

3D PRINTING FACES: PLASTIC SURGERY PATIENTS GET TANGIBLE PREVIEWS OF THEIR NEW LOOKS



High accuracy



Time-saver



Cost effective



A plastic surgeon 3D scans his clients' faces with Artec Eva and 3D prints masks to show what their faces will look like after surgery, for the first time in the world.



A patient receives a 3D printed mask from AVSAR Aesthetic Surgery Clinic. Image courtesy of Mcor Technologies.

The founder of AVSAR Aesthetic Surgery Clinic in Istanbul, Dr. Avşar fabricates masks for his patients to demonstrate how they can look post-op.

It's a trendy tool nowadays with a vast number of practical advantages: firstly, it supplies patients with an object that accurately reflects the end result of a surgical procedure; secondly, it sets realistic expectations for the patient as well as on the limits of surgery; and finally, it serves as a helpful three-dimensional frame of reference for doctors.

In his practice, Dr. Avşar combines the imaging capabilities of Artec's high-precision 3D scanning hardware with the swiftness of additive manufacturing. With these techniques, he can quickly construct a material, tangible estimation of how a patient will appear after undergoing facial surgery. The results, according to Dr. Avşar, have been met with approval.

In a recent interview with Digital Engineering he shared, "It is what the patients want. Before this, it wasn't possible for us to show patients exactly what their face would look like following surgery. Enabling them to see and feel the realistic three-dimensional mask of their face gives patients a far greater understanding of the surgical results they can expect. This technology is powerful for patients in everyday practice."

3D PRINTING FACES: PLASTIC SURGERY PATIENTS GET TANGIBLE PREVIEWS OF THEIR NEW LOOKS



A patient presented with 3D printed masks to choose how she prefers her face to be changed. Image courtesy of Mcor Technologies.

Doctors benefit enormously from this technology. A point of fact, 3D scanning revolutionized Dr. Avşar's method of mask-making. Before he started using Artec's Eva digital 3D scanner, he himself sculpted masks for his patients...by hand! It was a time-consuming and laborious task that simply had to be done away with. Even more, the final handmade facial models often went without key details, like color and texture, which could have been of great value to both patient and doctor. Crafting masks is an art in of itself. And while Dr. Avşar was a well-versed craftsman, he was first and foremost a cosmetic and reconstructive surgeon with service demands from patients outpacing supply. Clearly, something had to change.

Now with the implementation of Artec 3D scanning and Mcor 3D printing, Dr. Avşar turns out a respectable number of about 20 unique masks per month. Much of the labor now is taken up by the Eva 3D scanner, using which Dr. Avşar can obtain a wealth of visual details in seconds.

And users like Dr. Avşar can learn how to operate Artec 3D scanners in no time.

In fact, 3D scanning has evolved to become more user-friendly, a principle that Artec 3D has always adhered to. 3D scanning the head requires minimum effort – a few points need only to be considered to produce exciting images that Dr. Avşar is able to generate.

Firstly, you should start with the face. Scan it only once. Facial expressions do change, therefore additional scans can conflict with the first. Also, ensure that the shoulders or back remain in view. This will help anchor each shot. You can remove them later with the 2D erase brush in editing mode. Finally, scan the top of the head. If the image looks a bit out of sorts, switch Fine Serial Registration algorithm to "Geometry only." Fine and Global registration will digitally build the head, and thereafter, Fusion will render the final image. If you find even this method too complex, you can simply activate "Geometry + Texture." This'll ease and speed up scanning. You'll soon be sending your images to your preferred 3D printing provider.



Dr. Yakup Avşar discussing prospective plastic surgery with a patient. Image courtesy of Mcor Technologies.

With the help of 3D scanning, what used to take weeks or even months to complete can now be done in a single doctor's visit. More than that, patients wishing to undergo cosmetic or reconstructive surgery can now see and feel the results of a procedure they haven't even gone through with yet.