Fine TTO™ IMAGING GUIDE

KNEE CT SCAN & X-RAY

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 cutting guides.

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 cutting guides. 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.

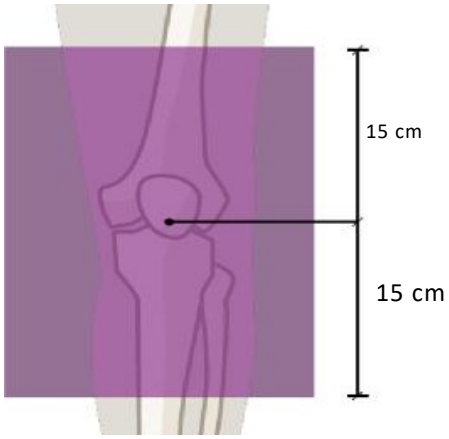
.

To plan a Fine TTO surgery, Bodycad needs minimally a lateral radiograph of the knee at 30 degree flexion AND a CT scan of the knee, with 15 cm above the knee joint distally and proximally.

Lateral flexion 30°

+

Knee CT scan



bodycad

Knee CT SCAN

Patient Preparation

– Remove any non-fixed metal prostheses, jewelry 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

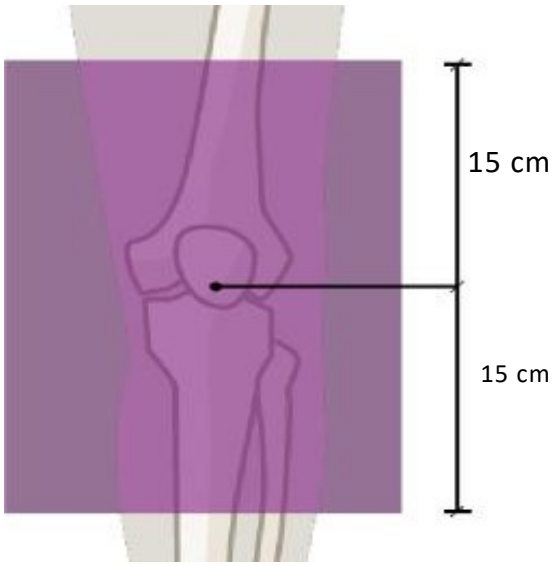
– Use the smallest FOV possible to completely capture all bones of interest.
– The maximum FOV is 320 mm.
– Scan **all** slices with the same FOV, reconstruction center and table height.
– It is unnecessary to capture all of the soft tissue, only the bony regions are of interest.

