

Who wants a pig organ? Patients sick and tired of waiting years for a transplant

By LAURAN NEERGAARD, *The Associated Press*, December 17, 2024

Two U.S. companies aim to begin the world's first clinical trials of xenotransplantation in 2025 – using pig kidneys or hearts to try to save human lives. Would-be volunteers are impatient to see if they'll qualify as researchers fine-tune how best to test if the humanized pig organs they've designed might really work.

Anticipation is growing with news that an Alabama woman was faring well after a pig kidney transplant at NYU in November 2024. Towana Looney is the fifth American to receive a gene-edited pig organ, each case so far an emergency experiment for people out of options.

None of the previous recipients — two given pig hearts and two kidneys — survived more than two months but that hasn't deterred researchers hunting an alternative to the dire shortage of transplantable organs.

"We have to have the courage to continue," said University of Maryland transplant surgeon Dr. Bartley Griffith.

FDA rules require that pig organs be extensively tested in monkeys or baboons before humans. And while researchers have extended those primates' survival to a year, sometimes longer, they were desperate for experience with people. After all, the pig organs are genetically altered to be more humanlike, not more baboon-like.

At NYU and the University of Alabama at Birmingham, surgeons first tested pig organs in bodies of the recently deceased, donated for scientific research.

Although the first four didn't survive long, in part because of complications from other diseases, those experiments proved pig organs could work at least for a while and offered other lessons. For example, discovery of a hidden pig virus in the first heart transplant prompted better tests for that risk.

Scientists have tried animal-to-human transplants for years without success but now they can edit pig genes, trying to bridge the species gap enough to keep the human immune system from immediately attacking the foreign tissue. Still, nobody knows the best gene combination.

The balance is choosing participants sick enough to qualify but not so sick they have no chance.

"There's a tremendous number of patients who would be very willing, very willing to do this," said Dr. Silke Niederhaus of the University of Maryland.

Niederhaus became a kidney transplant surgeon because around her 12th birthday, one saved her life. That kidney lasted three decades. When it failed, it took five years to find another. So she understands the draw of pig research, and urges people to learn their odds of getting a human kidney before volunteering.

If they're younger, healthier or have a living donor, "I would probably say go with what's known and what's proven," Niederhaus said. But if they're older and dialysis is starting to fail, "maybe it's worth taking the risk."