IT´S NOT BRAIN SURGERY

3D Printer Creates Digital Solution for Surgical Guides

"By using the Objet 3D Printer – the success rate of our surgical guides is tops!"

— Miri Keynan, Guide3D

Guide3D uses the Objet Eden 3D printer system to produce precise, accurate guides for implant surgery.

Guide3D Ltd. is a dental institute that develops advanced technologies and procedures for the dental implant market. Guide3D's team developed a smart design solution featuring numerous technical dental implants and surgical guides.

The Challenge

The success of implant-supported restorations requires detailed treatment planning, part of which includes the construction of a surgical guide.

Guide3D Ltd. is recognized as an expert in the field of surgical guide construction. Using 3D printing, the company has established a complete digital solution for surgical guide fabrication. Before surgery, detailed planning identies vital structures, such as the inferior alveolar nerve or the sinus, as well as the shape and dimensions of the bone to orient implants for the most predictable outcome.

Patients often have to-dimensional radiographs, such as orthopantomographs or periapicals, taken prior to surgery. Guide3D's challenge was to use a CT scan with appropriate software and a 3D printing solution to achieve a precise and accurate surgical guide.

For a successful dental implant procedure the jaw must have enough bone, and the bone has to be strong enough to hold and support the implant. If not, bone may need to be grafted. Guide3D wanated a 3D printing solution to address these needs.

At a Glance

Challenges
- Fabrication of surgical guides is highly complex
- 2D solutions were not enough to achieve the required accuracy

Solution
- The Objet Eden260V™ 3D Printer

Results
- Achieved a complete digital workflow for in-house fabrication of surgical guides
- Models with very fine details and an outstanding surface finish
- Expanded variety of dental solutions, with greater speed, to overtake competitors

Stratasys
FOR A 3D WORLD™

The Solution

Computer simulation software based on CT scan data enables virtual implant surgical placement. This provides insight into the vital anatomy, bone quality and implant characteristics, letting experts decide if bone grafting is needed.

Objet's 3D printed models and surgical guides were chosen by implant surgeons to facilitate the proper implant placement based on the final prosthesis' occlusion and aesthetics.

The Objet 3D printer proved to be the perfect solution, enabling Guide3D to design and print surgical guides for most implant cases. Models produced on the Objet printer can be cold-sterilized, have exceptionally fine details and have an outstanding surface finish – all necessary for ensuring the high degree of accuracy required by Guide3D's team and dentists.

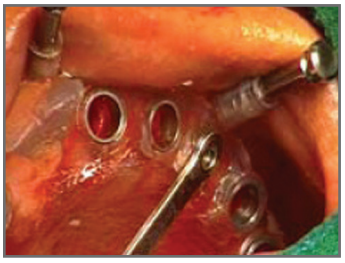
The Results

Dental implant surgery is the most frequently demanded dental procedure to replace lost teeth.

By using the Objet Eden 3D Printer Guide3D realized a complete digital workflow for in-house fabrication of surgical guides and present a greater variety of dental solutions to its clients. Instead of rejecting or outsourcing inquiries, like before, Guide 3D can now answer every order that it receives.

Guide3D now has the freedom and capacity to add new customers while maintaining tight control of its overhead. In this way , it can expand its business and stay one step ahead of its competitors.

Surgical guides are often required for dental implant restorations.



The Objet Eden260V 3D Printer is used to print surgical guides.

With 3D printing, Guide3D can meet the needs of every customer.

Stratasys | www.stratasys.com | info@stratasys.com

7665 Commerce Way
Eden Prairie, MN 55344
+1 888 480 3548 (US Toll Free)
+1 952 937 3000 (Intl)
+1 952 937 0070 (Fax)

2 Holtzman St.,
Science Park, PO Box 2496
Rehovot 76124, Israel
+972 74 745-4000
+972 74 745-5000 (Fax)

ISO 9001:2008 Certified

For more information about Stratasys systems, materials and applications, call **888.480.3548** or visit **www.stratasys.com**