

BMI BIOMEDICAL MODELING INC.
CT SCANNING GUIDELINES for BIODENTAL MODELS™

Biomedical Modeling Inc. uses advanced computer techniques to create three-dimensional polymer BioDental Models which physically replicate the anatomy captured on a CT scan. BMI BioDental Models are powerful tools for planning and placing dental implants. Follow these guidelines to help ensure that your data will be of the high quality required for your patient.

First scan the **Radiographic Scanning Guide** (denture replica or bite registration with gutta percha markers) **seated on a stone or plaster cast**. You may place the guide and stone cast on a foam cushion or in a styrofoam cup to hold it off the gantry.

Second Scan: Rinse the guide and have the patient place it in his/her mouth. Make sure the guide is properly seated on the patient's gums or teeth. [Note: If a scanning guide is not available, please use a plastic impression tray or a soft retractor provided by BMI to hold tongue and cheeks away from teeth and gums. A wax spacer may be used to separate upper and lower teeth if no retractor is available.]

1. **Artifact Reduction:** Provide both soft tissue (standard) and bone algorithms. Have the patient remove any jewelry, removable appliances, etc. and use metal artifact reduction techniques available on your scanner.
2. **Patient Orientation: Do not use gantry tilt.** Align the **occlusal plane** with the axial plane. This will generally require separate scans for mandible and maxilla. If a complete maxillofacial scan is required, align axial plane with the maxillary occlusal plane.
3. **Patient Immobilization:** Any movement of the patient during the scan will distort the Biomodel. Pillows and tape may be used to support and immobilize the patient's head comfortably. The integrity of the total scan is more important than any individual slice.
Patient motion will necessitate repeating the scan.
4. **Scanning Field of View (SFOV):** must contain the entire region of interest with at least a 5mm margin. However, the SFOV should not be more than 10mm larger than the region of interest, in order to achieve the highest spatial resolution possible.
5. **Spatial Resolution: Slice thickness must be as small as possible.** The slice thickness and spacing (pixel size) during the scan should be no greater than **0.625 mm/0.625 mm**. Caution: acquire data at 0.625 mm/0.625 mm or smaller; do not reformat.
6. **Media Format: Uncompressed DICOM** data of **BOTH** scans can be sent on CD or by FTP. CDs should be labeled clearly with the patient name, scan date, physician name, and any other pertinent information. For FTP (internet) call us to set up a secure account for you.

The staff of Biomedical Modeling Inc. thanks you for your attention to these guidelines. Please feel free to call Khaled at: **1-888-246-6633 (1-888-BIOMODEL)**.

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