

## 3D Printing helps in Accurate Surgical Preplanning

Case Study | Healthcare

## About Surgical Planning

A pre-operative method of visualizing surgical intervention to pre-define surgical steps. Visualizing patient's anatomy on a 2D computer screen provides an insufficient and non-realistic representation of spatial relationships at times. Use of 3D printed anatomical models for preoperative planning can assist the surgeons better.

Accurate pre-operative physical models can result in a less invasive and less time-consuming surgical procedure with adequate aesthetic results.

## Accurate 3D Model for Maxillofacial Surgery

A slightly tricky maxillofacial reconstruction required the doctor from Bangalore to go better prepared to the operation table. The doctor felt an accurate physical model in hand can help in finalizing the approach to save time on the operation table. So, he approached think3D team with patient specific scan data (dicom images) for an accurate patient specific 3d printed physical model.



“Maxillofacial surgery needs to be minimally invasive and the outcome should be aesthetic.”

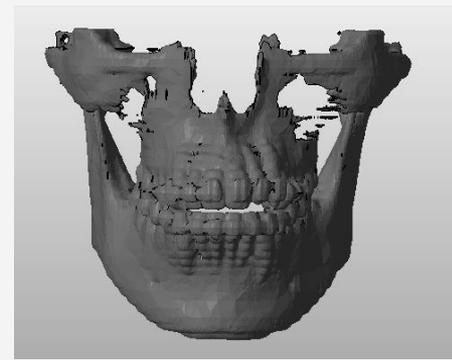


## Solution & Execution

- think3D team converted the set of dicom images in to a 3D printable file
- Based on the input from the doctor, the area of interest was carefully separated to cut down on time and cost.
- The virtual model was signed off by the doctor through email.
- A 3D printed model was created using additive manufacturing technique in plastic, which can be used as a mock surgery aid for different procedures, and sent to the hospital

## Results

With an accurate model (printed in plastic) in hand, the doctor's team could do operations like drilling, sawing, bending plates, screwing etc. on the model and plan the process in advance. This also helped them in counseling the patient's attendants better.



“3D printed models provide valuable anatomical information for an accurate diagnosis, to determine the line of treatment and to perform mock surgery”



# Contact Us



If you are looking for any help in using 3D printing healthcare, or for patient specific molds/ templates/ guides, feel free to get in touch with our team



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