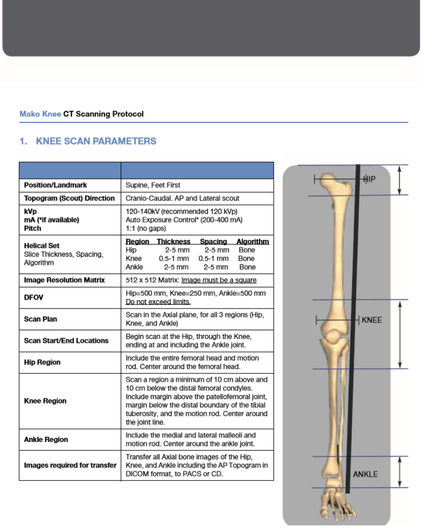
TKA CT Scanning...

MAKO™ KNEE

stryker

CT Scanning Protocol



1. KNEE SCAN PARAMETERS

Position/Landmark	Supine, Feet First
Topogram (Scout) Direction	Cranio-Caudal. AP and Lateral scout
kVp **mA (*if available)** **Pitch**	120-140kV (recommended 120 kVp) Auto Exposure Control* (200-400 mA) 1:1 (no gaps)
Helical Set Slice Thickness, Spacing, Algorithm	**Region Thickness Spacing Algorithm** Hip 2-5 mm 2-5 mm Bone Knee 0.5-1 mm 0.5-1 mm Bone Ankle 2-5 mm 2-5 mm Bone
Image Resolution Matrix	512 x 512 Matrix; Image must be a square
DFOV	Hip=500 mm, Knee=250 mm, Ankle=500 mm Do not exceed limits.
Scan Plan	Scan in the Axial plane, for all 3 regions (Hip, Knee, and Ankle)
Scan Start/End Locations	Begin scan at the Hip, through the Knee, ending at and including the Ankle joint.
Hip Region	Include the entire femoral head and motion rod. Center around the femoral head.
Knee Region	Scan a region a minimum of 10 cm above and 10 cm below the distal femoral condyles. Include margin above the patellofemoral joint, margin below the distal boundary of the tibial tuberosity, and the motion rod. Center around the joint line.
Ankle Region	Include the medial and lateral malleoli and motion rod. Center around the ankle joint.
Images required for transfer	Transfer all Axial bone images of the Hip, Knee, and Ankle including the AP Topogram in DICOM format, to PACS or CD.

Figure. 1. Scan Location and Characteristics

2. POSITIONING THE PATIENT

⚠ *During the scan, the pelvis, leg, and Motion Rod must remain motionless.*

1. Position patient supine, feet first with foot secured in an upright position with a rolled towel or blanket wrapped around the bottom of the foot to secure the ankle as shown.
2. Elevate the knee of the patient slightly with a rolled towel or blanket.
3. Wrap the velcro strap one complete revolution around the rod as shown in Figure 2. Do this for both Velcro straps, one at the hip position and one at the ankle position as shown.

Figure 2.

4. Set the Motion Rod on the patient to pass from just proximal of Hip Center to distal of Ankle Center as shown in Figure 3.
5. Adjust the femoral and tibial straps to secure the rod.
6. Verify the rod is in both anterior/posterior and medial/lateral field of views for all scan regions.

The velcro strap must be wrapped around the rod in one complete revolution, before wrapping around the leg. Straps should be snug, but not excessively tight.

Figure 3.

3. CONSIDERATIONS

- Scan patient anytime before procedure (up to 8 weeks in advance)
- Ensure the patient is comfortable and relaxed. This is critical for achieving a motionless scan
- If metallic components are present in the operative leg, it may not be possible to obtain an image of significant quality to support a Mako procedure. If metal components are present in the non-operative leg (e.g. knee components), attempt to isolate the non-operative leg from the scan region.

4. POST SCAN EXAMINATION

The Physician and CT Technologist should verify the following:

- Patient's orientation is correct
- Regions of interest in Figure 1 are visible in dataset
- Scan includes complete femoral head, knee joint and ankle joint
- Image Slice thickness and FOV is correct
- Motion Rod is visible and complete (full circle is present) in all slices
- Bone images in scan image are not degraded by metal-induced artifacts

5. DATA SET TRANSFER

Archive all acquired images onto single CD in DICOM 3 compatible format
Do not include DICOM viewer

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