IMAGING
GUIDE

LEG CT SCAN

bodycad

Introduction and Purpose

Through its mission, The Pursuit of Orthopaedic Perfection™, Bodycad aims to bring to market personalized restorations designed from a virtual 3D model of the patient's anatomy.

This procedure provides only the information required by Bodycad to design and manufacture personalized restorations.

The procedure described in this document may differ from the procedure used for diagnostic purposes. The physician is responsible for determining whether further tests are required for diagnostic purposes.

It is important to closely follow this guide, as this will produce a more accurate 3D model, and enhance the precision of the personalized restoration. Deviations from this guide may result in an unusable scan and potentially delay the surgery.

Please contact image@bodycad.com if you require more information.

Patient Preparation

– Remove any non-fixed metal prostheses, jewellery and zippers that may interfere with the region to be scanned.
– Make sure the patient is comfortable and instruct them not to move during the procedure. Movement during the procedure may result in an unusable scan and potentially delay the surgery.

Patient Positioning

– The patient must be in a supine position, feet first, and patella pointing forward.
– The knees must be in maximal extension with toes pointing straight up.
– In the presence of a metal implant in the contra lateral knee, elevate the contra lateral knee to prevent metal artifacts from altering the images of the operative knee.

In the Presence of Metal

– Apply any acquisition strategy that may be helpful to reduce metal artifact, such as using thin slice collimation, lowering pitch, increasing kVp, and reconstructing to larger slices of 1.5 mm.
– Provide an additional reconstruction with metal artifact reduction applied.

Table Position

– Set the table height so that the region to be scanned is centered in the scan field.
– **Do not** move the table between slices.
– **Do not** change the X or Y centering between scans, center points must be identical.

Field of View

– Use the smallest FOV possible to completely capture all bones of interest.
– The maximum FOV is 320 mm.
– Scan **all** slices with the same FOV, reconstruction center and table height.
– It is unnecessary to capture all of the soft tissue, only the bony regions are of interest.

No Gantry Tilt
Bilateral Imaging

Note: Unilateral images are preferred. Provide bilateral images only if the patient is scheduled for a bilateral Bodycad procedure.

– The maximum FOV allowed for bilateral scans is 320 mm.
– If both legs cannot be captured in a 320 mm FOV, use a 500 mm FOV, and reconstruct each leg separately in a 320mm or smaller FOV.
– Scan both legs in a single acquisition, while following the above guidelines.

Option 1: Full Leg Scan

Region of Interest

– From below the talus to above the femoral head.

Scanning Parameters

|	
Slice Thickness	0.5 - 1.0 mm
Slice Increment	0.5 - 1.0 mm
kVp	100 - 140
mAs	As given by the automatic system
Field of View	320 mm or smaller
Matrix	512 X 512
Algorithm	Bone Ensure that there is no edge enhancement

5 cm
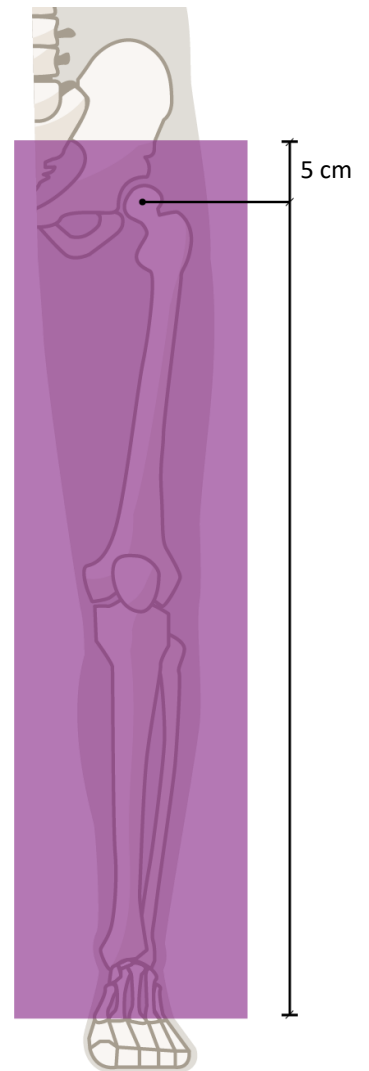
Option 2: Three Joint Scan (hip-knee-ankle)

Regions of Interest

- **Hip :** From above the femoral head to below the lesser trochanter.

- **Knee:** 15 cm above the knee joint to 15 cm below the knee joint (30 cm total).

- **Ankle:** 10 cm above the ankle joint to 5 cm below the ankle joint.

Scanning Parameters

Region	Hip	Knee	Ankle
Slice Thickness	0.5 - 1.5 mm	0.5 - 1.0 mm	0.5 - 1.5 mm
Slice Increment	0.5 - 1.0 mm		
kVp	100 - 140		
mAs	As given by the automatic system		
Field of View	320 mm or smaller		
Matrix	512 X 512		
Algorithm	Bone Ensure that there is no edge enhancement		
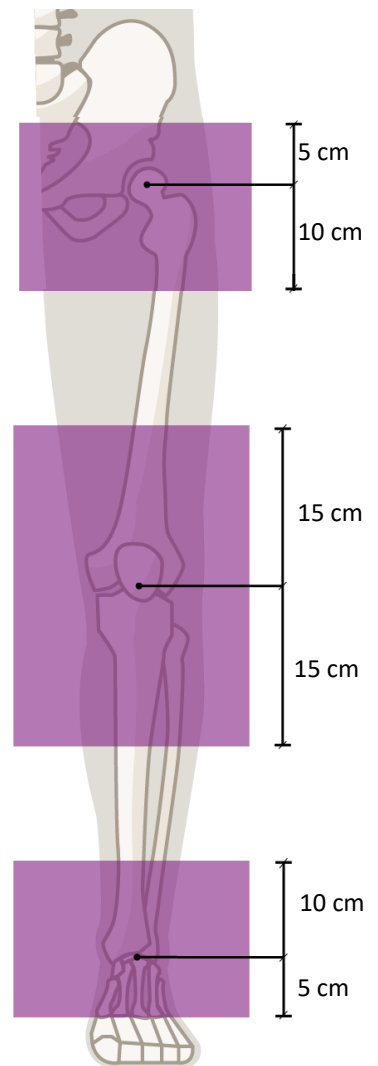
Important: Scan all slices with the same FOV, reconstruction center and table height.

Series to Provide

– Full leg scout from the hip through to the ankle.
– Original axial images of the full leg or hip-knee-ankle.

Transmission of Images

– Provide the complete data set of raw/original DICOM images to the surgeon.
– **Lossy compression is NOT allowed** (ISO_10918_1, ISO_14495_1, ISO_15444_1 or ISO_13818_1).
– Do not send any 3D recons, reformats, viewer software, etc.
– **Important**: Retain a permanent archive (via PACS) copy of the RAW imaging data (as scanned by the original parameters and in the uncompressed format).

Data Anonymization and Privacy

– Be sure that the required rights for transmitting data to Bodycad are respected.
– The patient's name and ID must be kept in the transmitted data.
– Upon receipt of the transmitted data, Bodycad will ascertain the correspondence between the images and the surgeon's prescription, and anonymize the data before the whole process of personalized restoration begins.
– Confidentiality of patient data is part of Bodycad's quality procedure and patient privacy guidelines.

Please direct all questions to image@bodycad.com

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