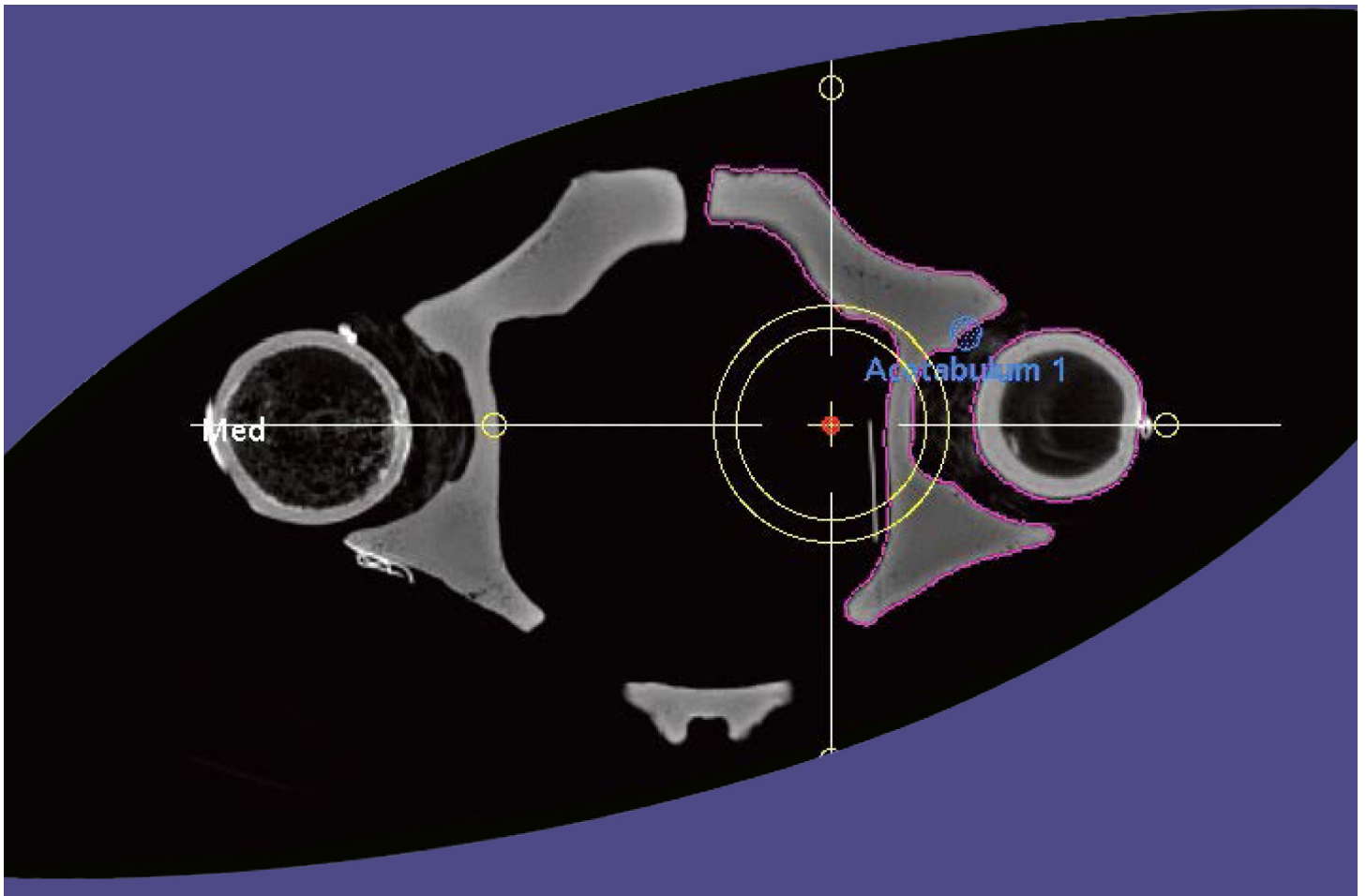


Mako THA CT Scanning Protocol

☐ REF ☐ OMIT



R_x ONLY

EN

Hip scanning protocol

Patient setup and configuration

Scan the patient up to 8 weeks before the MAKOplasty® THA procedure. Make sure the patient is:

