



Digital Implant Treatment Planning

Utilizing SimPlant

Fully Edentulous Cases

Introduction

Through 3-D imaging and virtual software, you have a tremendous amount of information to plan your implant cases, including the patient's anatomy and the ideal prosthetic positions of the teeth to be replaced. Our Digital Implant Treatment Planning service allows you to easily integrate this technology into your practice.

This brief guide is intended to walk you through the Digital Treatment Planning and Guided Surgery process utilizing SimPlant. This system has an open architecture. Most implant systems available on the market can be planned with SimPlant software. SurgiGuides can be Tissue- or Bone-Supported. SurgiGuide options include:

- The Classic SurgiGuide consists of a guide for each drill diameter.
- The Universal SurgiGuide includes one guide (Fig. 1). Keys for each diameter drill slide into the sleeve(s) in the Universal SurgiGuide. A Universal SurgiGuide Kit from Materialise is required.
- A SAFE SurgiGuide (one guide) is available for use with Astra Tech Facilitate, Biomet 3i, Straumann Guided and NobelGuide Surgical Kits.

Important: The drill lengths for Guided Surgery are longer than for conventional implant surgery because you are going through a SurgiGuide. The drill depth for each implant will be listed on a Surgical Guideline that comes with your SurgiGuide (Fig. 2). The depth is determined by three numbers: the length of the planned implant + the height of the SurgiGuide sleeve (5 mm) + the prolongation area (the distance from the bottom of the sleeve to the top of the implant). **The patient's vertical opening should be evaluated to ensure he or she is a candidate for Guided Surgery.**

A critical step in the SimPlant process is the accurate fabrication of the Scan Appliance (Fig. 3a, 3b). A Scan Appliance is required for a Tissue-Supported SurgiGuide as well as for all dual scans. This appliance, worn by the patient during the CT scan, sets the ideal position of the teeth to be replaced.

- The dual Scan Appliance is clear acrylic with gutta-percha markers.
- The single Scan Appliance for a Tissue-Supported SurgiGuide is 20 percent barium sulphate mix for the teeth and 10 percent for the base. The Bone-Supported SurgiGuide Scan Appliance is processed in a 20 percent barium sulphate mix with a clear base, or it can be 20 percent for the teeth and 10 percent for the base.

Submitting a Digital Rx

Our secure online portal allows you to easily submit your Rx and CT scan files. You can also access all information related to your case, including a viewer version of your digital implant plan, through your online account. To login, visit inclusivedental.com (Fig. 4).

- Select "Treatment Planning" on the homepage, then "Dentist" under "Submit Digital Case."
- Sign in to "My Account" (Fig. 5). To set up your online account, please call Customer Service at 800-854-7256.
- Fill out your Digital Rx (Fig. 6), including how you will be sending your CT scan files.
- Print Digital Rx and include it with your impressions and bite registration when ordering a Scan Appliance.

Note: You will receive an e-mail notification of your submission.



Fig. 1 Universal SurgiGuide with Fixation Screw sleeves and Universal SurgiGuide Kit

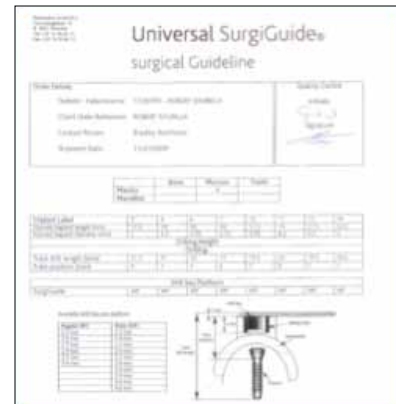


Fig. 2 Surgical Guidelines



Fig. 3a Dual Scan Appliance



Fig. 3b Single Scan Appliances



Fig. 4 Start by logging on to our website.



Fig. 5 Sign in to "My Account."



Fig. 6 Fill out Digital Rx.



Fig. 7 Take preliminary impressions.



Fig. 8 Trial Denture

■ First Appointment

- Preliminary impressions
- Take a full-arch impression including the palate and vestibules.
- Take an impression of the opposing dentition (or denture) as well as the denture to be replaced.
- Print Digital Rx and include it with your case.

