

# Straumann Smile in a Box™

## Scanning Protocol Guide



### SMILE IN A BOX™ DATA ACQUISITION QUICK GUIDE

Smile in a Box™ planning begins with data acquisition, two file types are required to begin a case:

1. DICOM file generated by a Cone beam computed tomography (CBCT) scan.
2. STL file generated from an intraoral scan. Note that the Smile in a Box™ service does not accept analog wet impressions - if you do not have access to an intraoral scanner a dental lab may be able to create an STL file from your traditional impression using a benchtop scanner.

The protocol for these scans is dependent on the clinical situation.

#### EDENTULOUS PATIENT

- Acquire a dual scan CBCT with the patient in occlusion:
- Scan 1 – CT scan of the patient wearing the denture (with radio-opaque markers)
- Scan 2 – CT scan of the denture alone (still with the same markers) on a non-metallic stand. Adjust the exposure as necessary to ensure the outline of the denture is visible.

**Important:** *the accuracy of the Smile in a Box™ plan is dependent on a good denture fit.  
It may be necessary to reline or replace the patient's current denture if it does not fit properly.*

#### Quick tips:

- If a reline is needed, please use a hard reline
- Avoid using a denture than contains any metal
- Optionally, you can provide an STL of the denture
- A clear acrylic duplicate of the denture is ideal for this type of scan
- Provide the files in multi-slice DICOM format

#### DENTATE PATIENT (3 OR MORE TEETH)

Two different types of scans are required for a dentate patient:

1. CBCT of the patient (NOT in occlusion)
  - During the CBCT scan separate the arches using anything that is not radio-opaque – for example cotton rolls.
  - Export the resulting scan in multi-slice dicom format
2. IOS scan of both arches including the bite registration information
  - Export the resulting data in STL format (upper jaw, lower jaw and bite registration)



## TIPS & TRICKS FOR CLEAR SCANS

### CBCTS

- If possible verify the quality of the scan before sending the patient home
- Use CBCT scans that are less than 4 months old
- Take advantage of your CT scanner's "scout view" and "dry run" functionalities to confirm the patient's positioning in relation to the field of view and his/her and ability to remain immobile during the acquisition
- Set Gantry tilt to none/ 0 degrees
- Set slice thickness  $\leq 0.4\text{mm}$
- Ask patient to remove jewelry which can cause scatter
- Ensure patient is completely still during scanning (patient should avoid swallowing)
- Use a surgical spreader or cotton rolls to separate the lips from the arch.  
Spreading the cheeks, lips and tongue as much as possible ensures a nice clear scan.

### IOS SCANS

- We strongly recommend that you visually inspect your STL files before you submit them to us.  
Our favorite STL viewing application is netfabb Studio Basic, which is available free for Windows, Mac and Linux.  
Other options include MiniMagics and FreeCAD.
- Capture more accurate bite scans by including as much of the occlusion as your scanner allows.



For further information visit:  
[www.smileinabox.com](http://www.smileinabox.com)



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