

Outcomes improving for kids with kidney transplants

March 10 2014, by Amy Norton, Healthday Reporter



Study finds steady increase in survival rates, organ function, but there's still room for improvement.

(HealthDay)—U.S. children in need of a kidney transplant are faring better now than a couple of decades ago, but there is still plenty of room for improvement, a new study finds.

Kidney failure is relatively uncommon in children—affecting five to 10 kids per million each year, according to study background information. But when it happens, the optimal treatment is a kidney transplant, which about 800 U.S. children undergo each year.

And the outlook for those kids has been steadily improving over the past 25 years, finds the new study published online March 10 and in the April print issue of *Pediatrics*.

Researchers found that among U.S. children who received a donor kidney in 2001, just over 90 percent were still alive 10 years later. That compared with a 10-year survival rate of 78 percent among kids who had a transplant in 1987.

The donor kidneys, themselves, were surviving longer, too. Among kids who received a transplant in 2001, 60 percent still had a functioning [donor organ](#) 10 years later, the findings showed. That was true for only 47 percent of kids who had a transplant in 1987.

"Things are better than they used to be, but there's still a long way to go," said Dr. Heung Bae Kim, director of the Pediatric Transplant Center at Boston Children's Hospital.

For older adults with [kidney failure](#), a donor kidney that survives for a decade may be adequate. But for kids, that is far from enough, said Kim, who was not involved in the study.

The major obstacle, he explained, is so-called chronic rejection.

"Rejection" refers to the immune system's reaction against the donor organ. People who undergo a transplant have to take immune-suppressing drugs to thwart an attack that would damage or destroy the new organ. Doctors have made much progress in preventing and treating single episodes of "acute" rejection, which can happen any time, but is most likely to happen soon after the transplant.

Chronic rejection happens slowly, with the donor organ gradually losing function over the years, despite immune-suppressing drugs.

"We haven't solved that problem yet," Kim said.

Dr. Kyle Van Arendonk, lead researcher on the study, agreed that much

of the progress that's been made in pediatric kidney transplants shows up in the first year after the procedure.

His team found that back in 1987, 15 percent of children's [donor kidneys](#) lasted fewer than 90 days—versus 3 percent in 2011. And for kids who had a transplant in 2010, 97 percent still had a functioning kidney one year later, compared with only 81 percent in 1987.

The likely reasons? Better immune-suppressing medications, infection prevention and improved surgical techniques probably play important roles, according to Van Arendonk, a surgeon at Johns Hopkins Hospital, in Baltimore.

Some kids seem to fare better than others, though. Donor organ survival improved to a lesser degree in female patients versus male, and in teens versus younger children.

The reasons aren't clear, Van Arendonk said. But when it comes to teenagers and young adults, he noted, one problem is that some fail to stick with their post-transplant medication regimen.

Dr. Susan Furth, chief of nephrology at Children's Hospital of Philadelphia, said that several studies there are looking at ways to improve teens' outlook after a kidney transplant—through better medication adherence and "peer support."

Beyond that, she said, "we are also working to better understand how to balance immunosuppression, so that [kidney transplant](#) recipients avoid both rejection—from too little immunosuppression—and infection, from over-immunosuppression."

Because children who receive a donor kidney usually have decades of life ahead, nearly all will face [chronic rejection](#) at some point, said Kim

at Boston Children's Hospital. They may be able to have repeat transplants, but often they end up having to turn to their only other option: dialysis, which does the work of the kidneys, filtering waste products and excess water from the body.

So it will be vital to keep improving donor-[kidney](#) survival for [kids](#), Kim said. The good news, he added, is that "a lot of researchers are working on that."

As an example, Kim said researchers are developing approaches to "tolerance induction"—sophisticated ways of essentially tricking the immune system to accept a donor organ, without immune-suppressing drugs.

For now, study author Van Arendonk said teens and young adults need a lot of support from their health care providers, family and friends as they take on more responsibility for their own care.

More information: The United Network for Organ Sharing has more on [pediatric kidney transplant](#).

[Abstract](#)

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