



iDent Imaging is a dynamic imaging technology company that develops and produces advanced CT image processing and rapid manufacturing solutions to simplify and qualitatively improve the accurate planning and placement of dental implants. iDent's FDA approved technology will simplify and speed up implant placement, reduce risks and uncertainties, and broaden the base of dental professionals able to place implants.

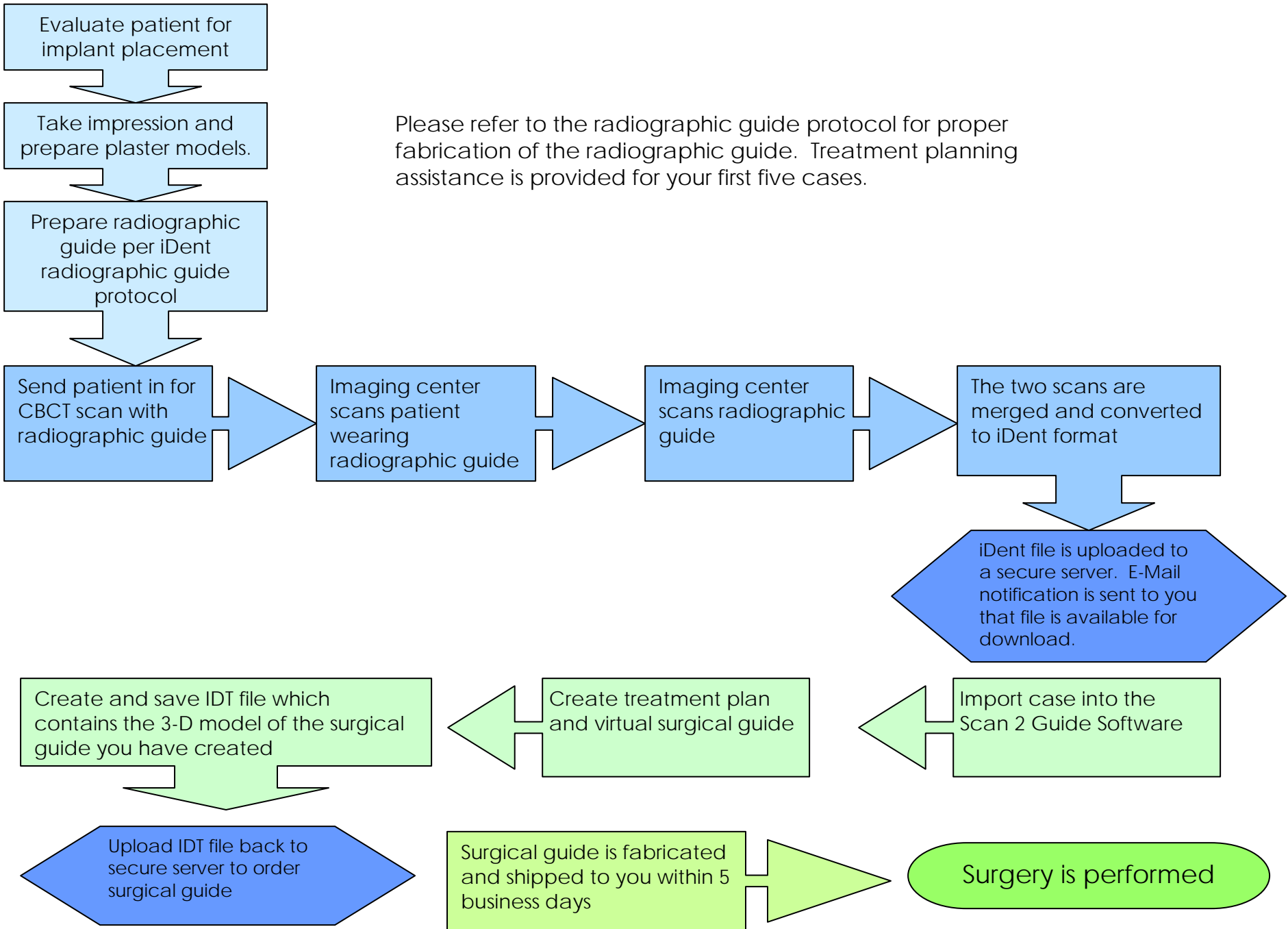
iDent produces simple yet sophisticated, prosthetically-driven solutions designed to allow dentists of all levels to improve the quality of their implant placement, streamline restorations and raise the productiveness of their practices.

