



Transplant Alliance

Living Kidney Donor Education Guide

Table of Contents

Welcome	3
Your Donation Journey	4
Who is on the Living Donor Team?	5
Your Kidneys	7
End Stage Renal Disease (ESRD)	
Dialysis	
Transplant	9
Who Can Be a Living Donor?	
Who Pays for the Evaluation and Surgery?	
Donor Evaluation Process	13
The Donor Evaluation	
Risks Associated with Evaluation of Living Donor	
Am I a Match?.....	16
Blood Compatibility	
Tissue Typing	
Cross Matching	
What if I am Not a Match?	
Living Donor Selection Committee	19
Risks of Donation.....	20
Preparation for Surgery.....	22
Kidney Donation Surgery	24
Donor Surgery	
After Surgery	27
Hospital Recovery	
When Can the Donor Return to Normal Activities?	
Are There Any Dietary Restrictions After Donation?	
Incisional Care	
Early Problems After Donation	
How Does Living Donation Affect the Donor?	31
Recovery and Long-Term Care	
What if I Feel Emotional After Donation?	
Conclusion	
Frequently Asked Questions (FAQs) About Living Donor	33
Your Quick Guide to WVU Medicine.....	35
Glossary and Resources.....	37
Notes and Questions	41

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Transplant Office Hours

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Closed on weekends and holidays

WELCOME

Thank you for your interest in the living donor kidney transplant program at the WVU Medicine Transplant Alliance. This educational guide has been developed to help explain what you may expect during the living kidney donor evaluation process, including potential medical, surgical, and psychosocial risks and the living kidney donor surgery. Each person is unique, so not all of the information provided in this guide will apply to everyone.

The WVU Medicine Transplant Alliance is committed to providing supportive and respectful patient-centered care and understands the most important member of the team is the patient. We are committed to keeping you informed and helping you become an active partner in your healthcare.

On behalf of the WVU Medicine Transplant Alliance, we would like to welcome you and thank you for entrusting us with your care. Please review the information we have provided you in this guide. Read it thoroughly, and share it with your support team. We encourage you to bring this guide with you to each visit. If you have any questions prior to your evaluation visit, either write them down, or feel free to call the Transplant Office at 304-974-3004 or the Independent Living Donor Advocate Team at 304-598-4134 (Spiritual Care Office).

In addition to the information provided in this guide, please see and review the following additional items: MyWVUChart, the Living Kidney Donor Rights Form, and the Living Kidney Donor Informed Consent for Evaluation. We encourage you to utilize this guide throughout your donation journey.

We look forward to meeting you and being your partner on this journey!

WVU Medicine Transplant Alliance
Living Donor Transplant Team

Your Donation Journey

As you go through this journey, the Transplant Team will be with you each step of the way. The following pages serve as a basic overview of what to expect throughout your journey, from evaluation to living donor surgery.

The decision to donate a kidney is a serious one for the donor and for the recipient. Both are likely to have mixed feelings, which is normal. The recipient may find it difficult to ask a family member or a friend to donate a kidney. At the same time, the donor may be hesitant to offer because he or she does not know what is involved. The information in this educational binder is to help you fully understand all that is involved in living kidney donation. We want to help you make the decision that is best for you. Please feel free to ask us any questions you might have at any point in the process. We, at WVU Medicine Transplant Alliance, believe all potential donors, both living and deceased, are true heroes.

You may change your mind and decide not to donate your kidney at any time during the donation process. The Transplant Team will fully support this decision. If you choose not to donate, we will only disclose to the recipient that we are not able to proceed and no other information will be shared.

All living donors are assigned an Independent Living Donor Advocates (ILDAs) and will have the opportunity to meet/talk with them throughout the entire donation process. The ILDA is responsible for representing and advising you, protecting and promoting your interests, and ensuring that your decision is informed and free from coercion.

Who is on the Living Donor Team?

LIVING DONOR TEAM- A group of professionals at the transplant program who work to make living donation an option. Each person on the team is an expert expert in their respective areas.

Member	Role
You/Living Donor Hero	<ul style="list-style-type: none"> /// Learn about living donation as an option for kidney transplant /// Decide if you want to be a living donor /// Participate in the evaluation process /// Discuss needs and concerns with the team and ILDA /// Complete all required testing /// Continue to communicate with team and ILDA /// Complete required post-donation follow-ups at 2 & 6 weeks and 6, 12, & 24 months
Family/Support Team	<ul style="list-style-type: none"> /// Learn about donation and ask questions /// Accompany donor to appointments /// Support donor's decision
Independent Living Donor Advocate (ILDA)	<ul style="list-style-type: none"> /// Protects and promotes your interests /// Assists you in making informed decisions, while balancing external pressures involved in the donation process /// Is a representative of the transplant program but not a member of the transplant recipient team /// Works only with you (not your recipient) and will keep your welfare as his/her primary focus
Donor Surgeon	<ul style="list-style-type: none"> /// Surgical evaluation, including medical history, physical exam, and ordering tests /// Educates you on the living donor surgery and risks /// Performs the operation /// Cares for you following the donation
Donor Nephrologist	<ul style="list-style-type: none"> /// Medical evaluation, including history, physical exam and ordering tests /// Educates you on the donation process and long-term risks /// Cares for you after donation

