



materialise

innovators you can count on



CT SCAN PROTOCOL

FOREARM

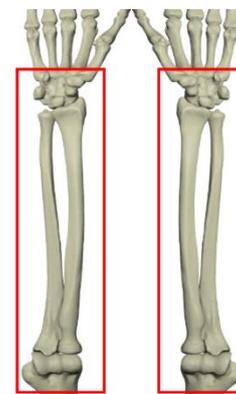
This CT scanning protocol consists of a localizer and a detailed axial scan of the bilateral forearm. The CT scan quality (**with clear bony edges and details**) is critical to the production of accurate patient-specific surgical instruments.

Please contact the Materialise support team if you require further clarification.

DEVIATIONS FROM THIS PROTOCOL MAY RESULT IN AN UNUSABLE SCAN AND DELAY OF SURGERY

Scanning Parameters

Region of interest / Axial Scan	From the elbow to the carpometacarpal joint
	Bilateral - prefer a single acquisition; individual scans are acceptable
Collimation	Slice thickness: 0.625mm or smaller
	Slice increment: Contiguous Slices
	No Gantry Tilt or Obliqueness or Oblique Reconstructions
kVp	90-120 (higher for obese patients or metal hardware in scan region)
mAs	As given by the automatic system
Pitch	Use 1 or smaller
Field of View (FOV)	200mm x 200mm or smaller. Use the smallest FOV possible to capture the required bone regions. Capturing all of the soft tissue is unnecessary.
Matrix	Use a 512 x 512 matrix
Kernel / Algorithm	Bone / Details
Table Position	Area to be scanned should be centered in the scan field. DO NOT raise or lower the CT table between slices, or alter the X or Y centering between scans. Center Points must be identical.
Reconstruction	NO secondary reconstructions, images must be scanned at the given parameters or smaller NO reformatting into coronal or sagittal planes, no MPR's or 3D reconstructions
Data Anonymization	Do not erase patient name and ID- ensure necessary rights are obtained for transfer of data to Materialise. Data will be anonymized by Materialise after cross-check with prescription of the surgeon to ensure the images of the right patient are provided.



General Scan Requirements :

- Remove any non-fixed metal prosthesis, jewelry, and zippers that might interfere with the region to be scanned.
- Make the patient comfortable and instruct him/her not to move during the procedure. If any movement is detected the patient will need to be rescanned as this will prevent the accurate development of the patient-specific model.
- **If possible, scan the forearms in the position of greatest deformity, with both limbs in as close to the same position as possible (ex. full supination to demonstrate subluxation of the radial head).** Otherwise, position the patient prone with arms in front of him/her and with palms facing each other in the neutral position. If this is not possible, position the patient in the supine position.
- Scan forearms with (both) arms above the head and the head out of the FOV, if possible. Make sure the patient's elbows are propped up, if needed, to allow for even scanning within the same plane. Place forearms as close together as possible to fit into the designated FOV. Scan each arm separately if both arms do not fit within the required FOV.

Provide the complete data set of **ONLY** the raw/original/axial DICOM images. **Lossy Compression is NOT allowed** (ISO_10918_1, ISO_14495_1, ISO_1544_1, or ISO_13818_1). Retain a permanent archive (PACS) copy of the RAW data of images (As scanned by the original parameters, uncompressed). We recommend building a "Materialise Forearm" in your CT scanner with the appropriate ranges & parameters.



Legal Disclaimer

Materialise and the Materialise logo are trademarks of Materialise NV. This brochure is provided by Materialise and may be used for informational purposes only. Materialise uses reasonable efforts to include accurate and current information at the date of publication of this brochure. Materialise makes no warranties or representations of any kind as to its accuracy, currency or completeness. Materialise, nor any party involved in creating, producing or delivering this brochure shall be liable for any damages, including without limitation, direct, incidental, consequential, indirect or punitive damages, arising out of access to, use of or inability to use this brochure, or any errors or omissions in the content thereof. Any legal action or proceeding related to this brochure shall be brought exclusively to the Courts of Brussels (Dutch speaking division).

medical.materialise.com