Scan2Guide allows the dentists to plan the placement of implants within the CT data. Because the Scan2Guide system is affordable, all members of the clinical team can run the software and share treatment plan data. This promotes a synergy that leads to better restorative outcomes. The Scan2Guide system is very versatile, ideal for single tooth cases, overdenture/mini implant cases and the fully edentulous arch. The Scan2Guide system supports all major dental implant brands.

iDent's west coast division locally produces your surgical guides and provides remote training and technical support. We are always available to answer questions and work with your CBCT or CT scan site for best imaging results. Treatment planning assistance is complimentary on your first 5 cases. We can also provide a written report from a dental radiologist on any case.

Please call us to set-up a meeting with an iDent representative.

Process Workflow



We recommend the following computer specs for optimal running of Scan 2 Guide software

Processor

Pentium IV Processor or Better

Video Card

256MB memory minimum (we recommend 512MB, ATI or nVidia suited for 3D graphics)

Virtual Memory

1GB of RAM (2GB of RAM is optimal)

Operating System

Windows XP – Service Pack 2

Broadband Internet Connection

DSL, Cable or better (for FTP transfer and remote support)

For MAC users we recommend running Scan 2 Guide in Windows using Boot Camp. Parallels is also suitable.

iDent's R & D department has designed and produced a new and improved drilling device for use with their surgical iGuides.

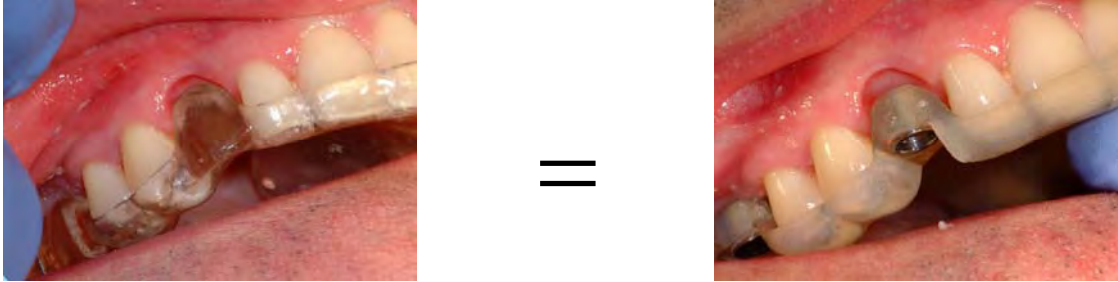
The iTool continues the iDent philosophy of making computerized planning for implants with automatic production of surgical guides as simple as possible. The iTool allows the dentist to move through his drilling sequence using an iTool for each diameter of drill. The iTools can be ordered in any size compatible with any implant drills available today.

The iGuides are supplied with titanium master sleeves with internal diameters of either 4mm [A] or 5mm [B], and the stainless steel iTools are easily and accurately inserted into them. iTool A is for drills up to 3.4mm and B for drills up to 4.5mm.

With the compact, angled design any location in the mouth is accessible. Each size of iTool can be used for left or right, anterior or posterior locations.



Proper fabrication of the radiographic guide is the critical first step in the iDent Scan2Guide process. The surgical guide that is fabricated is essentially a digital duplicate of the radiographic guide. So a secure fit and an adequate amount of material are crucial. The gutta-percha markers are what enable us fuse the scan of the patient wearing the guide with the scan of the guide alone. They should be placed exactly as this protocol describes. Prosthetic correctness of the guide is critical to utilize the full prosthetic planning aspects of the software. Please call us if you have any questions, we are glad to walk you or your dental lab through the specifics.



Impression Material & Models

Whether you make the radiographic or use a dental lab, the impression is the critical first step in the Scan2Guide process. This will ultimately affect the overall accuracy of the surgical guide that is created. We recommend VPS or similar material to be used to take the impression. You must take an impression of the full palate on the maxilla and retro-molar pads on the mandible. The model must accurately reproduce the buccal and lingual margins. The vestibule must be clear and undistorted. The entire impression should be free of pulls and bubbles. If the model is not accurate the fit of the radiographic guide will be improper.

Guide Material

The radiographic guide should be fabricated from clear orthodontic acrylic. Do not use vacuform or any other non-rigid material.



