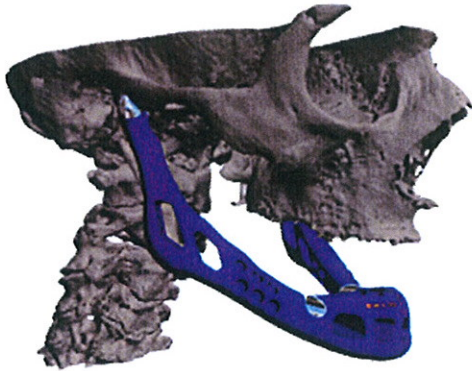


Woman Has Jaw Replaced With A 3-D Printed Jaw

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From the desk of Rep. Jim Weidner

HB 3425

Computer generated 3D image of the patient with the final design of the implant in blue. (Credit: Xilloc)

A team of medical researchers from Belgium and the Netherlands has successfully replaced the jaw of an 83-year old woman with a 3-D printed model of her lower mandible. This is the first such model used to replace an entire jaw.

Because of a severe infection, the doctors had determined that the woman's jaw had to be replaced, but because of her age and other factors, traditional reconstructive surgery was judged to be too risky. So instead, the researchers, working in conjunction with implant company Xilloc, opted to instead replace the entire mandible with a 3-D printed model.

The implant itself was made of titanium, which was 3-D printed from powdered titanium through a process known as laser melting. As you might imagine from the name, this technique uses a high-powered laser to fuse together the powdered metal layer by layer. The design of the implant was just done through normal 3-D CAD techniques. After the implant was produced, it was sprayed with a bone-substitute compound and then was surgically attached to the woman's skull.

Just a day following surgery, the woman could already speak and swallow normally, and she had full operation of her mouth after all of the incisions healed.

This is a pretty amazing application of 3-D printing, since the prosthetic could be fitted exactly to the unique needs of the patient. This, I imagine, is just the tip of the iceberg for this type of medical application. I can't wait to see what's next.

<http://www.forbes.com/sites/alexknapp/2012/02/05/woman-has-jaw-replaced-with-3-d-printed-model/>