



## Kidney Transplantation

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# Kidney Transplantation

The kidneys filter blood, remove waste products, make hormones, and produce urine. The 2 kidneys drain via the ureters into the bladder where the urine is stored. In persons with end-stage **renal** (kidney) disease (also called **chronic renal failure**), renal **dialysis** (use of a machine to substitute for the kidney in removing waste products) or kidney transplantation are the treatment options. A successfully transplanted kidney works as a person's own healthy kidney would. This means that the individual would no longer need dialysis and may reduce or eliminate need for some medications. Not every person with renal failure is a candidate for a kidney transplant, so treatment options should be discussed with your doctor. The April 22/29, 2009, issue of *JAMA* includes an article about access to kidney transplantation among remote and rural-dwelling patients in the United States. This Patient Page is based on one published in the December 7, 2005, issue of *JAMA*.

## DONOR ORGANS

Donated kidneys can come from **deceased donors** (individuals who have recently died and donated organs) or from living donors. Extensive testing takes place to make sure that donor organs are biologically compatible with the recipient. Living donors undergo an operation to remove one of their kidneys, which is then immediately transplanted into the recipient. Because of the large number of persons with renal failure and the limited number of donor organs available, wait times for deceased donor kidney transplantation can be long. Having a compatible living donor may reduce the waiting time and may result in a better match and less chance of rejection.

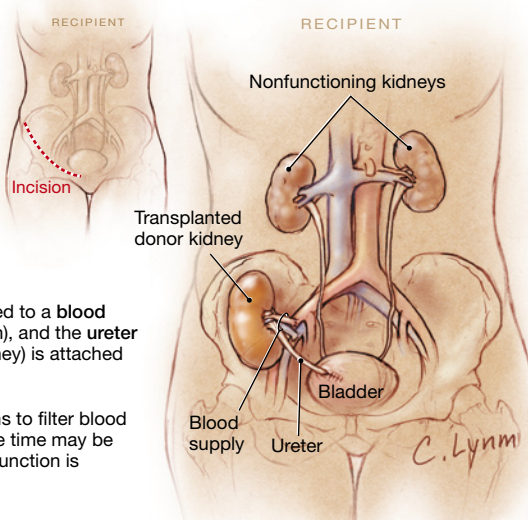
### Kidney Transplantation Procedure

Kidney transplantation is a major operation usually requiring general anesthesia.

An incision is made and the **donor kidney** is placed in the lower abdomen. The recipient's own **nonfunctioning kidneys** are usually not removed.

The donor kidney is attached to a **blood supply** (an artery and a vein), and the **ureter** (to drain urine from the kidney) is attached to the **bladder**.

The new kidney often begins to filter blood immediately, although some time may be required before full kidney function is restored.



## FOR MORE INFORMATION

- National Kidney and Urologic Diseases Information Clearinghouse [www.kidney.niddk.nih.gov](http://www.kidney.niddk.nih.gov)
- American Diabetes Association [www.diabetes.org](http://www.diabetes.org)
- National Kidney Foundation [www.kidney.org](http://www.kidney.org)

## INFORM YOURSELF

To find this and previous JAMA Patient Pages, go to the Patient Page link on JAMA's Web site at [www.jama.com](http://www.jama.com). A Patient Page on kidney failure was published in the February 11, 2009, issue; and one on organ donation was published in the January 9/16, 2008, issue.

Sources: National Institute of Diabetes and Digestive and Kidney Diseases, American Diabetes Association, National Kidney Foundation

## REJECTION OF DONATED ORGANS

Because the body's immune system will try to **reject** (fight against) any foreign tissue, medications must be taken by a patient who has had any kind of transplant (except in some cases where the donor is an identical twin). These are called **immunosuppressive** medications and are taken as long as the donated organ continues to function. There are several types of immunosuppressive medications. An individual usually takes multiple medications to prevent rejection of the transplanted organ. Because the immune system is suppressed, persons who have a transplanted kidney or other organ are at an increased risk for a variety of infectious diseases and certain types of cancer.

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