

Knowing that the gift of a kidney can help end dialysis treatments and enable someone with kidney failure to enjoy more freedom and energy prompts many to consider living kidney donation.

In fact, in 2019, 6,867 people in the United States acted as living donors. Nationally, approximately 30% of all kidney transplants come from living donors.

At California Pacific Medical Center (CPMC), we've been performing living donor kidney transplantation since 1973. To date, we've had more than 1,600 living kidney donors who have graciously provided the "gift of life." Our Kidney Team works closely with all donors, beginning with the initial evaluation and continuing through surgery and follow-up visits.

While donating a kidney can be one of life's greatest experiences, it should be entered into with a complete understanding of the living donation process. This pamphlet provides an overview of what you can expect as a living donor.

Treatment Options for Someone Living With Kidney Failure

A patient with kidney failure can choose among two forms of treatment:

Dialysis

- *Hemodialysis* uses a machine to filter the blood and temporarily remove waste products, extra salt and extra water from the body.
- **Peritoneal dialysis** uses the lining of a person's abdomen to remove waste products, extra water and chemicals from the body.

Kidney Transplantation

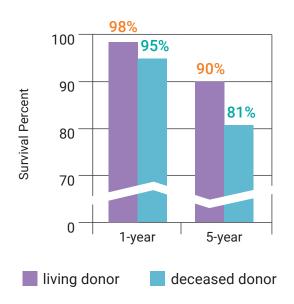
Kidney transplantation is a surgical procedure in which the patient receives a healthy kidney from a living or deceased donor and the donated kidney does the work of the two failed kidneys. There's no need for dialysis after this surgical treatment. Although most patients receive kidney transplants after starting dialysis, patients may also choose transplantation before starting dialysis. For many patients, kidney transplantation has become the preferred treatment for kidney failure.

Advantages of Living Donor Transplant

Living donor transplantation provides some major benefits for patients:

- Patient outcomes are much better than for those who receive a transplant from a deceased donor.
- The waiting time before transplantation is usually very short. The current waiting time in California for a deceased donor organ is five to seven years, while with a living donor, a transplant could occur within a few months.
- The operation can be timed to meet the patients' needs, allowing them to prepare both physically and mentally for surgery.

Kidney Transplant Survival Rate



Who Can Be a Kidney Donor

Living donors are usually between the ages of 18 and 75 and are in excellent health. A person can't donate a kidney if they've suffered from diabetes, hypertension, heart disease, cancer or chronic kidney disease. A kidney donor and recipient don't need to be the same race or blood type.

There are two types of living donors:

Living Related Donor

This refers to a living donor who is a healthy blood relative of the person awaiting transplant. It includes a sibling, parent, child, aunt, uncle, cousin, etc.

Living Unrelated Donor

This refers to a healthy person who's emotionally close, but not blood-related, to the person awaiting transplant. It includes a person's spouse, in-law relatives and friends.



Breyon (left) donated her kidney to friend and neighbor David Jacobs (both seen here enjoying a baseball game). Of the experience, Breyon says, "I was pretty shocked that we were compatible, me being an African-American, 20-year-old female and him being a 50-year-old, Jewish male. I am amazed at that connection and how biologically we are all the same."

What a Donor Needs To Do

If you want to donate to someone who's cleared for kidney transplantation at CPMC, start by visiting **cpmckidneydonor.org**. This will begin the evaluation process. If you pursue kidney donation, remember that you can stop the process or change your mind at any time.

The Evaluation Process

Potential kidney donors undergo a medical evaluation and screening tests to determine if they can donate a kidney. Throughout this process, all communication between the donor and transplant center remains confidential.

The steps involved in becoming a living kidney donor include:

Complete the Living Donor Screening Questionnaire

If you want to become a potential living donor, first visit cpmckidneydonor.org to complete the Living Donor Screening Questionnaire. Once the questionnaire has been reviewed, the nurse will call to discuss the next steps.

2. Complete Initial Testing

These preliminary tests will determine kidney function and compatibility with the recipient.

3. Complete a Living Donor Evaluation

All living donor candidates must complete a twoday evaluation to determine medical, surgical and psychosocial suitability.

