

A Guide to Living Kidney Donation



HALIFAX HEALTH
CENTER FOR TRANSPLANT SERVICES

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UFHealth
UNIVERSITY OF FLORIDA HEALTH

Benefits of Living Kidney Donation

There are several important reasons why living donation may be a good option for potential recipients. For some transplant candidates, a living donation can be a life-prolonging option. Typically, there is about a three-to-five year wait for a deceased donor kidney. Unfortunately, not all patients will remain healthy for that long and look to a living kidney transplantation as their only option.

Living donation provides the following benefits:

- › Living kidney donation helps to facilitate preemptive transplantation, or a transplant before the recipient begins dialysis, which is associated with better outcomes for the recipient.
- › Being able to schedule surgery at a time that is convenient for donor and recipient helps to ensure that both are prepared, mentally and physically.
- › Kidneys from living donors usually have a longer life span, meaning less time on dialysis for the recipient.
- › Kidneys from living donors usually begin to function while the recipient is still on the operation table instead of taking a few days to work, which is also known as delayed graft function.

Living Kidney Donor Selection Criteria

Most people over the age of 21 (in some cases, over the age of 18) who are in good general health and have normal kidney function and anatomy can become kidney donors. Although relatives often offer a better genetic match for the recipient, thanks to improvements in anti-rejection medications, we can now allow both related and unrelated people to donate, with nearly identical outcomes in most cases.

Potential donors should be free of major diseases such as diabetes, high blood pressure, liver disease or severe heart disease. Other history, such as certain cancers and multiple kidney stones, may exclude people from donating. Testing of the potential donor will ensure there is adequate kidney function, so the donor can survive on one kidney alone. The donor needs to be living in a stable environment with social support and should have medical insurance before donation. The potential donor must be able to demonstrate understanding of the donation process, the risks involved in the surgery and the need for follow-up visits after donation.

Similar to getting a blood transfusion, kidney transplantation requires that the donor and recipient have compatible blood types. The chart below shows which blood types are compatible.

A recipient with this blood type		A donor with this blood type
A		A, O
B	Can receive a kidney from	B, O
AB	→	A, B, AB, O
O		O

There are options available for blood type or crossmatch incompatible donors including **Kidney Paired Donation** and **ABO Incompatible** transplant options. Entry into the Kidney Paired Donation program with your incompatible donor allows pairs to “swap” their donor kidneys and two recipients receive the benefit of a live donor kidney transplant. The ABO Incompatible transplant options may allow your blood type incompatible donor to be able to donate directly to you. These options would be discussed with you during your transplant evaluation.

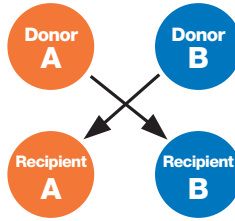
Kidney Paired Donation (KPD)

Approximately one-third of patients needing a kidney transplant have willing, but incompatible donor(s), due to a crossmatch result or blood type. Through the Kidney Paired Donation and ABO Incompatible transplant, options are available to the recipient and potential donor. The KPD program assists the donor/recipient pair who are incompatible with each other to find another donor/recipient pair with whom they can exchange kidneys, thus enabling two or more transplants to take place.



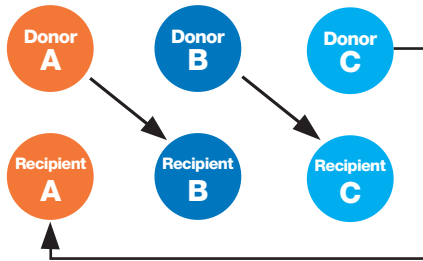
Two-Pair Exchange

A Two Pair Exchange occurs when two incompatible pairs “swap” donors to enable two compatible transplants.



Three-Pair Exchange

A Three-Pair Exchange occurs when three incompatible pairs “swap” donors to enable three compatible transplants.



Living Donor Evaluation

During the donor’s evaluation, they will meet with all members of the transplant team.

The [Transplant Nephrologist](#) will take the donor’s detailed medical history and perform a physical assessment.

The [Transplant Surgeon](#) will also take a history but will be looking at the donor’s abdomen to see if there are any scars, masses, hernias or other abnormalities that would not allow for the donation to take place. He or she will also discuss the donor surgery with the donor.

The [Donor Advocate](#) functions independently from the transplant team and ensures that the donor’s rights are protected and that the decision to donate is free from coercion.

The [Transplant Nurse Coordinator](#) serves as your primary contact by teaching you about the process and answering questions related to donation. He or she will also organize your evaluation, including coordinating the tests and consultations needed for a complete evaluation.

