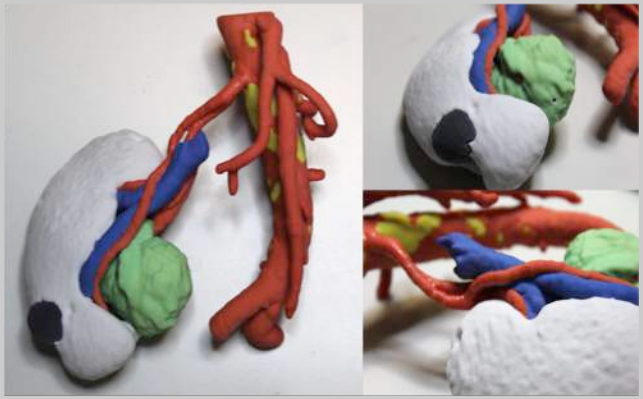
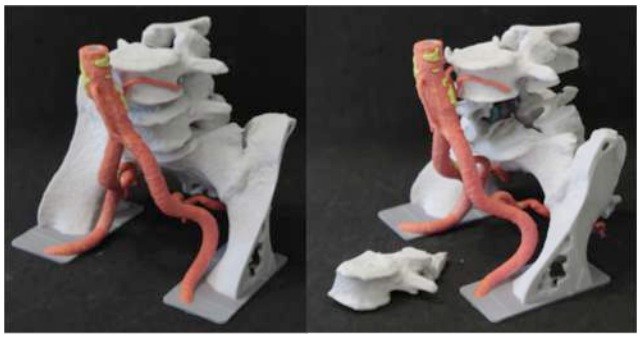
Clinical Cases



Multichrome plaster model for robotic kidney tumor resection. This model can be used for surgical planning and intra-operative guide.

Aorta models for surgical planning: the transparent one can be used for planning vascular endoprosthesis placement; multichrome plaster models allow to the identification of the anatomical structures of interest.



Interlocking model for spine tumor resection: improvement of the tumor visibility, located in a hardly accessible point.

Where to find us

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The Project is part of the University's Strategic Plan **3D@UniPV**

3D@UniPV
Virtual Modeling and Additive Manufacturing for Advanced Materials

3D4MED

3D PRINTING FOR SURGERY

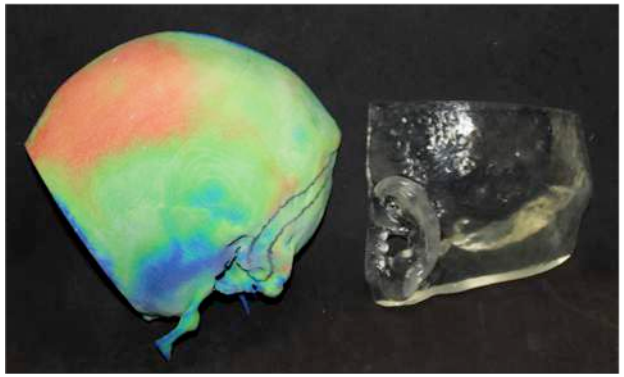
OSPITALE DI S. MATTEO PAVIA

IRCCS Policlinico San Matteo of Pavia

A new technology for an effective and customized surgery!

Our 3D printed models are made for **any medical specialties**. We have several years' experience in the following areas, to date:

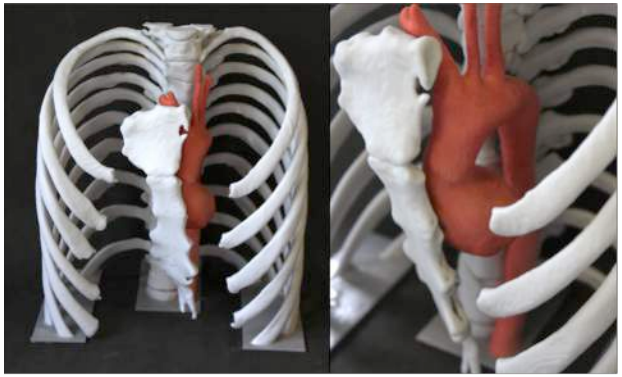
- Abdominal Surgery
- Otolaryngology & Maxillofacial Surgery
- Orthopedics
- Vascular Surgery



We transform medical images (MRI & CT) into a 3D printed object to hold in your hands! Our goal is to help surgeons **planning** and **performing** the surgery, and to facilitate doctor-patient **communication**.

" To hold in my hands the 3D printed patient's anatomy, to visualize it and study it from different perspectives, has given me the appropriate tools to analyse cleary the specific anatomical region to operate and plan the best procedure."

Prof. Andrea Pietrabissa, Director of General Surgery II, IRCCS Policlinico San Matteo of Pavia



We produce three-dimensional replicas of each **patient's unique anatomy**, showing all the surgical relevant structures accurately. Through the combination of engineering and medical skills, we can provide a truly integrated service tool for surgical planning.

Our 3D printers allow us to choose the most suitable technology according to the application field and to specific surgery requirements: we can print and combine different colors and materials, even deformable and transparent, with very high resolution of detail.

Deformable models can be used for realistic simulations of the surgical procedure, while **transparent** ones are useful for planning the endoprostheses placement. We can produce **interlocking models**, to assess structures or tumors otherwise inaccessible, and **models with high chromatic resolution**, to identify the relevant anatomical structures more easly.

By exploiting each material's different physical features, we can make models with mechanical properties very close to reality, i.e. deformable models for vessels or chalk powder ones for bone structures.