

Custom Craniofacial Prosthesis CT Scanning Protocol

This CT scan will be used to create a patient-specific anatomical model and prosthesis. The quality of the CT scan directly impacts the quality of the prosthesis. Please do not hesitate to contact OsteoSymbionics at 877-881-8699 if you have any questions or concerns regarding this protocol.

Key Requirements

- **Avoid patient movement.** Image distortion from motion artifact will severely compromise the accuracy of the model and prosthesis. If patient motion occurs the scan must be restarted.
- Do not use gantry tilt.
- Acquire scans at a high spatial resolution. See details below.
- Archive the entire study, preferably in uncompressed DICOM format, to a removable medium such as CD-ROMs. It is also possible to transfer image data via a secure computer network. Please contact OsteoSymbionics at 877-881-6899 for instructions.

CT Scan Parameters

<i>Acquisition</i>	No contrast is needed.
<i>Method:</i>	The data must be acquired in a single pass, without pause. For older CT scanners, use slice-by-slice acquisition. CT scanners may be able to acquire the data in a single spiral acquisition. For spiral scans, use a fine pitch. <i>Do not use multiple spiral acquisitions. Multiple spiral acquisitions often have gaps between them, and sometimes there are long time delays for tube cooling in between.</i>
<i>Slice Spacing / Thickness:</i>	No gaps and no overlap. Slice thickness should be the same as slice spacing. 1.0mm or smaller is ideal. 1.5mm is acceptable. 2.0mm is useable.
<i>Slice Range:</i>	Should cover the range from air above the skull to 2cm below the defect edge, encompassing the entire defect.
<i>Field of View:</i>	As small as possible, but large enough to encompass the entire skull.
<i>Gantry Tilt:</i>	None.
<i>kVp:</i>	Should be approximately 125kV.
<i>mAs:</i>	Sufficient for soft-tissue discrimination.
<i>Reconstruction Method:</i>	Use a standard filter. <i>Do not use a bone filter.</i> For spiral acquisitions, use one of the CT scanner's default slice spacing. <i>For example, if a spiral acquisition has a step size of 0.625mm, reconstruct at 0.625mm or 1.25mm increments. In this case, 1mm increments would introduce artifacts.</i>

Ver 1.