4. Have a Medical Workup

If you wish to proceed as a donor, whether compatible or not, we'll schedule a full medical workup at CPMC in San Francisco with a transplant nephrologist and surgeon, as well as a psychosocial evaluation by a transplant social worker. If you live out of state, the medical workup may be completed locally by a recognized transplant center. The steps to complete the medical workup include:

- Medical and Psychosocial Evaluation: This involves a visit with a physician and social worker or psychologist, and a number of medical tests. You'll be provided with an Independent Donor Advocate to assist during the living donor process.
- Compatibility Testing: As a potential donor, you'll have blood drawn for ABO blood typing, crossmatch testing and HLA testing. Crossmatch testing involves mixing donor and recipient blood in our laboratory. A "negative" crossmatch means a potential donor can donate to the recipient. A "positive" crossmatch means there is a high rejection risk and the transplant should not take place. In this case, the potential donor and recipient are offered participation in our Paired Donation Program.
- *Chart Review:* The Kidney Team conducts a thorough medical chart review before determining if you can become a living donor.

5. Get a CT Scan

On the second day of the evaluation, once it has been determined that you are medically acceptable to be a living donor, a final study — a CT scan — is scheduled. The CT scan is a type of X-ray that enables the physician to view your kidney and surrounding blood vessels from many different angles. The scan takes about one hour and is usually performed at CPMC in San Francisco unless you live far away. You and the transplant surgeon will discuss the findings of the scan. If there are no abnormalities, the surgeon will discuss the surgery with you.

6. Arrange a Transplant Date

The last step in the living donation process is scheduling a date for the transplant surgery. This timing is based on:

- Insurance authorization.
- Donor's and recipient's medical clearance.
- · Recipient's financial clearance.
- Donor's and recipient's schedules.
- · Operating room and surgeon's schedules.



Amy Rawlins, transplant recipient, with her son, Kellen. Amy received a kidney from her twin brother, which enabled her to have a family.

Types of Living Kidney Donation

There are three types of living kidney donation: direct donation, paired exchange donation and nondirected donation. All living donors begin the donation process by completing the living donor questionnaire at **cpmckidneydonation.org**.

Direct Donation

With direct donation, the donor generally knows the recipient and donates directly to them. If the donor is compatible, the donor's kidney can be transplanted directly into the recipient. One problem with direct donation is that direct donors are often incompatible or poorly compatible with their intended recipients. This means that the donor is not the right blood type or did not pass the crossmatch test with the intended recipient. However, an incompatible donor can still help their intended recipient get a transplant by participating in a paired exchange.

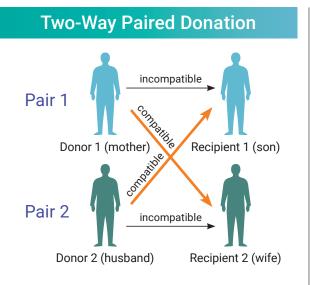
Paired Exchange Donation

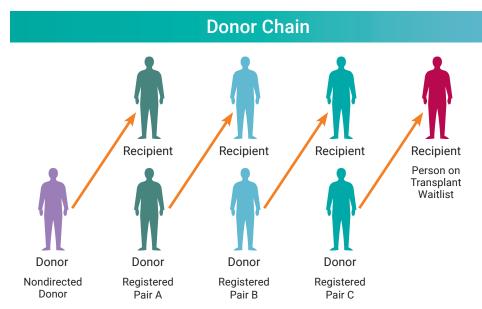
In paired exchange, a donor gives their kidney to another recipient in exchange for a compatible kidney for their loved one. In the example below, the first pair, a mother and her son, are incompatible. The second pair, a husband and his wife, are also incompatible. In this exchange, the mother donates to the wife of the second pair and the husband donates to the son in the first pair. Compatible pairs often enter into a paired exchange to get a better donor match.

Nondirected Donor

With nondirected donation, the donor gives their kidney to a stranger, which initiates a chain of transplants. Chains are a way for one nondirected donor to help many patients get a transplant. Chains are also revolutionizing the paired exchange process by facilitating better donor-recipient matches, which allows the transplanted kidney to last longer.

Many nondirected donors choose to start chains because it's a way to help more than one person suffering from kidney failure. One chain typically facilitates anywhere from 2 to 20 transplants.





