

# Kidney failure risk for organ donors 'extremely low'

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The risk of a kidney donor developing kidney failure in the remaining organ is much lower than in the population at large, even when compared with people who have two kidneys, according to results of new Johns Hopkins research.

The results, published in the Feb. 12 issue of the *Journal of the American Medical Association*, describes what is believed to be the largest study ever conducted of kidney disease risk in living kidney donors, encompassing all such donors in the United States over a 17-year period. The same researchers reporting in the same journal also showed in 2010 that the risk of death from any cause for kidney donors is extremely low. Both findings are likely to be due to the fact that before allowing people to donate an organ, they undergo an extensive battery of tests—both physical and psychological—to make sure they are healthy enough to survive with just one kidney. Both studies should give reassurance to people wishing to donate a kidney and the health care workers who help them realize their altruism, the researchers say.

The lifetime rate of kidney failure in donors, the researchers found, is 90 per 10,000, as compared to 326 per 10,000 in the general population of non-donors. In individuals who were as healthy as donors but did not donate, the risk was lower, at 14 per 10,000. Race also appears to play a role. After 15 years, the risk of kidney failure that the researchers were able to associate with giving a kidney was 51 per 10,000 in African-American donors and 23 per 10,000 in white donors. In other words, out of every 10,000 donors, 51 African-American donors and 23 white donors are expected to develop kidney failure who would likely not have had they not donated a kidney. It represents an increased risk, but of a rare event.

"Some people who want to donate to their friends or family members express frustration with the extensive screening process," says study leader

Dorry L. Segev, M.D., Ph.D., a transplant surgeon at The Johns Hopkins Hospital. "But these results affirm the importance of screening donors as carefully as possible so that we can understand an individual's inherent risk of kidney failure and make sure only those with a low inherent risk are cleared for donation."

Thousands of live [kidney donors](#) come into the process completely healthy each year, and it is the highest priority to make sure they stay healthy, says Segev, an associate professor of surgery at the Johns Hopkins University School of Medicine and associate vice chair for research for the Department of Surgery. Those few who do experience complications that lead to kidney failure also have a safety net of sorts: They are given very high priority on transplant waiting lists.

"Donating a kidney makes a profound difference for the recipient's survival," he says. "It is a very personal decision and not one without risk, but this study reminds us that the risk is low enough that most providers in the transplant community feel comfortable letting healthy donors take it, and most potential donors are comfortable enough agreeing to take the risk. It's certainly safer than many other things we choose to do in our lives."

To conduct the study, Segev and his colleagues analyzed medical records of all adults in the United States who donated kidneys between April 1994 and November 2011—96,217 of them. The donors were followed for up to 15 years after transplant. The researchers paired these data with information from 20,024 participants in the third National Health and Nutrition Examination Survey to form two comparison groups—one representative of the general population and one of individuals healthy enough to donate a kidney but who did not do so.

The difference in risk was most significant in African-American donors, who have a greater inherent risk for developing kidney disease, a risk

whose cause is not fully understood. While all increased risk of kidney failure in white donors in the study could be attributed to the donation itself, Segev says that one-third of the cases of [kidney failure](#) in African-American donors seemed to instead come from an inherent risk, something not identified during the screening process.

Segev and his team recently launched a large National Institutes of Health-funded, multicenter effort to better understand the increased risks among African-American donors and to develop a more sensitive screening tool for this population.

**More information:** Paper:

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