Make of the Guide

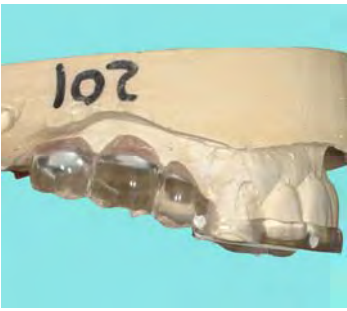
A diagnostic wax-up is used to fabricate the radiographic guide. The crowns should be a distinctively represented on the facial/buccal and occlusal aspects of the guide. Facially, the crowns of the guide adjacent to existing teeth should adjoin the guide via a diagonal span of acrylic.

The guide should cover the occlusal surface of the full arch. Do not fabricate the guide in such a way that it covers only a small section of the arch. The guide should extend over gums on the lingual/palatal side.

The flange should be 2 to 3 mm thick. The crowns on the guide should touch gums in edentulous areas. The guide should not have any gaps in between the gingiva and the guide.

It is important to be aware that the surgical guide will be an exact duplicate of the radiographic guide. The only changes in shape will be the tunnels made by the software for the implant sites.

See images next page



Proper make and fit of upper crowns



Proper make and fit of lower crowns



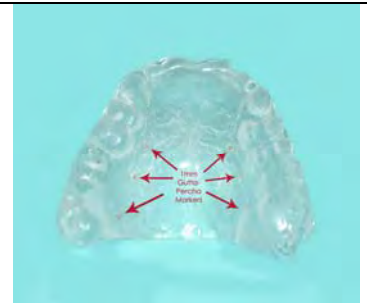
Proper coverage of occlusal surface



Proper thickness of guide

Gutta-Percha Markers

Insert exactly 6 gutta-percha markers 1mm x 1mm. The markers should not be tubular in shape, they should appear as a round pellet no bigger than the recommended size. These markers should be placed on the lingual flange of the radiographic guide at a point that would be equal to the apical of each tooth. You may also use a radio-opaque composite for markers.



Gutta-percha markers are not in same horizontal plane as crowns of teeth. Ideal spacing is shown.

Proper Fit

Because the surgical guide will be an exact duplicate of the radiographic guide, the guide should fit securely on the patient's teeth. If the guide does not fit securely, the guide must be remade. The guide should be stable on the study cast and in the patient's mouth. The guide should fit snugly enough that it cannot be easily displaced when the patient occludes. The patient will need to stabilize their bite while wearing the guide so as not to move during the scan (but natural occlusion is not necessary).



Improper fit - gap between guide and gingiva

Using the Existing Prosthesis

You may also use the patient's existing denture or duplicate of the denture. The gutta-percha markers should be placed on the lingual/palatal side of the prosthesis.

It is recommended you realign the denture before the scan, if necessary, to insure ideal fit. If you do so, you must do a hard realign.



Denture marked with gutta-percha Acrylic duplicate of denture

Avoiding Problems

Pins - Please do not use pins to mark the trajectories, a guide made properly from a wax-up that represents the crowns is completely adequate for planning trajectories. Pins often create too much scatter on the CT image obscuring important information.



Immediate Extraction Cases

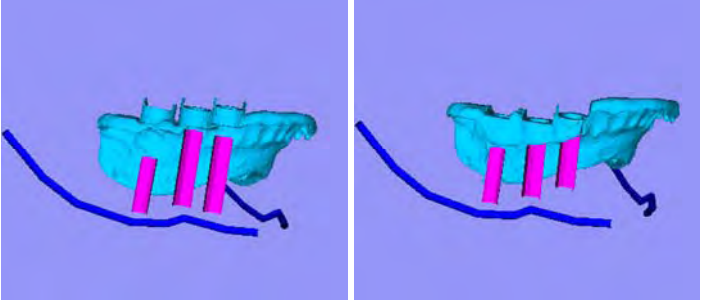
The guide should resemble a night guard as shown. Once the patient has been scanned, the radiographic guide and model will be sent back to you or your prosthetic lab. A crownectomy should be performed on the model. Then the guide should be modified by adding acrylic to the newly edentulous areas. The material added to the guide should represent exact facial, occlusal and lingual aspects of the final prosthesis. The guide is then sent back to the imaging center to be scanned alone. No additional scan of the patient is required.



Radiographic guide before Modification

Radiographic guide after modification

Proceeding with the two scans without proper modification of the radiographic guide will result in a problematic surgical guide. The software will be unable to calculate correct drill depths and there will not be enough material to support the titanium drill sleeves in each implant site.



Incorrect surgical guide produced from unmodified radiographic guide

Correct surgical guide fabricated from modified radiographic guide