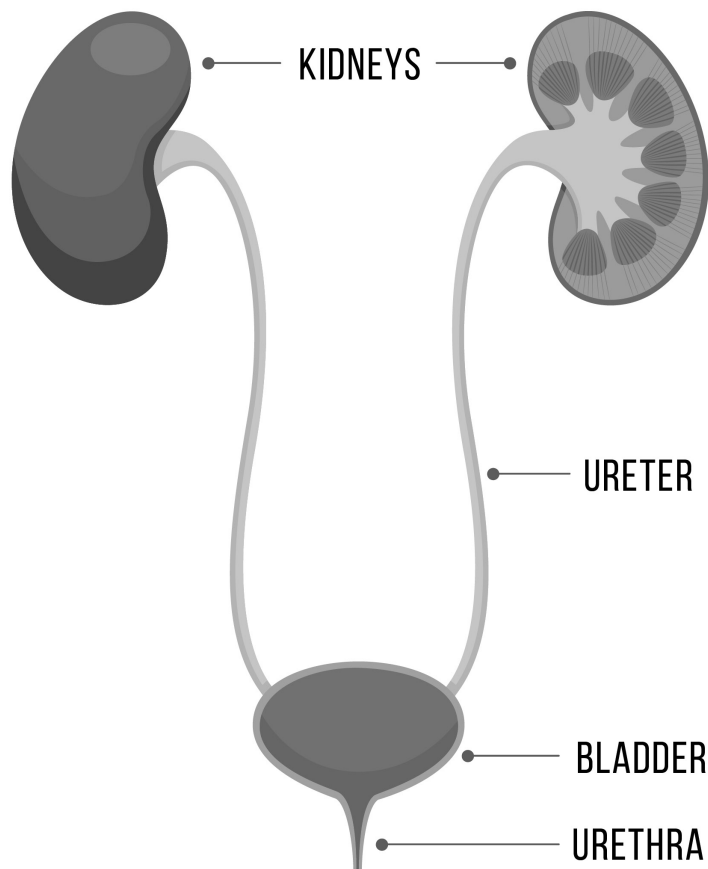
<p>Living Donor Coordinator</p> <p>Your point of contact at WVU Medicine Transplant Alliance</p>	<ul style="list-style-type: none"> // Provides education about the donation process // Is your advocate throughout the donation process and answers questions you may have // Organizes information about your case for the Living Donor Selection Committee // Monitors testing results during the evaluation process and in the follow-up period // Maintains communication between you, your doctors, the ILDA, and Transplant Team // Coordinates the admission for the donation // Coordinates post-donation care
<p>Transplant Social Worker</p>	<ul style="list-style-type: none"> // Evaluates your ability to cope with the stress of donation // Helps you and your family with emotional concerns before and after the donation
<p>Transplant Dietitian</p>	<ul style="list-style-type: none"> // Assesses your nutritional status and dietary knowledge // Provides education and recommendations for your diet // Helps you develop, begin, and maintain any dietary changes
<p>Transplant Pharmacist</p>	<ul style="list-style-type: none"> // Evaluates your current medications list, including prescribed and over-the-counter medications and supplements
<p>Transplant Financial Coordinator</p>	<ul style="list-style-type: none"> // Reviews your insurance coverage and benefits // Helps you understand your insurance policy // Reviews coverage for donation process under recipient's insurer
<p>Administrative Staff</p>	<ul style="list-style-type: none"> // Schedules your evaluation and follow-up appointments // Answers Transplant Alliance telephone, taking detailed messages for the team members
<p>Other Referrals</p>	<ul style="list-style-type: none"> // Each patient is assessed to determine if other specialists are needed

Your Kidneys

The kidneys are a pair of reddish-brown organs located on either side of the spine just below the diaphragm. They are bean-shaped and about the size of your fist. Kidneys keep us alive by:

- // Maintaining stable chemical and water balance
- // Removing waste from the blood
- // Removing extra water from the body
- // Keeping bones healthy
- // Releasing hormones that control blood pressure
- // Controlling production of red blood cells

Each day, the kidneys clean the blood by filtering some 50 gallons of fluid. Most of the fluid is reabsorbed into the body. What is not reabsorbed is combined with filtered body waste to form urine.



The figure above shows the kidneys and urinary system:

Ureters are connected to the kidneys and carry urine to the bladder, where it is stored. The urethra is a tube that carries urine from the bladder out of the body.

