

Computer Guided Implant Placement and 3D Printing

Dr. David Forlano August 2017

I have been performing computer guided implant placement for well over 15 years now. Computer guided implant placement is a process of performing a virtual surgery on a three dimensional computer image of a person's jawbone. Once the implants are placed on the computer, their exact position is transferred to the mouth via a "Surgical Guide".

The benefits of computer guided surgery include very predictable implant planning, safer procedures, less invasive operations, precise implant placement, prosthetically driven implant placement, and a more comfortable patient experience.

I began with Simplant software in the 1990's and kept pace as the software developed over the years. With its continued upgrades and improvements, Simplant still proves to be cutting edge. Simplant enabled me to plan difficult surgeries on the computer, analyzing the patient's anatomy in three dimensions, and converting high-risk procedures into safe,

routine, minimally invasive procedures. With Simplant, I outsourced the fabrication of CAM/CAD surgical guides and stereolithnic models of the jaw. This not only enabled treatment of difficult cases, but enabled advanced procedures such as immediate loading or "Teeth-In-A-Day". All of this came with a hefty price tag and took weeks to deliver. Advances in 3D printing have given us the opportunity to bring this sophisticated technology into our dental office.

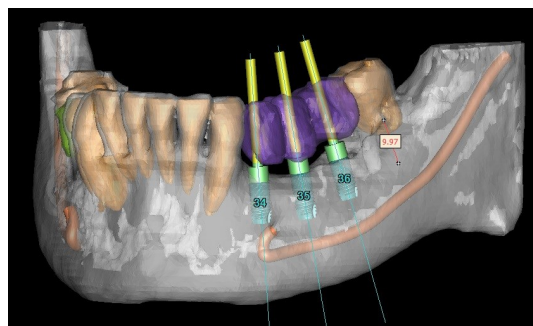


Figure 1: Three implants in patients lower left jaw precisely planned on Simplant software.

TECHNOLOGY UPDATE

We are happy to announce that we recently acquired new software and a FormLabs 3D printer.

The FormLabs 3D printer uses the first biocompatible 3D printing resin. In combination with our digital scanner, the Form Labs 3D printer streamlines our CAD/CAM workflow. We can now plan an implant case and print a surgical guide right here in our office, within a few hours.

That means, what used to take three weeks, now takes only three hours!



Figure 2: Our new FormLabs 2 SLA 3D printer.