Other members of the transplant team may include a [Transplant Social Worker](#), a [Financial Coordinator](#) and a [Dietitian](#). The Transplant Social Worker will discuss the psychosocial impact of donation and evaluate your readiness for donation from a psychosocial standpoint. The Financial Coordinator will educate you on the financial impact of donation and evaluate whether you are financially prepared for donation.

[The Donor Team exists to ensure that the potential kidney donor:](#)

- › Is not at high risk for developing kidney disease, usually caused by chronic health problems such as high blood pressure, diabetes, and obesity, either now or in the future
- › Does not feel coerced into donating
- › Is not assuming psychosocial, emotional or socioeconomic risk by donating

The donor will undergo the following tests during a medical evaluation (additional tests may be required depending on medical history and findings on physical examination).

[Blood Typing:](#) The donor and recipient generally need compatible blood types. If ABO incompatible, we offer Kidney Paired Donation and ABO Incompatible transplant options for recipients and potential donors. The recipient and donor would have additional testing to ensure they qualify. For the ABO incompatible transplant, the recipient may need to undergo special therapy before the scheduled live donation and transplant surgery.

[Crossmatching:](#) A blood test is conducted to see if the recipient will react to the donor organ. An antibody is a protein made by the body's immune system in response to an antigen (a foreign substance like a transplanted organ). Certain antibodies can attack the transplanted organ, which we can predict by mixing donor cells with recipient blood serum, also known as crossmatching. If the crossmatch is "negative," then the transplant may proceed. This test is performed prior to the transplant.

[Tissue Typing:](#) This blood test checks the tissue (HLA) match between the donor and recipient cells. Tissue typing between the donor and recipient does not need to match to have a successful transplant.

[Blood Tests:](#) Blood test are taken to check for infectious diseases, blood count, cholesterol and basic chemistries, which give information on the function of the kidney/liver. If the donor has a close blood relative with diabetes, the donor may also have a glucose tolerance test, which screens for diabetes.

Urine Tests: Urine samples are collected for 24 hours to assess the donor's kidney function. A single sample is also obtained to check for protein and infection in the urine. Special 24-hour urine testing is done if the donor has a history of kidney stones.

Renal Ultrasound: This test assesses the donor's kidney for abnormalities.

CT Arteriogram: This test involves injecting an intravenous liquid that is visible under X-ray into the blood vessels to view the kidney and its blood supply prior to surgery.

Electrocardiogram (EKG): An EKG is performed to screen for heart disease. An exercise stress test may be performed if the donor is 40 years of age or older.

Chest X-rays: A chest X-ray is performed to screen for lung disease.

Nuclear Medicine Renal Scan: This test may be required if there is a question about kidney function on urine tests.

Living Donation Financial Resource Center

Most recipients insurance pays for the evaluation, surgery, hospital stay and initial follow-up care of living organ donors. The donor would have to make a minimum of two trips to the transplant center, one for the evaluation and one for the surgery. Insurance rarely pays for donor travel expenses.

National Living Donor Assistance Center (NLDAC): This organization was established to provide greater access to transplantation for persons who want to donate but cannot otherwise afford the travel, lodging and other non-medical expenses associated with donation. There are specific eligibility requirements, which include an application process. Eligibility is based on both the recipient's and donor's finances. NLDAC website: livingdonorassistance.org

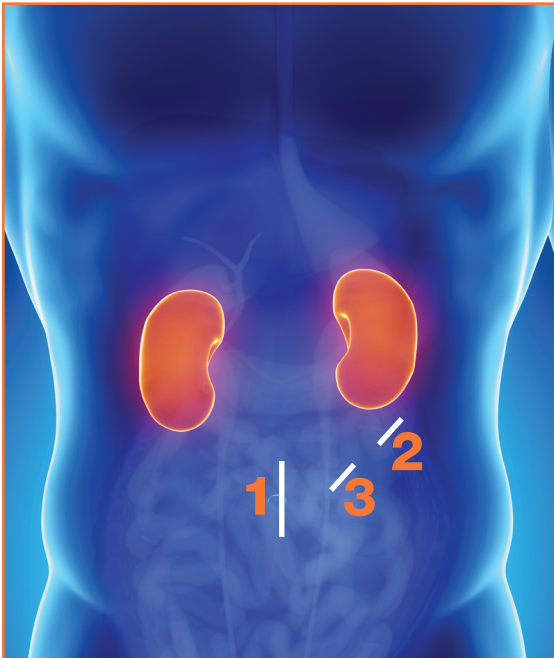
United Network for Organ Sharing: Learn more about the facts of organ donation and much more resources at UNOS website: unos.org

Living Donor Surgery

The types of surgery that living kidney donors undergo to remove their kidney has evolved significantly over the past 50 years. Laparoscopic donor nephrectomy has several benefits over open nephrectomy, including a faster recovery time, shorter hospital stay and less postoperative pain. Laparoscopic donor nephrectomy is a minimally invasive surgery that uses a camera called a videoscope and other instruments to remove the kidney through a small incision.