■ Second Appointment

Jaw Relation Records

- Seat the bite block (Fig. 7).
- With the patient seated, use conventional denture technique to achieve accurate jaw relation records.
 - a. For maxillary cases, shape the rim for lip contour — place a small amount of vaseline on the labial aspect of the wax rim and confirm.
 - b. With the patient facing you, mark the midline, high lip line and corners of the mouth in the wax rim. Move the central incisors as necessary. From a profile view, evaluate the mid-face support.
 - c. Determine centric relation and the vertical dimension of occlusion.

Note: The patient's existing denture should be evaluated and can be utilized as a benchmark in determining the new VDO.

 - i. Place a dot with an indelible marker on the tip of the patient's nose and chin.
 - ii. Have the patient lick their lips, swallow, then relax their jaw. Measure the distance between the two dots. Repeat this procedure three to four times until you obtain a consistent vertical dimension of rest measurement.
 - iv. Have the patient bite together gently. The measurement should be approximately 3 mm less than the vertical measurement at rest.
 - v. Adjust the rims, if necessary, so they meet evenly.
 - vi. There should be a 2–4 mm speaking space between the rims when the patient pronounces "s" sounds (e.g., Mississippi, sixty, sixty-one, etc.). The incisal edges of the central incisors should lightly touch the lower lip during "f" sounds (e.g., forty, forty-one, etc.).
 - d. Once the VDO and a verifiable, repeatable CR are established, inject bite registration material onto the top of the wax rim and into the notches on the bite block. Have the patient bite together gently, but completely.
 - e. Select the shade and mold of the denture teeth. A study model of the patient's existing denture can be used as a reference regarding the size and shape of the new teeth.

■ Third Appointment

Trial Denture Try-in

- Seat the Trial Denture (Fig. 8).
- Evaluate CR, VDO, occlusion, esthetics/shade, tooth arrangement and phonetics including "f" and "s" sounds, as well as the midline. Change the set-up if necessary or note the requested changes on the lab Rx. If CR is incorrect, a new bite registration should be taken.

■ Fourth Appointment

Try-in Scan Appliance and Scan Index

- Seat Scan Appliance and verify fit. Instruct the patient to close into the Scan Index.

Note: The Scan Index is a bite registration of the Scan Appliance to the opposing dentition. It is designed to keep the Scan Appliance completely seated during the patient's CT scan.

- Send the patient for a CT scan (Fig. 9). Include a copy of the SimPlant scanning protocol with your radiographic Rx. A copy of the scan protocol is available on the SimPlant section of our website.

Important: Ensure the Scan Appliance is completely seated during the patient scan.

■ Submitting DICOM Folders

- Click on the link in the e-mail notification verifying receipt of your Digital Rx. Upload the folder containing the patient's DICOM files (Fig. 10).
- Click on "Browse" and locate the DICOM folder.
- Click "Attach."
- Click "Send."

■ Web Conference

Once the draft of your plan is prepared, you will be contacted by the Digital Treatment Planning administrator to arrange a conference to review and finalize your digital plan. If you are part of a surgical-restorative team, we encourage all members to take part in the Web conference (Fig. 11).

■ Reviewing and Accepting Digital Plan

All information regarding your case can be accessed through "My Account."

- Sign in to "My Account" by clicking on "Treatment Planning," then "Dentist" under "Submit Digital Case."
- Click on "Open Cases" under "Case Status and Shipping" in the toolbar.
- Select "Details" for the selected case. Here you can access:
 - Your original Digital Rx
 - Pathology Report (if one was ordered)
 - Plan Viewer — You can download a Viewer version of your plan.
 - Print Plan — A PDF of your plan can be printed.
- To accept the plan (Fig. 12):
 - Click on "Plan Viewer/Approval."
 - Check the "Accept" box. Fill in your electronic signature and license number.
 - Click "Submit."

Note: The SurgiGuide for your case will not be ordered until you submit your acceptance.

