# Facial - Orthognathics, reconstruction and trauma

Email: CMFcustomizedimplants@stryker.com

# Protocol for medical CT scanners

# **Patient positioning**

p3		
Gantry tilt	0° Gantry Tilt	
Head alignment	Align occlusal plane parallel to gantry. Position patient to avoid as much artifact as possible. Keep jaws slightly separated (use a bite block if available).	
Scan length / FOV		
Scan length	Encompass the entire mandible	
Field of view	Select field of view to include all surrounding anatomy (20.5cm recommended)	
Acquisition		
Slice thickness	Maximum = 1.5 mm (1 mm preferred)	
Beam collimation	Width and detector configuration necessary to achieve actual slice thickness	
Table increment	Constant Table increment, no gaps. Smaller than or equal to slice thickness	
Sequential scanners	No overlap and no gap	
Single-slice helical scanners	Beam pitch = 1	
Multi-slice helical scanners	Beam pitch < 1 (GE: High Quality; Toshiba: Detail)	
Pixel type	Square	
Algorithm (kernel)	Process images with both standard and bone algorithms	

No oblique angle of locator/survey lines



Warning: Do not post process to alter slice orientation or thickness

Warning: Do not post process to alter slice orientation or thickness

Axial slice orientation

# **Protocol for CBCT scanners**

#### **Patient positioning**

Slice orientation

Laser guides	No oblique angle of laser guide lines	
Head alignment	Remain straight in neutral position	
Scan FOV		
Field of view	Encompass the entire mandible.	
Acquisition		
X-Ray beam parameters	Use optimal parameters for your machine to provide the best scan with acceptable radiation dose levels	
Scan time	Longest available	
Voxel size	0.2 – 0.4 mm	
Slice orientation	Axial slice orientation	
Algorithm (kernel)	Process images with both standard and bone algorithms	





# **Key points**

Patient movement	Avoid patient motion. If the scan shows motion artifacts, the scan cannot be used.
Series	CT: Original/Primary/Axial
Series ID	All images of a scan should be stored in one series.
File format	DICOM format. No raw data. Do Not Compress. Do Not Format for Viewer Programs.
Data archiving	Archive only the relevant examination(s) in uncompressed DICOM (CD-R preferred).
Data storage	Recommendation: Save raw data for at least 14 days after scan

# **Guidance for pediatric scanning**

Exposure to ionizing radiation is of particular concern in pediatric patients. Check if existing scans meets the requirements for Stryker implant design. To avoid rescanning of patients, follow the parameters given in the Stryker Scan Protocol and use reduced dose and child-sized protocols where appropriate. Stryker recommends consulting the instructions for use provided by your imaging device manufacturer, and limiting radiation dosage to the amount clinically necessary. Statutory national Diagnostic Reference Levels (DRLs) for pediatric as well as for adult CT examinations must be complied with. Limit the dose by reducing Tube Voltage (kV) and the Tube-Current-Time product (mAs), consider patient size and activate Tube Current Modulation and/or Automatic Exposure Control if applicable and indicated for pediatric patients.

### Craniomaxillofacial

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Stryker Leibinger GmbH & Co. KG Bötzinger Straße 41 79111 Freiburg Germany

