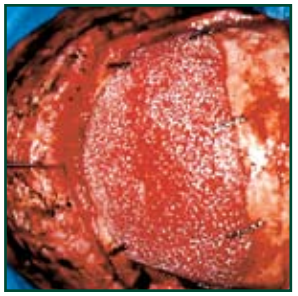
HTR®-PMI CT-Scanning Protocol

Exceptional Results

Pre-Operative



Intra-Operative

Post-Operative

Thank you for your attention to this special scanning protocol for HTR-PMI cases. This protocol should be followed for scans indicated for cranial reconstruction with Biomet Microfixation's HTR-PMI material. Medical Modeling and Biomet Microfixation work together in the design and fabrication of the implant. The CT scan is the most important part of the process and your adherence to the guidelines below is greatly appreciated. Please do not hesitate to contact Medical Modeling toll free at (888)-273-5375 with any questions or prior to using this protocol for the first time.

Please keep in mind the following key points:

- Acquire scans at a high spatial resolution. Series should be acquired with thin, contiguous image slices (<2.0mm, 0.75 – 1.25mm is ideal) and as small a field of view (FOV) as possible while still including the patient's external contour. Patient must remain completely still through the entire scan. If patient motion occurs the scan must be restarted.
- Scan 2cm above and below the area of interest. For cranial defects, please include entire defect plus 2cm above and below the defect. If unsure, please scan from hard palate through the skull vertex.
- Image distortion from patient motion will severely compromise the accuracy of a model. Please ensure that scans are free from motion artifact.
- Do not use a gantry tilt in scanning patients.
- Image artifact caused by metallic implants can obscure anatomy of interest. Please take steps to minimize artifact from the presence of metal. It is useful to position the patient so that the occlusal plane is parallel to the image plane (see figure). This can help to limit artifact from metallic dental implants to the region around the teeth.
- Archive the entire study, preferably in DICOM format, to a removable medium such as Sony/MaxOptix optical disk, Pioneer optical disk, 4 or 8mm DAT, or CD-R. Many of the older proprietary image formats (for example GE Advantage, Picker, Phillips) can be supported but the most reliable method of image transfer is DICOM format on CD-R. It is also possible to transfer image data via computer network. Please contact our technicians at (888) 273-5375 for details on setting up the means for DICOM Internet transfer.

Example image protocols for cranio-maxillofacial study:

*Acquisition:	Helical
*FOV:	25.0cm
*Gantry tilt:	0 degrees
*Scan spacing:	0.75 – 1.25mm
*Slice thickness:	0.75 – 1.25mm
*Algorithm:	Standard (not bone or detail)
*Pitch:	1:1

Variations on the example are acceptable as long as the above key points are followed. If using a multidetector scanner please be sure to reconstruct images at thin sections (<2.0mm, 0.75 – 1.25mm is ideal).

If using a single slice scanner please do not reconstruct images to slices that are thinner than the original acquisition. This simply interpolates between slices and does not improve the resolution of the exam. If using a single scanner, please scan the patient with the thinnest slice thickness possible (<2.0mm, 0.75 – 1.25mm is ideal).

Medical Modeling can import image data from most mainstream CT scanners and PACS systems and most storage media. Please call us at (888)-273-5375 if you have questions about the inability to read images from your equipment.

DICOM Internet Transfer

Please call to set up an account for pushing DICOM images over the Internet to our server.