

Dual Scan

guidelines for taking a dental scan for Simplant®

This document describes the guidelines for a Dual Scan that is taken for the purpose of ordering a Simplant project and/or a Simplant Guide. These guidelines are preferably transferred to the radiology department that is not yet familiar with the procedure.

Do not forget to instruct the patient on how to correctly position the bite index and scan prosthesis. Make sure you also include the prescription form.

Overview of the procedure:

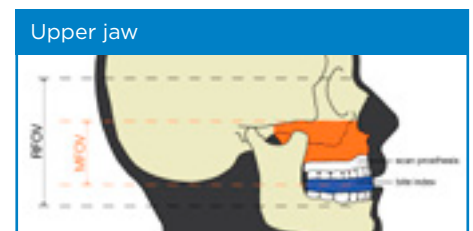
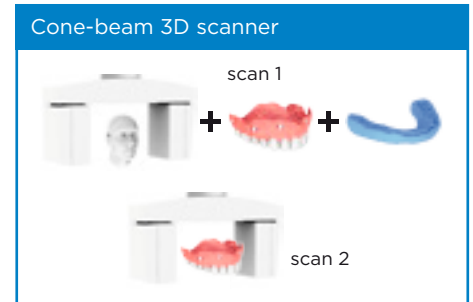
The Dual Scan procedure can be used with both CT and cone-beam 3D scanners. A Dual Scan can only be taken when the patient has a radiolucent scan prosthesis and bite index. If one of them is missing, the scan will be useless!

First Scan (Patient Scan)

- The first scan is taken of the patient wearing the radiolucent prosthesis with Dual Scan Markers and radiolucent bite index. The bite index is used to stabilize the prosthesis and jaws during the scanning procedure.
- Positioning of the patient is comparable to a standard dental scan. Make sure the transaxial slice plane is parallel to the occlusal plane!
- The upper and/or lower jaw including the prosthesis should be fully in the field of view (MFOV).
- A full arch scan is required to fabricate a Simplant Guide.
- If required, the field of view can be enlarged (RFOV). Partial scanning of the opposing jaw will help you evaluate the occlusion during the planning procedure (upper and lower jaw). Expanding the Field of View until the osteomeatal complex will help you evaluate potential sinus pathologies (upper jaw only).

Second Scan (Prosthesis)

- It is very important to position the prosthesis in the same way as it was positioned in the patient's mouth during the first scan. This means that the left/right and top/bottom orientation should be correct (= same as in scan 1).
- The material used for supporting the prosthesis must at least be 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 3D scan is taken.
- A cardboard box can be used to secure the prosthesis in a vertical position when a CT scan is taken.



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Scan settings

- The second scan is taken of the prosthesis alone, applying the same general settings that were used for obtaining the first scan. However, to obtain a very accurate digital duplicate of the prosthesis, a higher resolution is allowed.

CT scanner:

Matrix 512 x 512
Slice thickness between 0.4 and 0.8 mm
Slice increment between 0.3 and 0.5 mm
Gantry tilt 0°

Cone-beam 3D scanner:

High resolution

Reconstruction of the images

CT scanner

- Use a proper image reconstruction algorithm to obtain sharp reformatted images where you can locate internal structures such as the nervus alveolaris inferior. Use the sharpest reconstruction algorithm available.
- Only the axial images are required, no additional reformatting required.
- The images should be saved as DICOM images. Make sure the DICOM images of the patient and scan prosthesis are saved in a separate folder.
- To easily distribute or convert your images, go to DentalPlanit at www.dentalplanit.com

Cone-beam 3D scanner

- You can download your cone-beam specific guidelines at www.simplant.com
- Only the axial images are required.
- The images should be saved as DICOM images. Make sure the DICOM images of the patient and scan prosthesis are saved in a separate folder.
- To easily distribute or convert your images, go to DentalPlanit www.dentalplanit.com

For more information, look for your local Customer Service team at www.simplant.com

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