IMAGING PROTOCOL

for dental rehabilitation

CBCT + intraoral scan + occlusion — all required

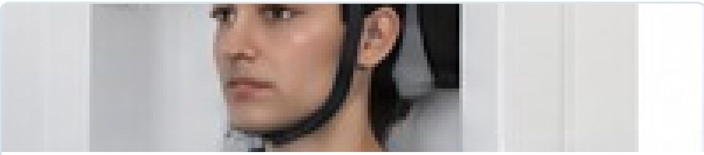
ACCURACY · FIT · FUNCTION

Dental rehabilitation is planned from the CBCT and the intraoral scan together — the bone from the CBCT, and the tooth surfaces and bite from the scan.

1 CBCT ACQUISITION

GENERAL PRINCIPLES

- FOV covering the arches / jaws of interest
- High resolution — small voxel for the dentition
- Patient still — avoid any motion during the scan
- Teeth slightly apart (light disocclusion)
- Metal-artefact-reduction protocol enabled



Stable head position — arches in the field of view

RECOMMENDED

Small voxel size for the dentition; keep the patient still and the teeth lightly apart so the crowns are clearly imaged.

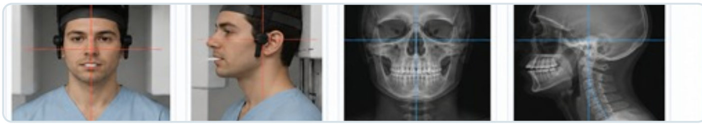
IMPORTANT — METAL ARTEFACT REDUCTION

Enable the metal-artefact-reduction protocol — fillings, crowns and implants otherwise cast streaks across the teeth and alveolar bone.

2 RECOMMENDED CBCT PARAMETERS

PARAMETER	CBCT (CONE-BEAM)	CT (SPIRAL)
FOV (field of view)	Arches / jaws of interest	Arches / jaws of interest
Voxel / resolution	0.15–0.3 mm	0.3–0.6 mm
Matrix	≥ 512 × 512	≥ 512 × 512
Orientation	Axial, preferably	Axial, preferably
Contrast agent	NO	NO
Scan time	per device protocol	per device protocol
Metal-artefact-reduction protocol	**ENABLED**	**ENABLED**

2.1 — SCAN VERIFICATION (SCOUT)



Arches covered · Teeth slightly apart · No motion · Stable position

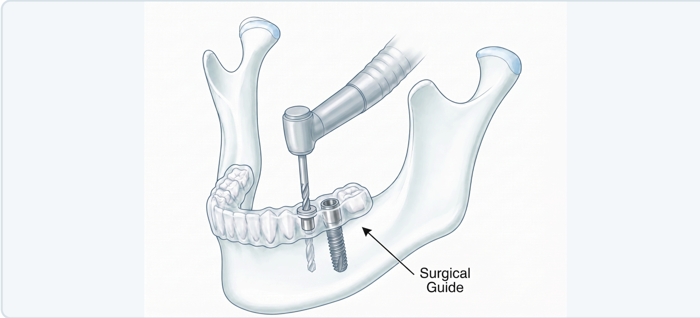
CBCT shows the bone — it does not capture the tooth surfaces or the bite precisely. The intraoral scan provides those.

3 DENTAL DATA (REQUIRED)

INTRAORAL SCAN + OCCLUSION — REQUIRED

Always provide a dedicated scan of:

- **Upper arch** — full maxillary scan
- **Lower arch** — full mandibular scan
- **Occlusion** — both arches together, in the bite



CBCT bone + intraoral scan → guide / restoration design

3.1 — HOW TO CAPTURE

INTRAORAL SCAN

Preferred — STL directly usable, reproducible.

PLASTER MODELS

Scanned optically · include the bite registration.

3.2 — FILE FORMATS

CBCT / CT	`.dcm · .DICOM (uncompressed)`
Intraoral / model scan	`.STL · .PLY · .OBJ`
Occlusion (bite)	`.STL — both arches`

GENERAL RECOMMENDATIONS

- Match the CBCT and the scan to the same dentition
- Provide both arches and the occlusion (bite)
- Avoid lossy compression on export

FOR OPTIMAL RESULTS

- Follow the CBCT parameters and keep the teeth apart
- Provide both arches and the occlusion
- Match the scan and CBCT to the same dentition

SIMPLIFIED WORKFLOW

CBCT bone & roots + **Intraoral scan** teeth + bite → **Design** guide / restoration → **Manufacture** & fit

KEY MESSAGE

Dental planning depends on two essentials:

1. A clean CBCT of the bone

2. An intraoral scan of both arches and the bite