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

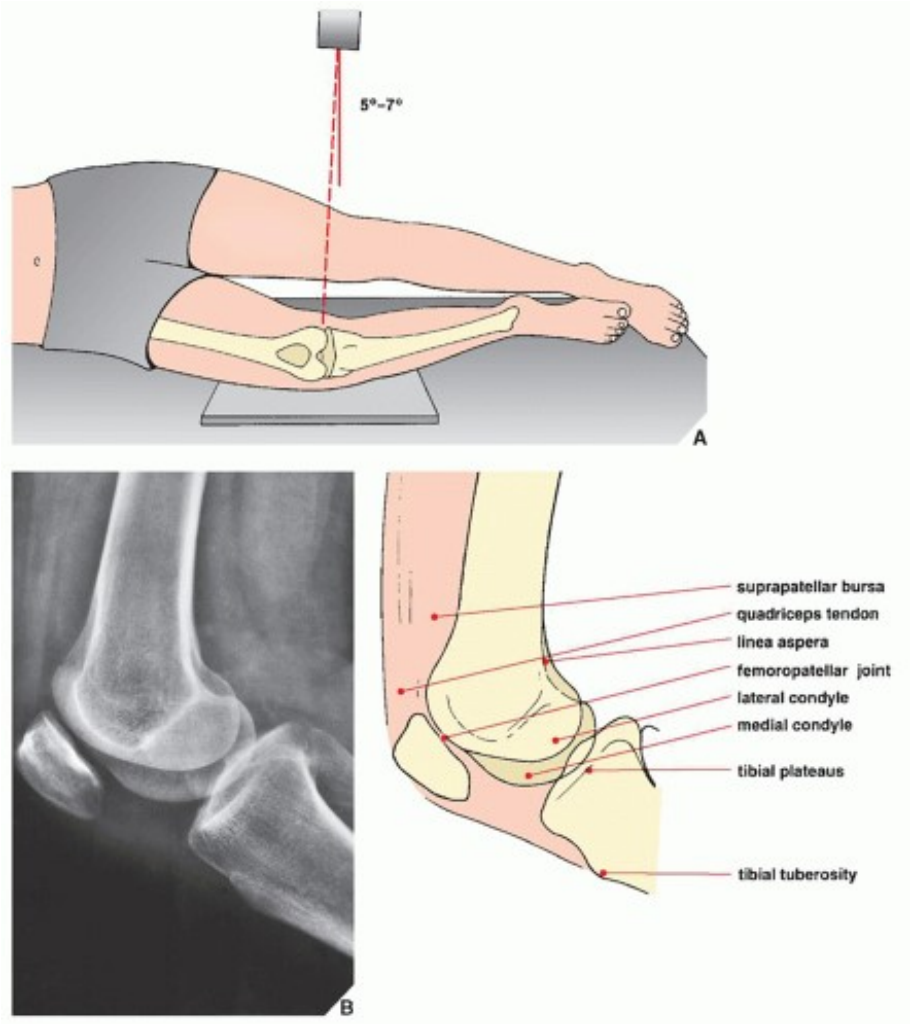
Region	Knee
Slice Thickness	0.5 - 1.0 mm
Slice Increment	0.5 - 1.0 mm
kVp	100 - 140
mAs	As given by the automatic system
Field of View	320 mm or smaller
Matrix	512 X 512
Algorithm	Bone Ensure that there is no edge enhancement



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

Important: Scan all slices with the same FOV, reconstruction center and table height.

LATERAL RADIORAPH AT 30° FLEXION



(A) For the lateral view of the knee, the patient is lying flat on the same side as the affected knee, which is flexed approximately 25 to 30 degrees. The central beam is directed vertically toward the medial aspect of the knee joint with an approximately 5- to 7-degree cephalad angulation.

(B) The radiograph in this projection demonstrates the patella in profile, as well as the femoro-patellar joint compartment and a faint outline of the quadriceps tendon. The femoral condyles are seen overlapping, and the tibial plateaus are imaged in profile. *(ref . https://radiologykey.com/lower-limb-ii-knee-2/)*

Important: It is important to obtain a proper lateral view in which the posterior femoral condyles are overlapped as rotation of the film can obscure the pathological changes *(Sherman et al.)*

Series to Provide

- **Scout images centered on the knee joint**.

- **Axial, sagittal, and coronal images of the knee joint only**, covering the distal femur, proximal tibia, patella, and surrounding soft tissues.

Data Anonymization and Privacy

- Ensure that the required rights for transmitting data to Bodycad are respected.
- The patient name and ID must be retained in the transmitted data.
- Bodycad will anonymize the transmitted data before starting the personalized restoration process. This anonymization adheres to Bodycad's established quality procedures and patient privacy guidelines.

Transmission of Images File Format and Instructions:

- Use only DICOM format without lossy compression.
- Include the images with their parameters, the scout view, additional images, and any relevant notes.

Methods for Data Transmission:

1. **Mail:**
    - Send the labeled CD or DVD to the following address:
      Bodycad PREPTech
      Bodycad Laboratories Inc.
      2035, Haut-Bord Street
      Quebec City (QC) G1N 4R7
      Canada
    - Ensure the CD or DVD is packaged appropriately to avoid breakage during transport.
    -
2. **Online:**
    - Use Bodycad's online tool for sending data: preplink.bodycad.com

Contact Information:

- For shipping instructions and/or account numbers, please contact your PREPTech.
- If you require further information, reach out to us at **preptech@bodycad.com** or call **+1 418 527-1388** and ask for a PrepTech.