



What to Expect: Living-Donor Kidney Transplant

Your Care. Our Commitment.

Welcome to the Thomas E. Starzl Transplantation Institute

Your UPMC health care team wants to support you throughout the living-donor kidney donation and transplant process. We have made this booklet as a useful resource, but you may find that you have questions not answered here. Please do not hesitate to ask questions of any team member at any time during your care.

The transplant office is open Monday through Friday from 8:30 a.m. to 5 p.m. Feel free to call with concerns or questions. In the evenings and on weekends, there is an answering service available for urgent and emergency calls.

Phone Numbers

877-640-6746 (toll free)

412-647-5800

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About Living-Donor Kidney Transplant

What is living-donor kidney transplant?

Living-donor kidney transplant is a type of organ transplant in which a healthy kidney from a living person (the donor) is surgically removed and used to replace the unhealthy kidney of another person (the recipient). This procedure was the first type of transplant ever performed.

In about 60 percent of kidney transplants, an organ is taken from a person who has died — after the family's consent or donor consent card is verified. The organ is then given to a patient on the kidney transplant list. Currently, more than 100,000 people are listed for a kidney transplant in the United States. One reason for living-donor transplant is to help overcome the shortage of organs and save more lives.

What are the benefits of a living-donor kidney transplant?

There are many benefits to having a living donor:

- With a living donor, the transplant is planned for a time when the person waiting for the kidney is in the best condition. From the day a person is first placed on the waiting list for a kidney transplant, he or she may wait 2 to 10 years to get a kidney from someone who has died. With a living-donor transplant, the wait is not that long.
- Often, recipients of a living-donor kidney transplant have better outcomes than recipients of a deceased donor's kidney. A kidney from a living donor is placed in the recipient as soon as it is removed from the donor. This improves the chances that the kidney will function immediately. A kidney from a deceased donor may need to be stored for many hours before it can be transplanted.
- For the donor, there is the additional benefit of knowing that he or she has contributed to another person's life in a very meaningful way.
- Living-donor kidney transplants increase the number of kidneys available for transplant.

Who can be a donor?

People interested in becoming kidney donors are carefully evaluated to make sure they can donate safely.

- A donor can be a family member, spouse, friend, or even a stranger (called an altruistic donor).
- The minimum age to be a kidney donor is 18 years old.
- Donors over 60 years old can be evaluated on a case-by-case basis.
- All donors must be in good general health.
- The donor's blood type does not have to match the recipients, as a living-donor exchange or swap can be arranged.

The donor's main reason for donating must be an unselfish wish to help the recipient.



Registered organ donors help to raise awareness about organ donation.

What does the donor evaluation involve?

Before scheduling the transplant, you (the donor) will go through a thorough evaluation. The transplant team performs the evaluation to make sure that:

- As a donor, you are able to tolerate the surgical removal of a kidney and stay healthy after the operation, with no increased risk of kidney failure.
- The transplant recipient is able to benefit from the kidney you would donate.

The evaluation process has a number of steps. A transplant nephrologist and a transplant surgeon will review your case in detail after every step to determine if you should continue on in the process and, ultimately, be cleared for surgery. That way, you will not undergo any unnecessary tests if they decide that your living-donor kidney donation would not be a wise decision.

The process starts with a referral and phone interview with the dedicated living-donor transplant nurse coordinator. The coordinator will gather information about you, answer your questions about the donation process, and discuss incompatible donation. As a potential donor, you will need to provide your blood type, height, and weight, along with medical, surgical, and insurance information.

At this time, if you do not have any medical problems that could prevent you from being a donor, an appointment will be made for a 2-day evaluation. You will come to the transplant clinic at UPMC Montefiore for your evaluation appointment. This appointment will consist of extensive blood work, diagnostic tests, and consults with transplant specialists. You will also have an appointment at Children's Hospital of Pittsburgh of UPMC for a specialized test to check how your kidneys are working.

During the evaluation appointment, there will be many opportunities for you to ask questions of the living-donor transplant team. We will assess your medical and surgical history. Some medical problems that would increase your risk during a major operation to have your kidney removed include:

- Certain kidney, heart, lung, and liver problems
- High blood pressure
- Obesity
- Diabetes
- A history of kidney stones
- A history of cancer

You will also learn about incompatible donors and recipients and the options available to them through the UPMC Live Donor Exchange Program and the National Kidney Registry (kidneyregistry.org).

