

# Kidney transplant patients seek life without drugs

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This photo taken Thursday, March 8, 2012, Lindsay Porter is seen in her home in Chicago. Lindsay Porter's kidneys were failing rapidly when a friend offered to donate one of his. Then she made an unusual request: Would he donate part of his immune system, too? (AP Photo/M. Spencer Green)

(AP) -- Lindsay Porter's kidneys were failing rapidly when a friend offered to donate one of his. Then she made an unusual request: Would he donate part of his immune system, too?

Every day for the rest of their lives, [transplant recipients](#) must swallow handfuls of pills to keep their bodies from rejecting a donated organ. The Chicago woman hoped to avoid those problematic drugs, enrolling in a study to try to trick her own immune system into accepting a foreign kidney.

It's one of a series of small, high-stakes experiments around the country that has researchers hopeful that they're finally closing in on how to help at least some [transplant patients](#) go drug-free. The key: Create a sort of twin immunity, by transplanting some of the kidney donor's immune-producing cells along with the new organ.

"I'm so lucky," says the 47-year-old Porter, who stumbled across the research at Chicago's Northwestern University. Porter was able to quit her pills last summer, a year after her transplant, and says, "I feel amazing."

These experiments are a big gamble. If the technique fails, patients could lose their new kidney, possibly their lives. Doctors stress that no one should try quitting anti-rejection drugs on their own.

Why risk it even in a careful scientific study? Anti-rejection medications can cause debilitating, even deadly, side effects, from [fatigue](#) and infections to an increased risk of cancer and [kidney damage](#).

Without the drugs, "the hope for me is I'm able to keep this kidney for the rest of my life," Porter says.

Across the country, Stanford University is testing a slightly different transplant method - and hosted a reunion earlier this month for about a dozen kidney recipients who've been drug-free for up to three years.

"These people who are off their drugs, they're cured," says Dr. Samuel Strober, who leads the study of Stanford's approach. "If they have to be on drugs the rest of their life, it doesn't have the same meaning of 'cure.'"

Anti-rejection drugs work by ratcheting down the immune system, suppressing it from attacking foreign cells. For decades, scientists have

sought ways to eliminate the need for the drugs by inducing what's called tolerance - getting one person's immune system to live in harmony with another person's tissue.

The experimental approach: Transplant the seeds of a new immune system along with a new kidney. It's the 21st-century version of a bone marrow transplant, and possible for now only if the transplanted kidney comes from a living donor.

How does it work? Doctors cull immune system-producing stem cells and other immunity cells from the donor's bloodstream. They blast transplant patients with radiation and medications to wipe out part of their own bone marrow, far more grueling than a regular kidney transplant. That makes room for the donated cells to squeeze in and take root, creating a sort of hybrid immunity that scientists call chimerism, borrowing a page from mythology.

In pilot studies of a few dozen patients, Massachusetts General Hospital, Stanford and a team from Northwestern and the University of Louisville all have reported successfully weaning many, but not all, of their initial participants off anti-rejection drugs.

But each team uses slightly different methods, and it's far from clear which might work best. For example, Mass General patients were weaned off drugs even though their hybrid immunity didn't last - while it persisted for years in the other studies. That might be because researchers transplanted different mixes of cells, or because different pre-transplant treatments may alter how the patient's body reacts.

The question is whether the transplant approach can be made easier and more reliable, said Dr. Laurence Turka of Boston's Beth Israel Deaconess Hospital, who isn't involved in those trials.

"We're at the very early phase of something that has generated a lot of excitement in the scientific community," says Turka, who also is deputy director of the Immune Tolerance Network, a consortium founded by the National Institutes of Health to spur the field. "It has tremendous potential moving forward. Whether it will live up to its potential remains unknown."

To help figure that out, researchers are beginning some new experiments:

-Rather than treating only new transplant patients, the Northwestern-Louisville team is about to begin a pilot study transplanting donor immune cells to people years after they received their new kidney - as long as their long-ago organ donors still are alive and willing to provide those cells.

-Stanford is testing only people with well-matched donors, and hopes later this year to begin the first larger, multi-hospital study of that population. It also is about to begin testing its method in people with poorly-matched donors, like those studied by Northwestern and Mass General. That's important because so many transplant patients lack a well-matched kidney.

-Mass General's study is set to restart soon after some changes to minimize side effects.

Stay tuned: This may not be the only approach. At Emory University, Dr. Kenneth Newell is compiling a registry of truly rare patients - [kidney](#) recipients who somehow survive despite quitting the [pills](#) on their own because they couldn't afford them or because of side effects. He's only discovered about three dozen so far. Researchers are testing them for biological markers that might explain why they fared well and who else is a good candidate - and have found clues that a completely separate

part of the [immune system](#) plays a role.

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