Kidney - Living Donor Evaluation

Who can be a kidney donor?
There are several things to consider when thinking about living kidney donation: Is the possible donor healthy and medically fit? Do the possible donor and recipient match? How will donation affect the possible donor and their family’s lives? Is the possible donor ready and able to do this?

Living donors should be 18 years of age or older. This may include blood relatives such as brothers, sisters, parents, children, aunts, uncles, cousins, nieces and nephews. It may include spouses, fiancés, in-laws, close friends and co-workers. The University of Wisconsin Hospital and Clinics (UWHC) have two other programs to help support living kidney donation. One program is the non-directed (humanitarian) program where a person can donate a kidney to any person waiting for a kidney transplant. The second is the paired exchange program, where unmatched donor and recipient pairs can enter a registry where we are able to look for a suitable paired match.

Any living donor needs to be in good physical and mental health. They cannot have a history of chronic or multiple kidney stones, uncontrolled high blood pressure, diabetes, or a current cancer. Some other health problems such as many kidney or bladder infections, heart disease, or other major health issues will be looked at on a case-by-case basis to decide if a person is healthy enough to donate.

The benefit of live donation to the recipient
Studies have shown that long-term success for the recipient is better with living donor kidney transplants. With a living donor, the health of the kidney is well known. The donor is a healthy person who has just had a complete medical evaluation.

Having a kidney from a living donor lets you plan for the surgery. The transplant date is made ahead of time, unlike a deceased donor transplant where the surgery date can happen at any time. Recipients may not need to begin dialysis and may not have the long waiting period often linked with the waiting list. A living donor has not had a medical trauma, like a person whose kidney is donated at the time of death. Most often, the living donor kidney will start to work right away where as the deceased donor kidney may have some delay in starting to work, for several days.
What do I do if I want information about living kidney donation or if I want to be tested?
We recommend, if possible, that any possible kidney donor come to the recipient’s transplant evaluation. It is important for a possible donor to understand facts both about kidney donation and kidney transplant. If this is not doable, the potential donor can call the coordinator after the recipient’s evaluation to get the information and/or be tested.

What happens when I consider being a living kidney donor?
First, a brief health history is taken. If suitable, a blood draw will be done for blood typing and matching. This can be done locally if the donor wasn’t able to come to the recipient’s clinic visit. The coordinator will help arrange for the blood work to be drawn at a local lab. The results from the blood typing are done in about 1-2 weeks.

Who can receive my kidney?
What is a match? Blood tests are needed to see if the donor is a good match to the recipient. This is also called tissue typing. The process called tissue typing is done using blood samples from both the potential donor and recipient. These tests look at: ABO blood type, antigen type (HLA-type) and donor specific antibody (DSA) levels.

**Blood Type.** There are four blood types: A, B, AB and O. A person’s RH factor (positive/negative) does not matter for matching with a kidney transplant but the blood type between the donor and the recipient should be compatible. The chart below shows what a well-matched blood type is for each blood group.

<table>
<thead>
<tr>
<th>If a RECIPIENT is Blood Type:</th>
<th>The DONOR must be Blood Type:</th>
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<tbody>
<tr>
<td>O</td>
<td>O</td>
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<td>A</td>
<td>A or O</td>
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<tr>
<td>B</td>
<td>B or O</td>
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<tr>
<td>AB</td>
<td>A, B, AB or O</td>
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**Antigen matching (HLA-type).** Each of us is born with 46 special cells that make up the body’s genetic code. These cells are called chromosomes (DNA – genetic markers). The sixth chromosome affects our immune system. It is the immune system that controls the rejection process after a transplant. On this sixth chromosome we are matching six specific antigens.

Though it is thought the more antigens matched the better, matching them is not needed. With today’s improved anti-rejection medicines, matching antigens is not needed. Once the antigen typing is done we will then look at the Donor Specific Antigen (DSA) levels.

**Donor Specific Antibody levels** are measured using the recipient’s blood. Over a person’s life time antibodies are formed as a protective process of the body. A blood test is done for all recipients that identify any antibodies the recipient has made against human DNA (the genetic makeup of a person). We are then able to look at whether a recipient has any antibodies that may react towards the donor, in other words a Donor Specific Antigen Level (DSA level). The DSA level is a number that tells the degree of reaction a recipient has towards a donor.
In order to move forward with transplant, you must be a compatible blood type and have an acceptable DSA level. You do not need to match any antigens with the recipient. The DSA level will tell us what anti-rejection medicine or treatments a recipient needs before surgery.