What are the risks of having living-donor kidney surgery?

There are risks in all surgeries, especially those conducted under general anesthesia. The risk of having some type of complication (problem), minor or major, from this type of kidney donor surgery may be as high as 10 percent (meaning 1 person out of 10 may have a complication). Most complications are minor and improve on their own. In rare cases, the complications are serious enough to require another surgery or medical procedure. Your surgeon will review the risks of surgery with you in detail during your appointment. Death from living-donor kidney surgery is very rare (about 0.03 percent). There has never been a kidney donor death at UPMC.

The risk of kidney donors developing high blood pressure is about 7 percent, which is currently the same as the risk for people who have not donated a kidney. Based on current medical knowledge, kidney donors are no more likely than non-donors to develop kidney failure. Other risks associated with the surgery include: blood clots, bleeding (either during surgery or after surgery, rarely needing a blood transfusion), and damage to nerves from pressure or positioning of arms, legs, or back.

How long will it take to feel better after surgery?

Every person recovers at a different rate. Some people recover very quickly, while it may take longer for others. For a few weeks after surgery, you may find that you tire more easily.

Donor Testing

History and Physical Exam

The history and physical exam are done to make sure that you have no medical conditions or issues that would make the surgery unsafe. Your transplant team will explain as thoroughly as possible the upcoming tests and any related potential risks, as well as the surgery itself and its potential risks.

You will receive a written informed consent form regarding these issues. The team will talk with you in detail about what to expect after the surgery and will explain the need for routine follow-up visits.

After you have had enough time to read and understand the consent form and all of your questions have been answered, you will be asked to sign this form. No one should try to force or bribe you into donating an organ. It is important to remember that you can cancel the organ donation at any time, even if you have signed the consent form.

Nuclear Medicine GFR

A nuclear medicine GFR (glomerular filtration rate) will test to see how well your kidneys are working. It estimates how much blood passes through the tiny filters (glomeruli) in your kidneys that filter waste from the blood. It is very accurate. This test is done at Children's Hospital of Pittsburgh of UPMC.

Blood Work

Blood work will be done to determine whether you have any transmissible diseases or any serious medical conditions that might make the surgery unsafe for you and/or the recipient.

Chest X-ray

This is an x-ray scan to check your lungs.

Electrocardiogram (EKG or ECG)

This test records your heart activity by measuring electrical currents through the heart muscles.

Helical or Spiral CT Angiogram with 3D Reconstruction

This test uses contrast dye to give a detailed view of your kidneys and their vessels. This will help to rule out any abnormalities in kidney structure that might prevent a successful transplant.

Cardiac Stress Test

These tests are done mainly on patients over age 50, or on patients who have other reasons that require heart and blood circulation tests.

Age-Appropriate Cancer Screening

All female donors need a current Pap test and, if older than 40 years old, a mammogram. All donors over age 50 need to have a colonoscopy. These tests are considered routine health maintenance and are typically covered by your insurance.

Visits With Transplant Specialists

Transplant Living-Donor Nurse Coordinator

Your dedicated living-donor nurse coordinator will introduce you to the donation process and review your completed and future testing. Your dedicated living-donor nurse coordinator is here to answer any questions you may have as you move through the donation process.



Transplant Nephrologist

The transplant nephrologist (kidney specialist) will perform a history and physical exam to ensure that you have no medical conditions or issues that would make the surgery unsafe.

Transplant Surgeon

The transplant surgeon will discuss with you in detail the surgery itself, potential risks and complications, post-operative care, and the routine for your follow-up visits.

Independent Living-Donor Advocate

You will meet with a clinician who is independent from the transplant team and who has been assigned to you as your advocate. He or she will act only on your behalf. Part of the advocate's job is to make sure that you completely understand the risks of being a living donor. Your advocate also will ensure that you have made your decision entirely on your own without pressure from anyone else. Contact your advocate any time of the day during the process.

Transplant Social Work

This visit consists of an interview with a social worker who will help you to plan for any care you will need after surgery and when you leave (are discharged from) the hospital. The plan will include housing arrangements, discharge medicines, transportation to and from appointments after surgery, and support for personal, emotional, and physical needs.