Important: You, as the treating clinician, are responsible for the plan. Carefully review your plan before you accept it.

■ Fifth Appointment

- Try-in SurgiGuide to verify fit.
- If horizontal Fixation Screws are planned, take a bite registration with the SurgiGuide in place.

Note: The Surgical Index is a bite registration that will be used to keep the SurgiGuide completely seated until the horizontal Fixation Screw is threaded into place.

■ Sixth Appointment

- Perform Guided Surgery procedure per SimPlant protocol (Fig. 13). Deliver provisional if indicated.

■ Follow-up Appointments

- Schedule follow-up and recall appointments following standard implant protocol. Continue to final restoration when appropriate.

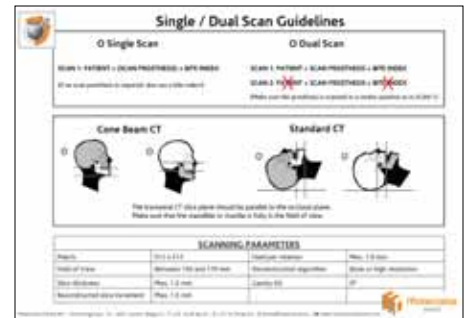


Fig. 9 CT Scan protocol



Fig. 10 Upload and send DICOM folders.



Fig. 11 Web conference



Fig. 12 Accepting the plan



Fig. 13 Guided Surgery (photo courtesy of Dr. Avi Israeli)



Digital Treatment Planning provides total control for implant restoration

■ SIMPLANT# PACKAGES

The Classic SurgiGuide consists of up to three guides per case.

SIMDTXSG (Digital Plan, Classic SurgiGuide)

SIMPKG (Digital Plan, Classic SurgiGuide, Scan Prosthesis)

Digital Plan

Classic SurgiGuide

Scan Prosthesis (Partially/Fully Edentulous)

■ ASTRA TECH FACILITATE# PACKAGES

Facilitate consists of one guide per case. Facilitate Surgical Kit is required.

FAC1 (Digital Plan, Facilitate SurgiGuide)

FAC2 (Digital Plan, Facilitate SurgiGuide, Scan Prosthesis)

Digital Plan

Facilitate SurgiGuide

Scan Prosthesis (Partially/Fully Edentulous)

SAFE SurgiGuide consists of one guide per case. SAFE Surgical Kit is required.

SSGDTX (Digital Plan, SAFE SurgiGuide)

SSGPKG (Digital Plan, SAFE SurgiGuide, Scan Prosthesis)

Digital Plan

SAFE SurgiGuide

Scan Prosthesis (Partially/Fully Edentulous)

■ BIOMET 3i NAVIGATOR# PACKAGES

Navigator consists of one guide per case. Navigator Surgical Kit is required.

NAV1 (Digital Plan, Navigator SurgiGuide)

NAV2 (Digital Plan, Navigator SurgiGuide, Scan Prosthesis)

Digital Plan

Navigator SurgiGuide

Scan Prosthesis (Partially/Fully Edentulous)

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Quick Reference

	Doctor	Glidewell
1st Appointment	Take preliminary impression. Fill in and submit Digital Rx.	Pour models, fabricate bite block.
2nd Appointment	Jaw relation records and select tooth shade/mould.	Articulate models, set denture teeth in wax.
3rd Appointment	Trial denture try-in.	Fabricate Scan Appliance and Scan Index.
4th Appointment	Try-in Scan Appliance and Scan Index. Send patient for CT scan. Upload CT (DICOM) folder.	Convert DICOM files in SimPlant software. Draft implant plan based on Digital Rx.
Web Conference	Review and finalize plan.	Post Viewer version of plan.
Accept Plan	Accept plan through "My Account."	Order SurgiGuide. Fabricate master cast and provisional restoration (if prescribed).
5th Appointment	Try-in SurgiGuide. Fabricate Surgical Index.	
6th Appointment	Perform Guided Surgery procedure per SimPlant protocol. Deliver immediate provisional (if indicated).	
Follow-up and Recall Appointments	Schedule per standard implant protocol. Continue to final restoration when indicated.	



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