What Happens During Surgery

The surgical procedure to remove a kidney from the donor is called a nephrectomy and takes approximately two to three hours. Donor nephrectomies are usually performed with the laparoscopic technique, a type of minimally invasive surgery.

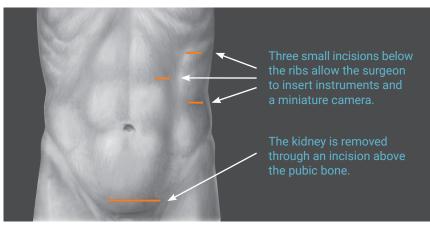
Prior to surgery, the nurse will start an IV your arm. After being transferred to the operating room, you'll receive a general anesthetic and quickly fall asleep. The surgeon then removes one of your kidneys. The donor and recipient surgeries are staggered so that immediately after the donated kidney is removed, the surgeon transplants it into the recipient, who is in an adjacent operating room.

Laparoscopic Kidney Removal Surgery

Laparoscopic kidney removal surgery, also known as laparoscopic nephrectomy, is a minimally invasive surgical procedure for obtaining a kidney from a living donor. Compared with open surgery, laparoscopic nephrectomy results in a smaller incision, shorter recuperation time and a shorter hospital stay. In 1998, CPMC was the first kidney transplant program in the San Francisco Bay Area to perform a laparoscopic nephrectomy.

During the procedure, small incisions (approximately 1 cm in length) are made at three key points in the abdominal area to enable insertion of instruments and a miniature camera. The camera is attached to a monitor that the surgeons view to guide their work. A slightly larger incision (approximately 8 cm in length) just above the pubic bone is used to remove the donor's kidney for transplantation.

Typically, laparoscopic nephrectomy patients (donors) spend two days in recovery before being discharged, compared with an average of five days with the typical open donor kidney transplant surgery.



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Recovery From Donor Surgery

Living donors typically spend two days recovering in the hospital. The first few days after donor surgery, you'll be kept comfortable with patient-controlled pain medication.

Because the kidney donor operation is a major surgical procedure, you may find you have less energy and need about four to six weeks to return to your full presurgery activity level. If you worked prior to surgery, disability coverage allows six weeks off for recovery, but some donors return to work before this time. Frequently, disability doesn't cover all of a donor's salary. You may need to pursue other options, such as using vacation or sick leave. Sometimes a donor's coworkers will donate their vacation time.

Before leaving the hospital, the transplant staff will schedule a one-week follow-up visit. This appointment is necessary to check your surgical incision, blood pressure and overall health.

Health Risks to Donors

Typically, there's little risk to a living kidney donor. Of course, there's the usual risk and pain associated with any surgery, but those are usually minimal. Our team will discuss medical and psychosocial risks associated with kidney donation during your evaluation. But if you have any questions about the specific risks a potential donor may face, visit cpmc.org/advanced/kidney/LivingDonation.

Medical Costs

All expenses for the medical workup and transplant surgery are covered by the recipient's health insurance. In considering donation, consider additional expenses such as:

- Travel to CPMC in San Francisco.
- Parking, lodging, gas, bridge tolls and other incidentals.
- Lost wages if sick leave or short-term disability from work isn't available.

Depending on your and the recipient's income levels, financial assistance may be available through the National Living Donor Assistance Fund. For more information, visit **livingdonorassistance.org**. All potential donors are highly encouraged to apply for this fund.

Our transplant financial coordinators and social workers can discuss your specific circumstances in more detail.

Follow-Up Care After Donation

Kidney donation shouldn't affect your lifespan or lifestyle once you've healed from the surgery. For health maintenance, the Kidney Team encourages regular yearly visits with your primary care physician.

At six months, one year and two years after donation, you'll be asked to complete clinical lab work and and fill out a questionnaire online or via email.



Amanda Roche, kidney donor, with her kidney-recipient mother, Janet Monroe, and daughter, Olivia.

For questions and more information, visit cpmc.org/advanced/kidney/LivingDonation.



Kidney and Pancreas Transplant Program

1100 Van Ness Ave., Floor 3 San Francisco, CA 94109 Telephone: 415-600-1070

Toll-Free: 877-4-CPMC-TX (877-427-6289)

sutterhealth.org/cpmc-kidney