Transplant Behavioral Health Specialist

You may meet with a psychiatric professional to make sure that you are able to deal psychologically with the possible stresses that may result from living donation. They will also assess the main reasons for your decision to donate. All altruistic donors (those who are donating as an act of compassion) will meet with a psychiatric professional.

Transplant Financial Counseling

You will meet with a financial counselor. Because you are the donor, the organ recipient's health insurance should cover your surgery and hospital stay. You should not have to pay for any medical bills related to your kidney donation except for routine health care tests, which includes pap, mammogram, and colonoscopy screenings.

Review by the Transplant Committee

After the tests are done, all of your information is presented to the transplant committee. This committee includes transplant surgeons, transplant nephrologists, transplant nurse coordinators, a social worker, a psychologist or psychiatrist, and other transplant specialists. Together, they make the decision on whether or not to clear you for surgery. You will be notified of the committee's decision. In some cases, you may need additional testing before being accepted.

A full donor evaluation and review may take several weeks to complete.

If the decision is made to accept you as a donor, a date for the transplant is chosen. A final cross-match check is performed within 1 month of the date of surgery; both you and the recipient will receive blood tubes in the mail with detailed instructions on when to have the blood drawn and

how to return it to UPMC. An appointment will be made for you to come in for preoperative (pre-op) blood work, NAT testing (a highly sensitive blood test used to detect viruses in the blood), and to sign your operating room (OR) consent. Instructions on when to stop eating and drinking before surgery will be mailed to you.

Donor Financial Assistance

UPMC participates with the National Living Donor Assistance Center (NLDAC) to help living organ donors pay for travel, lodging, and meal expenses incurred during the work-up process. To qualify for this program, you and the recipient must meet certain income criteria and be willing to share your financial information with the transplant center. More information can be found at livingdonorassistance.org.

Donor Confidentiality

The donor evaluation is completely confidential and no information about the evaluation or any results will be disclosed to the recipient, unless you request that the information be provided to the recipient.

Getting Ready For Surgery

On the morning of surgery, you will be admitted to UPMC Montefiore Ambulatory Surgery Center on the 6th floor. A doctor from the anesthesia department will review the surgery, obtain consent forms from you, and answer any questions. You will also meet your surgeon if you did not do so at your pre-op appointment.

Both the donor and the recipient may wear only a hospital gown to surgery. All dentures, hearing aids, eye glasses, nail polish, lipstick, makeup, jewelry, and hairpins should be removed. Please leave your valuables with relatives for safekeeping.

During the operations, family members may wait in the Ambulatory Surgery Center family waiting area. Family members will receive frequent updates from the Surgery Center staff. The transplant surgeon will also visit with family members after the surgery is complete.

Donor Surgery

On the morning of surgery, an IV (a needle with a plastic tube) will be placed in your arm. You will then be taken to the operating room. Once you fall asleep from the anesthesia, a breathing tube will be placed. If the breathing tube is still in place when you wake up (which is not common), you will not be able to talk. When you are fully awake after surgery, the tube will be taken out.

Once you are asleep for surgery, IVs are placed in a large vein in your arm for fluid administration. A catheter also will be placed into your bladder to drain urine and check the amount of urine your kidney is producing during the surgery.

You will be positioned on your side so that your head and feet are slightly lower than the rest of your body. Your kidney (usually the left one) will be located and removed, using minimally invasive laparoscopic surgery. In this surgical procedure, your surgeon will use a thin, lighted tube with a camera to see the kidney, and then remove it through a relatively small cut (incision). The entire operation should take approximately 3 hours to complete.

Recipient Surgery

After your surgery has started, a second team of surgeons will begin to operate on the recipient. The donor evaluation process will continue through both surgeries. If at any point the surgical team believes that you are at risk the surgery may be stopped.

Your Hospital Stay

After surgery, you will go to the recovery room for several hours. You will be transferred to your assigned hospital room when you are fully awake. For the first 24 hours after surgery, you will breathe oxygen through small tubes that run to your nose. It will be very important for you to cough and breathe deeply every 1 to 2 hours as instructed by your nurse. This will prevent fluid from building up in your lungs that may cause pneumonia. Your mouth and throat may feel dry and sore from the breathing tube that was placed during surgery. If you feel sick to your stomach, please tell the nurse, who can give you medicine to make you feel better.