What if I am the Wrong Blood Type or the DSA levels are too high?
There is a way for willing kidney donors to donate for a planned recipient even if there isn’t a good match. UWHC has a paired kidney-exchange program that is designed especially for this situation. When a recipient has willing donors who are not compatible this option will be discussed.

The paired exchange program will try to find a match for you and your intended recipient with another donor and recipient pair. If medically suitable, each donor could donate his or her kidney to the other recipient. In this way, both recipients would get a matching kidney from an unrelated living donor.

Blood Type incompatible transplants are possible in certain situations but because of added risks involved with this type of transplant, it should be considered only if totally necessary.

How is a living donor evaluated?
Once the blood typing is done and the most suitable donor is known, a complete medical evaluation can be scheduled. The medical evaluation is done on one person at a time. If, for some reason, the first person tested is not able to be the donor, another person can then be evaluated.

It is best if the medical work-up takes place at UWHC. This allows the possible donor a chance to visit the hospital and meet the doctors, coordinator and other members of the transplant team. The work-up is done as an outpatient and most often takes a full day to complete. If you don’t live nearby, we can set some testing up closer to your home with the help of a local doctor or transplant center. If the work-up is done outside of UWHC, it may take longer to complete. All non-directed (“humanitarian”) donors must have the work-up at UWHC. The non-directed donor evaluation usually needs at least two separate visits to complete.

The medical evaluation includes:

- A complete history and physical
- An interview with a donor surgeon
- An interview with a kidney specialist/medical doctor
- A chest X-ray
- An EKG
- A 24-hour urine collection
- A urinalysis with urine culture
- A spiral CT/CAT scan of your abdominal organs; which includes the kidneys and the kidney’s blood vessels
- Blood tests
- A Social Work/Health psychology evaluation
- A dietitian evaluation
- A living donor advocate evaluation
- Transplant Nurse Coordinator meeting

**The blood tests:**

- A glucose tolerance test HgbA1C (a screen for diabetes)
- Routine chemistry and hematology panels
- Clotting studies
- Viral infection screening

**Blood samples** are drawn to make sure you and the kidney recipient will be a good match. Other blood samples are drawn to make sure you are in good health. The site where your blood is drawn might have a small amount of bruising or be painful.

**Urine samples** will be done. This includes a 24-hour urine collection for protein and creatinine clearance. This tells us how well your kidneys are working. A urinalysis and a urine culture are also done. These tests can detect any kidney problems or infection.

You will also have a **chest x-ray and ECG (electrocardiogram)** to be sure you have no problems with your heart or lungs.

**Glucose tolerance test** (GTT) is a blood test that looks at your blood sugar (glucose) levels. This test is done to make sure you do not have diabetes or are at risk of having diabetes in the future. For a GTT, you drink a sweet liquid after not eating for 12 hours. A series of blood samples are drawn after drinking the liquid. The test takes about 2 hours.

The last test done is a **Spiral CT/CAT scan.** This is a test that looks at where your kidneys are and their blood vessels. It helps the surgeon decide which kidney should be used and whether laparoscopic surgery can be done. It also evaluates other organs in the abdomen. A CAT scan can see if there are problems. **If you have any known allergies to contrast dyes, seafood or shellfish, be sure to tell us before having this test.** If you have any of these allergies, you will receive medicine before the test, or they may do an MRI scan instead.

After all the tests are finished, it takes about one week to collect the results. More tests or consults with other doctors may be needed once the test results are reviewed. These often, but not always, can be done closer to your home.

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**Once a person is approved to donate and the recipient has been cleared, the date for the transplant can be set.**

During your workup, certain unknown problems may be found. These findings may disqualify you as a kidney donor. If you are not suited to donate a kidney, further care may be advised. You should follow up with your local doctor. The cost of this follow up care will be your responsibility. With your consent, records from the donor evaluation will be sent to your local doctor. Having certain diagnoses could make it harder to get private health or life insurance in the future.
What does it cost to donate a kidney?
The recipient’s insurance and/or Medicare will cover the donor medical work-up, the hospital stay, any doctor charges, and a few clinic visits after the surgery. If you receive any bills for the work up or hospital stay, please call the transplant office at (608) 263-1384.

