Osteo3d® 3d printing healthcare®

CT Scan Protocol — UIH

For a 3D-printed surgical guide, model or implant

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osteo3d.com/imaging-requirements

AT THE CONSOLE

Slice thickness	**0.625 mm ideal · 1.0 mm maximum**	Above 1.5 mm a scan cannot be used for surgical guides or implants.
Reconstruction increment (interval)	**≤ slice thickness, contiguous**	Overlap improves the result. A larger increment leaves anatomy unsampled.
Reconstruction kernel	**Bone / sharp**	Plus a soft-tissue series. See the kernel table below for your scanner.
Matrix	**512 × 512**	Square matrix. Some scanners default to rectangular — set it manually.
Display FOV	**Smallest that encloses the full anatomy**	250–320 mm for head and neck. Do not clip the region of interest.
kVp	**120 (140 for large patients)**	Use a lower kV only when boosting iodine contrast for a vascular model.
Gantry tilt	**0°**	No tilt, no oblique acquisition.
Compression	**Uncompressed or lossless only**	Lossy compression permanently destroys the data we segment.

BONE KERNEL — UIH

UIH	Sharp

LABEL THE SERIES

Set Study Description to `O3D THIN AXIAL BONE` on the thin bone series so whoever exports later can find it.

CHECK IT BEFORE YOU SEND IT

osteo3d.com/check-scan
Drop the exported folder onto that page and it tells you whether the study is usable before it leaves the department. Nothing is uploaded — it runs in your browser.

EVERY CASE

✓ **Thin slices** — Under 1 mm. 0.625 mm is best. Set the reconstruction increment (interval) no larger than the slice thickness.

✓ **Bone kernel** — Reconstruct a sharp bone-algorithm series. Send the soft-tissue series too.

✓ **Thin axial source series** — Send the thin axial series. A reformat cannot replace it.

✓ **The whole folder, uncompressed** — Send the study as exported — every slice, one DICOM file each. No compression, no password.

✓ **Zero gantry tilt** — Scan at 0°. No tilt, no oblique acquisition.

✓ **Do not edit the metadata** — De-identify if you must. Never change acquisition values.

CANNOT BE USED IN PLACE OF THE AXIALS

✗ Screenshots or Secondary Capture images
✗ 3D, VRT or volume-render series
✗ Coronal or sagittal reformats instead of the axial series
✗ The scout or localiser only
✗ The soft-tissue series only
✗ The thick reporting series only
✗ A report PDF, JPEG images, or an AVI cine
✗ Lossy / JPEG-compressed DICOM

Nothing needs to be deleted — send the complete study as exported.

No extra radiation. It is generated from raw data you have already acquired and costs the patient no additional radiation.

SENDING IT TO US — WHERE MOST UNUSABLE DATA IS CREATED

1. Export from the source series — never from a 3D, MPR or reformat view.
2. Format: DICOM, one file per slice ("multi-file", or "set of single frame DICOM files"). Not JPEG, BMP, PDF, video, or "save image".
3. Compression: uncompressed, none, or lossless. If asked for a ratio, choose 1:1 on X, Y and Z.
4. Range: every slice in the series. Do not sub-sample and do not crop the range.
5. Do not bundle a viewer application, and do not password-protect or encrypt the archive.
6. Zip the folder and upload the zip, or upload the folder directly.
7. Include the thin bone-kernel axial series. Include the soft-tissue series alongside it.

CBCT

ACCEPTABLE FOR

✓ Tooth-borne dental implant guides
✓ Gross craniomaxillofacial anatomical models
✓ Orthognathic planning where bone morphology, not density, drives the plan

MEDICAL CT REQUIRED FOR

✗ Load-bearing titanium patient-specific implants
✗ Condylar, temporal bone and other fine-detail anatomy
✗ Any case where tissue density or Hounsfield values inform the design
✗ Cranial flap moulds and cranial helmets

Voxel size 0.3–0.4 mm or smaller, isotropic.

KEEP THE RAW DATA

Please retain the raw scan data for at least 14 days. If anything is wrong with the export, a retained raw dataset lets us fix it by re-reconstructing — with no repeat scan and no additional dose to the patient.