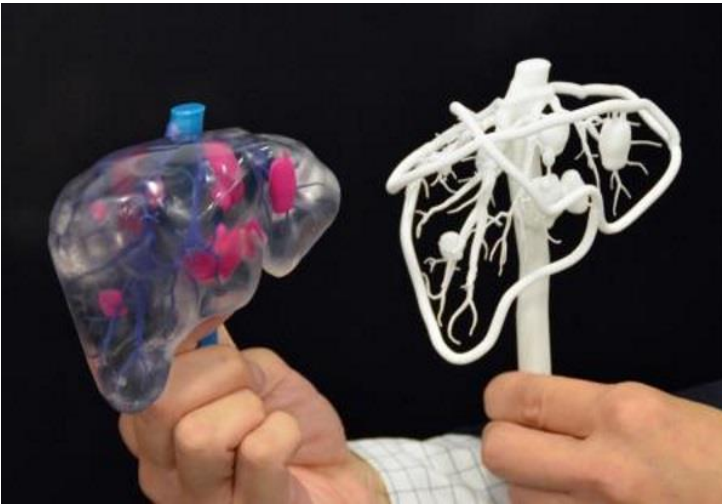


US researchers use 3D printed structures to mimic human organs

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The patient-specific organ models can be used for practicing surgeries to improve surgical outcomes in thousands of patients worldwide.



A team of researchers at the University of Minnesota has 3D printed lifelike artificial organ models that mimic the exact anatomical structure, mechanical properties, and look and feel of real organs.

These patient-specific organ models, which include integrated soft sensors, can be used for practicing surgeries to improve surgical outcomes in thousands of patients worldwide.

Currently, most 3D printed organ models are made using hard plastics or rubbers. This limits their application for accurate prediction and replication of the organ's physical behavior during surgery.

The research team took MRI scans and tissue samples from three patients' prostates and tested the tissue and developed customized silicone-based inks that can be tuned to precisely match the mechanical properties of each patient's prostate tissue. These unique inks were used in a custom-built 3D printer.

In the future, researchers hope to use this new method to 3D print lifelike models of more complicated organs, using multiple inks. Researchers wish to create bionic organs using the method of 3D printing some day.