CT Protocols



The prevention of motion is critical for 3-D imaging and modeling. Instruct the patient on the importance of holding completely still during the scan.

The following instructions are very important. Please read them carefully before scanning.

Scanning the Patient and Technical Factors (for all scanners)

Slice Thickness: See specific protocols.

Field of View: Magnify or zoom image so it fills the entire screen without cutting off any of

the anatomy for imaging. The FOV must not be changed during the scan.

Table Position: The CT couch must **not** be raised or lowered between slices. The X and Y

centering must **not** be altered between slices.

Matrix: Quality images can be obtained from any scan matrix, although a

high resolution 512 x 512 matrix should be used whenever possible.

Algorithm: A standard or soft tissue algorithm with no edge

enhancement must be used. Do **not** use bone algorithm.

Slice Spacing: All slices must be contiguous or overlapping. Slice thickness and table

increment is dependent on anatomy.

Data Collection: We accept CD-ROM in **DICOM** format off all CT machines.

CT Image data (not raw data) is required for patient modeling. Do **not** send hard copy X-rays.

Please contact Suzanne Smeltzer or Monica Crowder with any questions at 1.800.348.9500, ext. 1736 or 1509, or email Suzanne. Smeltzer@zimmerbiomet.com or Monica. Crowder@zimmerbiomet.com.

CT data may be submitted for reconstruction:

 CD-ROM Ship to: PMI Dept./Suzanne Smeltzer 2392 N Boeing Road Warsaw, IN 46582

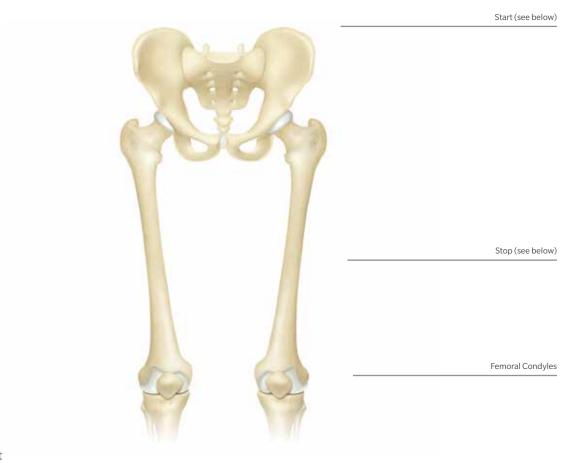
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Primary or Revision Hip/Acetabulum Replacement

Femurs must be positioned so they are parallel to the horizontal plane of the table. Patient needs to be in A/P position with feet inverted.



Start: Top of Iliac crest

Stop*: Mid-femur or below existing femoral

*Perform two femoral condyle slices (to show anteversion) if patient does **not** have an existing implant. Do **not** change FOV or X and Y coordinates.

Slice Thickness and Spacing: 2 mm by 2 mm, 2.5 mm by 2.5 mm, or 3 mm by 3 mm

Field of View: 38 – 44 FOV depending on patient size

Algorithm: A standard or soft tissue algorithm, no bone enhancement

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Acetabulum/Pelvis for Oncology

Position patient in A/P with feet inverted, no rotation. Entire pelvis in FOV.



Start: Top of Iliac crest

Stop: Ending slice just below ischial tuberosity

Slice Thickness and Spacing: 2 mm by 2 mm, 2.5 mm by 2.5mm, or 3 mm by 3 mm

Field of View: 38-44 FOV depending on patient size

Algorithm: A standard or soft tissue algorithm, no bone enhancement

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Knee: Primary or Revision



Slice Thickness and Spacing: 1 mm by 1 mm, 1.25 mm by 1.25 mm, or 2 mm by 2 mm

Field of View: 25–35 FOV depending on patient size

Algorithm: A standard or soft tissue algorithm, no bone enhancement

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Patella / Femoral Implant



Start (see below)

Stop (see below)

Start: 10 cm above joint line **Stop**: 3 cm below joint space

Slice Thickness and Spacing: 1 mm by 1 mm, 1.25 mm by 1.25 mm, or 2 mm by 2 mm

Field of View: 25 FOV depending on patient size

Algorithm: A standard or soft tissue algorithm, no bone enhancement

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Shoulder: Primary or Revision



Start: Above acromion process

Stop*: 15 cm below top of humerus or 3 cm below existing implant

*Perform two humeral condyle slices (to show anteversion) if the patient does **not** have an existing implant. Do **not** change FOV or X and Y coordinates.

Slice Thickness and Spacing: 2 mm by 2 mm, 2.5 mm by 2.5 mm, or 3 mm by 3 mm is acceptable

Field of View: 25-30 FOV depending on patient size

Algorithm: A standard or soft tissue algorithm, no bone enhancement

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Elbow: Primary or Revision



Start (see below)

Stop (see below)

Start: 10 cm above joint line or 5 cm above existing implant

Stop: 8 cm below joint line or 5 cm below existing implant

Slice Thickness and Spacing: 1 mm by 1 mm, 1.25 mm by 1.25 mm, or 2 mm by 2 mm

Field of View: 15–20 FOV depending on patient size

Algorithm: A standard or soft tissue algorithm, no bone enhancement

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Wrist/Hand

Start (see below)

Stop (see below)

Start: Tip of fingers

Stop: 4-5 cm proximal to carpal bones

Slice Thickness and Spacing: 0.625 mm by 0.625 mm, 1 mm by 1 mm, or 1.25 mm by 1.25 mm

Field of View: 15 FOV

Algorithm: A standard or soft tissue algorithm, no bone enhancement

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