

mySimplant[®] Planning Service Scan Guidelines – Fully edentulous case

1. Preparing 3D scan (share with your dental laboratory)

1.1 Create scan prosthesis

The scan prosthesis is an existing removable prosthesis or a radiolucent duplicate of the diagnostic tooth set-up with eight Dual Scan Markers integrated or glued onto the surface.

The scan prosthesis is used to visualize the desired prosthetic end goal and to design the Simplant Guide.



How to create a scan prosthesis:

Step 1: Check the existing scan prosthesis.

An existing prosthesis can be reused when three conditions are met:

1. the tooth set-up represents the end goal.
2. there are no metal parts, or metal parts can be removed for the scan.
3. the prosthesis fits well or can be relined to fit well in the mouth of the patient.

If the above criteria are not fulfilled, a radiolucent duplicate of the diagnostic tooth set-up has to be created by a dental laboratory.



Step 2: Create eight small, superficial cavities, well spread (vertically, bucco-lingually and mesio-distally) over the prosthesis.

Step 3: Dispense a drop of radiolucent resin (e.g. Triad[®], Dualine[®]) and submerge a Dual Scan Marker. Place the resin with the marker in a cavity. If necessary, light cure to reduce curing time.

Repeat this step for all Dual Scan Markers.



IMPORTANT: Scan prosthesis should be radiolucent, free of metal.

1.2 Prepare bite index

A bite index stabilizes and separates the jaws when scanning the patient. Scans showing jaw movement cannot be used for designing a guide.

How to create a bite index:

- Apply the radiolucent material (e.g. Aquasil Bite) onto the patient's occlusal surface.
- Have the patient close his or her mouth, but not completely.
Thickness of bite index: 3-5 mm.
- Trim excess material with a sharp instrument.

Tip! Do not throw away the bite index after the scan is taken, the bite index can be reused to accurately position the Simplant guide.



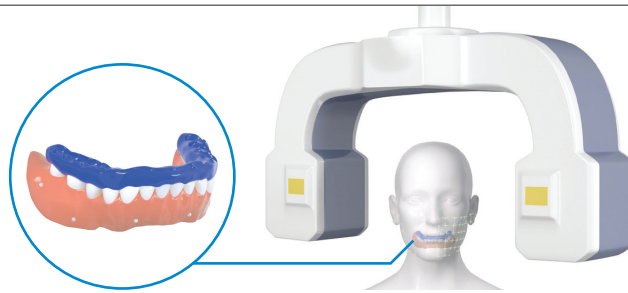
2. Taking a 3D scan (share with your radiologist)

The CT or cone beam scan provides information about the bone, teeth and other anatomical structures. It also provides information about the patient's soft-tissue and the envisioned prosthetic setup.

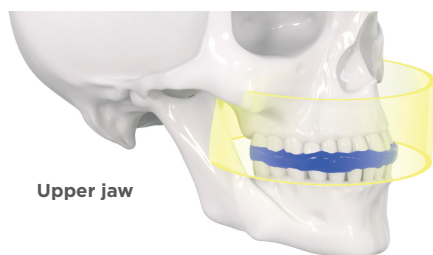
2.1 How to take a Dual Scan:

Scan 1

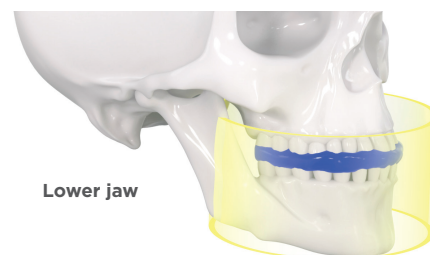
- Scan patient wearing the bite index and scan prosthesis with Dual Scan Markers.



- The complete upper or lower jaw including the bite index and part of the opposing jaw should be in the field of view. This will help you to evaluate the esthetics during the planning review. Expanding the field of view until the osteomeatal complex will help you evaluate potential sinus pathologies.



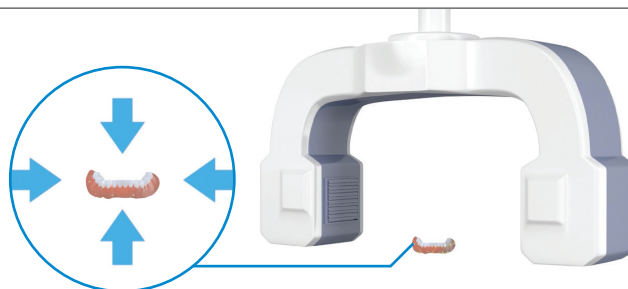
Upper jaw



Lower jaw

Scan 2

- Scan prosthesis alone, in the same left/right, top/bottom position as during Scan 1.



- The material used for supporting the prosthesis must be at least more radiolucent than the prosthesis itself. Polyethylene and polyurethane foam materials are a good example of materials that can be used when a cone-beam scan is taken.

3. Scan settings (share with your radiologist)

3.1 Cone beam scanner:

- Scan images must be provided in DICOM format.
- To obtain optimal image quality check your specific DICOM export protocol on the following page under the guidelines section:
<https://implants.dentsplysirona.com/en/guided-surgery/simplant/simplant-academy.html>
- If there is no export protocol available for your cone-beam scanner, Simplant recommends to save the DICOM images with a slice thickness of 0.3 mm or 0.4 mm.

3.2 CT scanner:

- Matrix 512 x 512.
- Slice thickness between 0.4 and 0.8 mm.
- Variable slice thickness is not allowed.
- Slice increment between 0.3 and 0.5 mm.
- Gantry tilt 0°.
- Only the axial images are required.
- The images must be saved as DICOM images.