Halifax Health predominately uses the hand-assisted laparoscopic nephrectomy. In this procedure, one of the incisions is slightly larger to be able to accommodate the surgeon's hand, which allows the surgeon to use one hand to feel the kidney and surrounding areas. Once freed, the kidney is then removed by hand through the incision.

Hand-Assisted Laparoscopic Donor Nephrectomy



1. Hand port and extraction site approximately 2.5-3.5 inches
2. One-half inch camera port
3. One-half inch working port

Potential Risks and Complications

Kidney donation is generally very well-tolerated. Kidney donors on average live much longer than the general population, but this is because we only use very healthy donors. After donation, the lifetime risk of needing dialysis is slightly higher for donors compared with very healthy people who do not donate, but it is still well below the lifetime risk for the general population. However, rare surgical, medical, psychosocial and financial risks are possible. These risks may be temporary or permanent and can include, but are not limited to, the following:

- › Death in one out of 3,300
- › Scars, pain, fatigue and other consequences typical of any surgical procedure
- › Decreased kidney function
- › Developing abdominal or bowel symptoms such as bloating and nausea and developing bowel obstruction
- › Kidney failure and the need for dialysis or kidney transplant
- › Difficulty obtaining, maintaining or affording health, disability and life insurance. Future health problems experienced by living donors following donation may not be covered by the recipient's insurance
- › Need for lifelong follow-up with the living donor's primary care physician annually
- › Psychosocial risks, including feelings of emotional distress or bereavement, if the transplant recipient experiences graft failure or disease recurrence

Donor Recovery

Most living kidney donors will be in the hospital for two to three days after their surgery. The most common complication experienced by donors is tenderness, itching, and/or pain associated with the gas used to inflate the abdomen and/or pain at the site of the surgical incision(s). Donors may also experience gastrointestinal upset. Two weeks after surgery, the donor will be seen in our clinic for an exam to make sure everything is going well and that their body is adjusting to having one kidney. During this visit, the surgeon will review activity restrictions. At two weeks, and when no longer taking narcotic pain medicine, the donor can resume driving. Donors should not lift anything heavy (greater than 10 pounds) for about four to six weeks after the surgery. Most donors who work in an office setting return to work within two to three weeks of their surgery. Donors with more physically demanding professions generally need four to six weeks of recovery before returning to that type of work.



Follow-Up After Donation

Transplant centers are required to follow living kidney donors for at least two years after their surgery. Certain information about the health of the donor must be submitted to the United Network for Organ Sharing, as required by transplant regulations. Donors may see their own primary care physician, who can then forward the pertinent information to the transplant center. We will be contacting donors at six months, one year and two years after donation to collect required data. Donor follow-up is essential to enable the transplant community to assess the true risk of donor complications.

Resources

The internet is a convenient way to find information about transplantation and living donation. If you do not have a personal computer with internet access, you may use one at your local library. The following websites are helpful:

[United Network for Organ Sharing](#)

[Unos.org](#)

[Transplant Living](#)

[Transplantliving.org](#)

[Halifax Health – Center for Transplant Services](#)

[Halifaxhealth.org/transplant](#)

[OPTN Kidney Paired Donation Program](#)

[Unos.org/docs/Living_Donation_KidneyPaired.pdf](#)

[National Kidney Registry](#)

[Kidneyregistry.org](#)

[National Kidney Foundation](#)

[Kidney.org/transplantation/livingdonors/index.cfm](#)

[American Kidney Fund](#)

The National Kidney Fund can provide assistance with a one-time grant of up to \$100 to assist with the donor's out-of-pocket expenses, such as travel, lost wages and lodging.

[Kidneyfund.org/patient-programs/safety-nets-grants/](#)

[National Living Donor Assistance Center \(NLDAC\)](#)

NLDAC is available to those who qualify to help remove financial barriers to donation.

[LivingDonorAssistance.org](#)

[Children's Organ Transplant Association \(COTA\)](#)

Assists pediatric patients and adults suffering from genetic disorders, like polycystic kidney disease.

[Cota.org](#)

[American Transplant Foundation \(ATF\)](#)

The ATF helps to provide monetary assistance to prevent financial trouble for giving the "Gift of Life".

[AmericanTransplantFoundation.org](#)



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halifaxhealth.org/transplant

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