Unfortunately, the recipient’s insurance typically will not pay for travel costs and does not cover a donor’s time off work. These are a donor’s responsibility. If you are working, and have disability insurance, the time needed off from work to donate a kidney may be a covered benefit. Other employers may require you to use your sick time. You should check with your employer to see what benefits you have. The Social Worker can assist you with planning for these expenses. A federal government grant is now available to donor’s to help offset some of these costs. Certain household income criteria must be met in order to qualify for this assistance.

If you live in Wisconsin, you may qualify for benefits under the Wisconsin Donor Tax Exemption Bill. Also, State of Wisconsin employees may qualify for special leave time under Act 125. The Social Worker or coordinator can give you more details about this.

Two Different Types of Donor Surgery - Open versus Laparoscopic (“Lap”) Approach

Laparoscopic surgery is a less invasive type of surgery. Often the recovery time and pain are less. Special instruments and a video monitor are used to look at the kidney and blood vessels and to remove the kidney. A donor must meet certain standards for this type of surgery. Most donors are able to have the surgery done this way.

A person who has had major abdominal surgery and/or has difficult left and right-sided kidney anatomy may not be able to have this type of surgery. Your coordinator and doctor will talk about this with you.

The laparoscopic method uses 3-4 small incisions (about 1 inch each) on the abdomen for the instruments and the tiny camera. There is also one larger incision (about 3-4 inches) made below the belly button. This is where the kidney is taken out. Some donors are now able to have a Laparoscopic surgery that uses only one incision. Your surgeon will let you know if this is possible for you. Laparoscopic surgery may take about 3 hours to do. This is slightly longer than the open method.

Even though this is a more technical surgery to perform, most donors at our center have the laparoscopic surgery. It is important to know that if problems occur during a laparoscopic surgery, the surgeon may have to change to the open method to remove the kidney. This very rarely happens but is a possibility.
Open surgery allows the surgeon to see the kidney and blood vessels directly. This surgery is used in patients with more complex kidney anatomy, such as several blood vessels or who have had major abdominal surgery in the past.

With open surgery, the incision is on the right or left side of the abdomen and extends around the side. The doctor will decide which kidney is best to remove. The open incision is about 8-10 inches in length. Open surgery will take about 2-3 hours.

**The Hospital Stay**
The donor will come to the hospital as an outpatient the day before the surgery for a pre-surgery work-up and anesthesia visit. If you do not live nearby, hotel stays the night before surgery will be provided. The morning of surgery you will come to the hospital and check in at First Day Surgery. After the surgery you will be taken to your hospital room. Your nurse will get you up to walk about 4-6 hours after surgery. The average hospital stay is 3-4 days.

**Please bring comfortable loose fitting clothing and walking shoes. Walking often helps prevent pneumonia and blood clots. It also helps restore normal bowel function.**

Once discharged from the hospital you will recover at home for another 2-6 weeks. It may take as long as 4 to 6 weeks before you feel close to normal. We ask you to limit your daily routines, such as no driving, heavy lifting or strenuous activities. You should not lift more than 10 pounds or do strenuous activities/exercise for about 4-6 weeks. You should be able to start driving again when you are no longer taking any pain pills. Your surgeon will let you know when you can begin to increase what you are doing.

**What long-term follow up is needed and recommended?**
You will have check-ups that are covered by the recipient’s insurance at one month and between 4-6 months after surgery.

After that time, we suggest that you see your local doctor every year for a complete check-up after donating a kidney. This exam should include a physical exam, a blood pressure check, blood creatinine level and urine testing to see how your kidney is working. The cost of the annual check-up will be your responsibility.

**Hotel Accommodations**
If you are coming from out of town, you and your family may want to stay in Madison the night before any clinic visits or the hospital stay. The UWHC Housing Office, (608) 263-0315, has a list of nearby hotels to choose from. A discount rate is given when you make the reservations through the hospital housing accommodations office.
Parking and Validation
One visitor can have a parking pass validated before leaving the hospital. You can have this validated at the Admissions Desk/Information Desk during normal business hours.

Phone Numbers
Transplant office number: (608) 263-1384
Fax Number: (608) 262-5624
Main Hospital number 1-800-323-8942 (you will need to ask for the transplant office telephone number listed above or the department number you want to reach)

The Spanish version of this Health Facts for You is #6543.