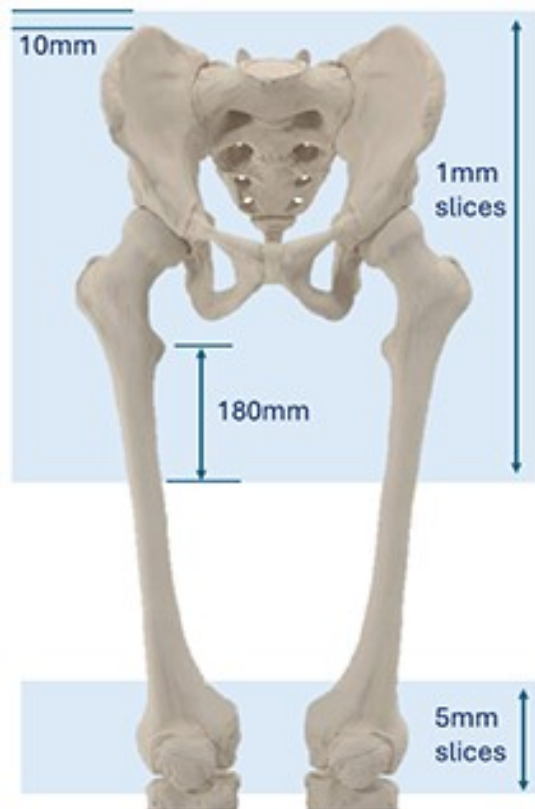
- In the supine position
- Feet first

Use the following measures to position the patient. This will minimize pelvic obliquity:

- Align both ankles and both knees.
- Make sure the patient is in the true supine position. Point the toes at the ceiling. Palpate the anterior superior iliac spines. Compare the relative height above the CT scanning bed.
- Align the longitudinal axis of the body with the longitudinal axis of the CT scanning bed.
- Do NOT include a motion rod for the hip scans.

Parameters for the hip scans

Position/landmark	Supine Feet first			
Topogram (scout) direction	Cranio-caudal AP and lateral scout			
kVp	120–140 kV Recommended: 120 kVp, 140 kVp for revision cases			
mA, *if available	200–250 mA *Auto exposure control			
Pitch	1:1, no gaps			
Helical set Slice thickness, spacing, algorithm	Region	Thick- ness	Spacing	Algo- rithm
	Hip	0.5–1 mm	0.5–1 mm	Bone
	Knee	2–5 mm	2–5 mm	Bone
Image resolution matrix	512 x 512 matrix The image must be a square			
DFOV	Hip= 500 mm, Knee= 500 mm Do not exceed limits			
Scan plan	Scan in the axial plane for all regions Hip and knee			
Scan start and end locations	Begin the scan below the knee joint. End the scan above the most superior aspect of the iliac crest on the hip.			



Hip region	Include the entire bi-lateral pelvis: • Medial • Lateral • Anterior • Posterior • Superior Include 5–10 mm above the most superior iliac crest, and at least 180 mm below the lesser trochanters of the femurs. No portion of either iliac crest should be visible in the most superior slice. The table below references the required distance:	
	Slice increment in millimeters	Number of slices
	0.500	360
	0.625	288
	0.750	240
	0.875	206
	1.000	180
Knee region	Include the bilateral knee including the: • Joint lines between the femur and tibia • 10 cm proximal to the joint line on the femur	
Images required for transfer	Transfer all the axial bone images of the hip and knees including the AP topogram in an uncompressed DICOM 3 compatible format, to PACS or CD. Do not include any extra image sets including: • Multiple knees and hips • Sagittal and coronal reconstructions	

i Note - Scanning tips:

- Make sure there is a continuous scan between the regions. Use the bone algorithm.
- Make sure no portion of the anatomy is clipped or out of view.

Position the patient

⚠ WARNING - During the scan, the pelvis and leg must remain motionless.

Imaging artifacts

- Make sure the patient is comfortable and relaxed to complete a motionless scan.
- If metallic components are present in the pelvis or proximal femur, it may not be possible to obtain an image of significant quality to support a RIO® THA procedure
- For cases with hardware, use metal artifact reduction (MAR). Move the metallic component away from scan region, if possible. This includes revision cases.
- Do NOT include a motion rod for hip scans.

Examination after the scan

Scan region

The physician and the CT technologist verify the following:

- Orientation of the patient
- Regions of interest in the protocol are visible in the dataset
- Bone line of the regions of interest are visible in the dataset
- Scan includes complete bilateral pelvis and knees
- Image slice thickness meets the requirements in the protocol
- Image slice thickness and field of view (FOV) is correct per region
- Image slices have the same center in the z-axis (fixed axial orientation)
- Bone images in the scan image are not degraded by metal-induced artifacts

Transfer the dataset

The following is required for a successful upload:

- DICOM 3 compatible format
- Uncompressed
- Regular 12-bit JPEG format
- NOT lossless image compression

[i] Note - The value for the Transfer Syntax UID DICOM tag should be Explicit VR Little Endian (1.2.840.10008.1.2.1).

Only provide one set of images per region. Include the following:

- Patient name (first and last)
- Surgeon name (last)
- Operative side (L, R, or Bi)
- Gender (M or F)
- Date of surgery (xx/xx/xxxx)

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