	2.5	10	0.938	9.37	0.5	NA	NA
Opt 540	helical	large	120	100-440	12.50	on	2.5	10	0.938	9.37	0.5	NA	NA
LS VCT 64	helical	large body	120	100-450	16.00	on	2.5	40	0.984	39.37	0.5	20	20
Disc VCT 64	helical	large body	120	100-450	16.00	on	2.5	40	0.984	39.37	0.5	20	20

### HIP RECONS

Name of Series	Thickness	Interval	Recon Algorithm/Mode	Window Width/Level	Recon Direction
<b>AX HIP BONE</b>	<b>2.5</b>	<b>2.5</b>	<b>bone full</b>	<b>2500/480</b>	<b>head/feet</b>
COR HIP BONE	2.5	2.5	bone full	2500/480	front/back
SAG HIP BONE	2.5	2.5	bone full	2500/480	left/right

**Must be first recon.**

**Mako specific recon.**

### KNEE RECONS

AX KNEE BONE	2.5	2.5	bone full	2500/480	head/feet
COR KNEE BONE	2.5	2.5	bone full	2500/480	front/back
SAG KNEE BONE	2.5	2.5	bone full	2500/480	left/right
<b>AX KNEE THINS</b>	<b>0.625</b>	<b>0.625</b>	<b>bone plus full</b>	<b>2500/480</b>	<b>head/feet</b>

**Must be first recon.**

**Mako specific recon.**

### ANKLE RECONS

<b>AX ANKLE BONE</b>	<b>2.5</b>	<b>2.5</b>	<b>bone full</b>	<b>2500/480</b>	<b>head/feet</b>
COR ANKLE BONE	2.5	2.5	bone full	2500/480	front/back
SAG ANKLE BONE	2.5	2.5	bone full	2500/480	left/right

**Must be first recon.**

**Mako specific recon.**

# CT Mako Knee

## PHILIPS PARAMETERS & RECONS

For Hip, Knee and Ankle scans:

	Scan Mode	kV	Avg mAs	Dose Index	3D Dose	Pitch	Detect	Colli	Rot Time	Scan Time
Incisive 128	helical	120	285	29	<b>off</b>	1.00	64	0.625	0.75	5.6

### HIP RECONS

Name of Series	Thick	Interval	Filter	Window	iDose	Recon Direction
<b>AX HIP BONE</b>	<b>3.0</b>	<b>3.0</b>	<b>YC</b>	<b>bone</b>	<b>3</b>	<b>head/feet</b>
COR HIP BONE	3.0	3.0	YC	bone	3	front/back
SAG HIP BONE	3.0	3.0	YC	bone	3	left/right

**Mako specific recon.**

### KNEE RECONS

AX KNEE BONE	3.0	3.0	YC	bone	3	head/feet
COR KNEE BONE	3.0	3.0	YC	bone	3	front/back
SAG KNEE BONE	3.0	3.0	YC	bone	3	left/right
<b>AX KNEE THINS</b>	<b>0.75</b>	<b>0.75</b>	<b>YC</b>	<b>bone</b>	<b>3</b>	<b>head/feet</b>

**Mako specific recon.**

### ANKLE RECONS

<b>AX ANKLE BONE</b>	<b>3.0</b>	<b>3.0</b>	<b>YC</b>	<b>bone</b>	<b>3</b>	<b>head/feet</b>
COR ANKLE BONE	3.0	3.0	YC	bone	3	front/back
SAG ANKLE BONE	3.0	3.0	YC	bone	3	left/right

**Mako specific recon.**