You will be asked to sit up in bed and dangle your feet during the first evening after surgery. The morning after surgery, a nurse will help you to walk a short distance. Walking will help your lungs and bowels to work normally. You may want to ask for pain medicine at least 30 minutes before getting out of bed to walk.

Immediately following the surgery, you may experience pain. To control your pain, you will be given pain medicines through your IV and by mouth. Once the bladder (urinary) catheter is removed and you are able to drink and eat, pain medicine will be given by mouth.

Your bladder catheter will be taken out the morning after surgery. If you cannot urinate within 6 to 8 hours after the catheter is removed, another catheter will be put in to empty your bladder and then taken back out. Most people can urinate the first time the catheter is removed.

You will be started on sips of liquids soon after surgery and given clear liquids the evening after surgery. Solid foods are generally given the next day starting at breakfast, if tolerated. For the next few weeks, your diet should be light and of smaller portions. It may take several weeks for your appetite and stomach capacity to get completely back to normal.

Your incisions will be closed with dissolving stitches under the skin. These stitches do not need to be removed. The skin incisions will be closed using steri-strips and/or adhesive bandages.

On average, kidney donors spend 1 to 2 days in the hospital after laparoscopic surgery.

Care at Home

Daily Activities

You will be able to shower, dress, and do other simple daily activities when you return home. Responsibility for household duties and child care should be given to someone else while you are recovering. You will need a healthy balanced diet and plenty of water to heal and to prevent constipation after surgery.

Most donors report that their major issues are discomfort, low energy, and occasional nausea. Before you leave the hospital, you will be given a prescription for pain medicine and a stool softener. Discomfort decreases gradually over time. Most donors need pain medicine for 1 to 2 weeks after they have returned home. After that period of time, some donors find acetaminophen (such as Tylenol®) to be helpful. It is safe to take aspirin. Do not take non-steroidal anti-inflammatory (NSAID) medicines like ibuprofen, Advil®, or Motrin®.

Expect your energy level to return to normal over 4 to 8 weeks. You are encouraged to return to your normal level of function gradually by doing a little more each day. You can become more active, including sexually active, as you feel able. For at least 6 weeks after surgery, you must not lift more than 5 to 10 pounds. If you lift too much too soon, you could hurt yourself or develop a hernia, which could require more surgery. You also should avoid excessive weight gain after surgery.

Care of the Incision Area

Check your temperature daily for a week after returning home. A temperature above 101°F (38°C) may be a sign of infection. Please call your living-donor transplant nurse coordinator if this happens. As the incision heals, you may have some tenderness, itching, or numbness around the site. These feelings will decrease over time. You should shower every day to keep the incision clean. Check your incision daily for signs of redness, drainage, swelling, or tenderness. Call your living-donor transplant nurse coordinator should any of these signs of possible infection occur.

Driving and Returning to Work

Most donors can resume normal activity, including driving a car and returning to work, about 2 to 6 weeks after surgery. Your living-donor transplant nurse coordinator can assist you with forms and release to work. You should not drive if you are taking any kind of prescription pain medicine.

Follow-Up Appointments

You will be seen by a transplant surgeon in the transplant clinic 1 to 2 weeks after the operation. You will receive a complete physical assessment, have your incision site examined, and provide blood work and a urine sample. You should plan to have follow-up visits for a blood pressure and weight check, and blood testing at 6 months, 1 year, and 2 years after donation. These visits will require you to return to the transplant clinic; if this is not possible because of distance or financial reasons, you may schedule an appointment with your primary care physician (PCP) for blood work, and a check of your blood pressure and weight. We will send you prescriptions for this lab work.

The transplant team will be happy to address any questions or concerns you may have. However, any issues not relating to your surgery should be directed to your PCP. It is important that you continue to maintain your health and your relationship with your PCP, and to have routine physical exams yearly.

If I get a bill after surgery, what should I do?

Do not pay any bills relating to donor testing or surgery. If you are billed, please send them to:

UPMC Presbyterian Shadyside

Starzl Transplant Institute
Attn: Chris Wood
UPMC Montefiore, 7 South
3459 Fifth Avenue
Pittsburgh, PA 15213



UPMC Transplant Services staff talk with a construction worker to help raise awareness about organ donation.



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