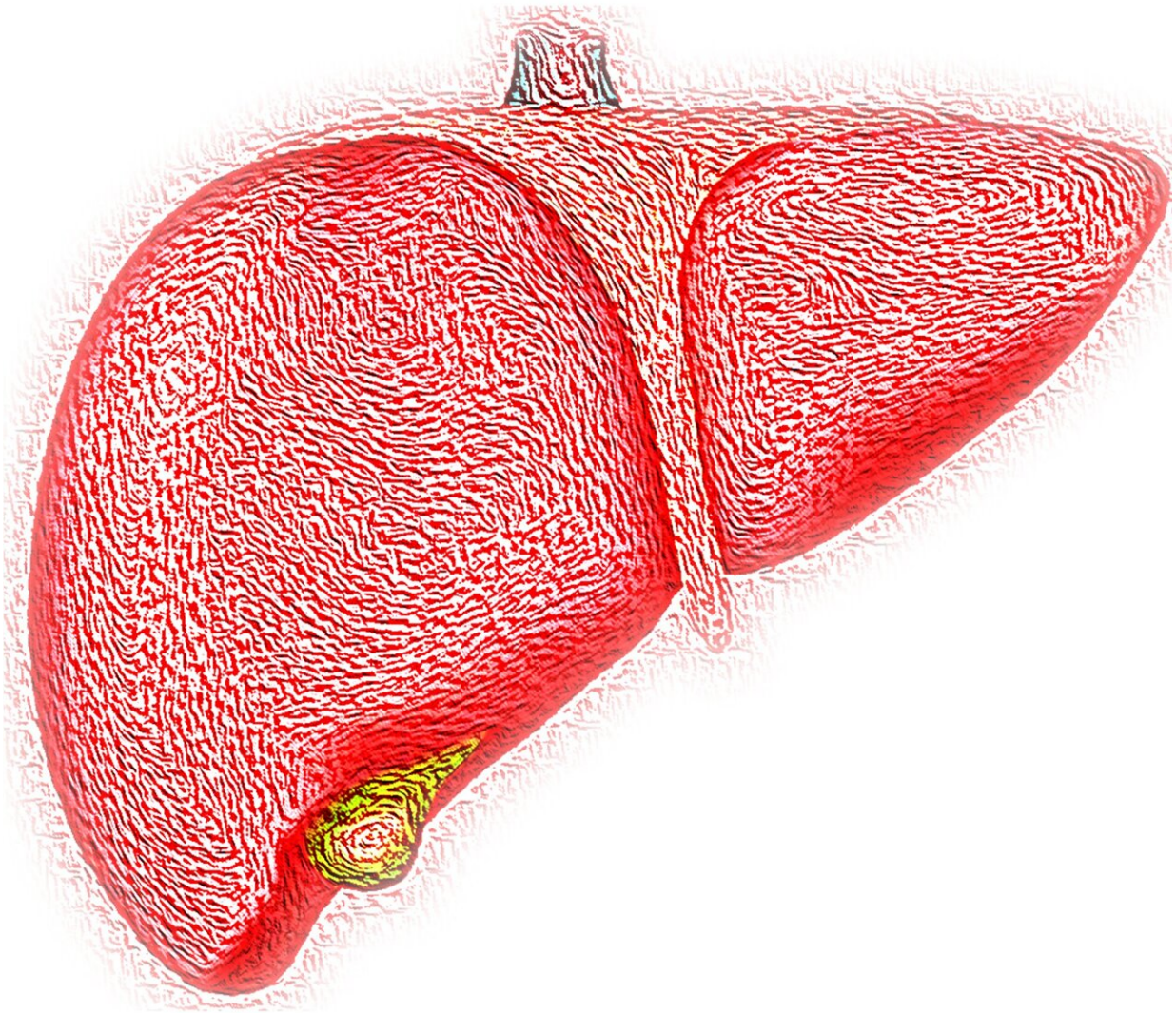


A first-ever experiment shows how pigs might one day help people who have liver failure

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Surgeons externally attached a pig liver to a brain-dead human body and watched it successfully filter blood, a step toward eventually trying the technique in patients with liver failure.

The University of Pennsylvania announced the novel experiment Thursday, a different spin on animal-to-human organ transplants. In this case, the pig liver was used outside the donated body, not inside—a way to create a "bridge" to support failing livers by doing the organ's blood-cleansing work externally, much like dialysis for failing kidneys.

Animal-to-human transplants, called xenotransplants, have failed for decades because people's immune systems rejected the foreign tissue. Now scientists are trying again with pigs whose organs have been genetically modified to be more humanlike.

In recent years, kidneys from genetically modified pigs have been temporarily transplanted into brain-dead donors to see how well they function, and [two men received heart transplants from pigs](#) although both died within months.

The U.S. Food and Drug Administration is considering whether to allow a small number of Americans who need a new organ to volunteer for rigorous studies of either pig hearts or kidneys.

Some researchers also are looking to use pig livers. A liver has different complexities than kidneys and hearts: It filters blood, removes waste and produces substances needed for other bodily functions. About 10,000

people are currently on the U.S. waiting list for a liver transplant.

In the Penn experiment, researchers attached a liver from a pig—one genetically modified by eGenesis—to a device made by OrganOx that usually helps preserve donated human livers before transplant.

The family of the deceased, whose organs weren't suitable for donation, offered the body for the research. Machines kept the body's blood circulating.

The experiment, conducted last month, filtered blood through the pig liver-device for 72 hours. In a statement, the Penn team reported that the donor's body remained stable and the pig liver showed no signs of damage.

There's lots of work into developing liver dialysis-like machines, and experiments using pig livers were tried years ago—before today's more advanced genetic techniques, said Dr. Parsia Vagefi of UT Southwestern Medical Center, who wasn't involved in the new experiment but is closely watching xenotransplantation research.

"I applaud them for pushing this forward," Vagefi said, calling this combination pig-device approach an intriguing step in efforts toward better care for liver failure.

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