The Dual Scan method uses scan data from a patient’s denture to fabricate a drill guide and is appropriate for edentulous cases where the prosthetic goal is an implant supported fixed prosthesis or hybrid.

Drill guides based on the dual scan method are constructed using two data sets, which are merged in implant planning software for surgical planning to provide visualization of the osseous anatomy, the soft tissue ridge, and future tooth position.

1. The patient wearing the denture scan provides the osseous anatomy
2. The denture alone scan provides the soft tissue anatomy and future tooth position. The inner intaglio surface of the denture is the surface upon which the drill guide is built.

The fit and stability of the drill guide will only be as good as the fit and stability of the denture. An unstable, poorly fitting denture will result in a poorly fitting, unstable drill guide. Particularly for the mandible, this method will only work well with a denture that has adequate surface area and fits well.

If the denture has sufficient surface area, but is poor fitting, a hard reline of this denture with clear acrylic is required for this denture to be used for the dual scan method.

The patient must be motionless during the scan. A low resolution scan for a short time period usually provides the best results. Include all relevant anatomy in the scan, but avoid including head and neck anatomy not relevant for planning. Patients should not bite on scanner mouthpieces, as this may distort the denture position.

The limitation of this method is that the fit and stability of the drill guide is only as good as the fit and stability of the denture.

**Summary of requirements to order a drill guide for an overdenture case**

1. DICOM files from CBCT of patient wearing their denture with fiducial markers
2. DICOM files from CBCT of denture alone with fiducial markers

*Detailed protocol on following page*
Dual Scan Method - Fully Edentulous Patient

1. **Register your case** at [http://www.guidedsurgerysolutions.com/place-order/](http://www.guidedsurgerysolutions.com/place-order/)

2. **Add fiducial markers to the denture**: Apply 5 fiducial markers symmetrically to the denture flange. Use VF-10 self-adhesive glass bead markers available from Suremark

3. **CBCT scan the patient** wearing the denture. Stabilize the denture with cotton rolls applied symmetrically.

4. **CBCT scan the denture**
   a. Place the denture on a non-radiographic platform (ex: foam sponge), oriented as it was in the patient (upper versus lower)
   b. Center model left-right using vertical laser line through central incisors
   c. Adjust height so horizontal laser line on the teeth
   d. Center model anteriorly-posteriorly based on shadow from horizontal laser line on sensor (shadow of the teeth, not the tray)
   e. Check left-right centering using vertical laser line

5. **Create a folder** for the patient in your shared GSS Dropbox folder and upload:
   a. Patient wearing denture DICOM file
   b. Denture alone DICOM file

6. **Email** Guided Surgery Solutions at support@guidedsurgerysolutions.com to let us know that the data for your case is in your dropbox.