END STAGE RENAL DISEASE (ESRD)

ESRD occurs when kidney function falls to less than 15 percent of normal capacity. When the kidneys “fail,” they do not work the way they should. Renal failure is the inability of the kidneys to remove wastes and maintain electrolyte balance. Acute renal failure (ARF), characterized by the inability to produce urine and an accumulation of wastes, is often associated with trauma, burns, acute infection, or obstruction of the urinary tract. Chronic kidney disease (CKD), which may occur as a result of many systemic diseases, such as diabetes, hypertension, and congestive heart failure, causes fatigue, sluggishness, decreased urine output, and/or anemia. The treatment depends on the cause, often involving the use of diuretics, restricted protein intake, and, if the kidney failure cannot be otherwise treated, dialysis and/or transplantation.

DIALYSIS

Dialysis is a way to remove waste products from the blood when the kidneys cannot do the job any longer. The different types include hemodialysis and peritoneal dialysis.

In hemodialysis, a machine cleans the blood and returns it back to the body. It typically requires repeated treatments, usually three times a week.

During peritoneal dialysis, a cleansing fluid flows through a tube into the abdomen. The lining of the abdomen (peritoneum) acts as a filter and removes waste products from the blood. After a set period of time, the fluid with the filtered waste products flows out of the abdomen and is discarded.

Dialysis cannot totally replace the work of healthy functioning kidneys. It can remove waste products but cannot make the hormones the body needs or function as well as healthy kidneys.

While dialysis is lifesaving, it can profoundly disrupt a patient’s lifestyle and potentially shorten a patient’s life expectancy.

Transplant

Kidney transplant is a treatment option for kidney failure. A donor kidney means a chance to return to a healthy life. For individuals who are receiving dialysis therapy, a kidney transplant is an opportunity to begin a new life and offers the best chance for rehabilitation and long-term survival. For some, a donor kidney means a chance to spend more time with family. For others, it may mean a chance to return to work, a chance to travel, or perhaps a chance to start a new way of life.

There are two ways patients can receive a kidney transplant:

- /// **Living Donor:** A healthy person may donate one of his/her kidneys to a candidate approved for a kidney transplant. This option greatly reduces the length of time a candidate will wait for a transplant. A living donor can be a family member, spouse, friend, or a Good Samaritan.
- /// **Deceased Donor:** A candidate may also receive a donated kidney from a deceased person who previously registered to be an organ donor or whose family wishes to donate his or her organs at the time of death.

Unfortunately, there are more people waiting for a deceased kidney transplant than there are available donors. Therefore, candidates with ESRD considering kidney transplantation are encouraged to look for a potential living donor.

The first successful living kidney donor transplant was performed in 1954; the donor was the recipient's twin brother and survived for 56 years following donation. Since then, living donation has been an option. Most donors state that they are happy that they donated.

We ask each potential kidney transplant recipient to ask their family and friends to check if any of them would be willing to donate one of their two kidneys. A living kidney donor is an ideal option because:

- /// In general, kidney transplants from living donors last longer and function better than those from deceased donors.
- /// If a suitable living donor is not identified, the recipient may wait many years for the transplant from a deceased donor who is a match. A recipient of a living donor gains life expectancy because he/she does not have to wait as long.
- /// With a living donor transplant, the surgery can be scheduled at a convenient time once the evaluation process for the donor and the recipient has been completed and approved by the Transplant Team and Living Donor Team.

WHO CAN BE A LIVING DONOR?

The donation of a kidney is a decision that must be made by a consenting adult (18 years or older). It is important that you understand that there is no medical benefit to you from donating a kidney, and that there are risks, as well as the benefits, involved in donating a kidney to another person.

To qualify to be a living donor, you must be in good-to-excellent physical and emotional health and have normal kidney function and anatomy. Medical health insurance is strongly recommended. You must also have minimal risk for developing any financial hardship when you are out of work recuperating. A strong support system to help during your recovery period is essential.

There are several situations that would prevent someone from being a living kidney donor. If you have any of the following problems, you would be automatically **denied** as a living donor:

- // Diabetes or pre-diabetes (positive Glucose Tolerance Test)
- // Active Hepatitis B
- // HIV
- // Coronary Artery Disease and/or Peripheral Vascular Disease
- // Significant lung disease
- // Polycystic Kidney Disease (PCKD)– if you have a family history, you may be able to donate if you do not have any cysts on your kidneys that are detectable by ultrasound or CT Scan
- // Obesity – Overweight with a body mass index (BMI) greater than 34; or BMI greater than 30 with other related medical issues
 - <https://www.cdc.gov/widgets/healthyliving/index.html#bmiccalculator>
- // Socially or psychologically maladjusted or incompetent to make decisions
- // Donor is younger than 18 years old
- // Active substance abuse
- // Cancer and/or some forms of pre-cancerous lesions
- // Coercion and/or payment in any form
- // Active infection
- // Uncontrolled high blood pressure

WHO PAYS FOR THE EVALUATION AND SURGERY?

The cost of the living donor's evaluation and surgery are paid by the recipient's health insurance; however, routine health maintenance is the financial responsibility of the donor and/or the donor's insurance. Routine health maintenance is not covered by the recipient's insurance or by the transplant program. Some of these costs may include, but are not limited to, yearly physical examination with blood work, PAP smear, mammogram, colonoscopy, and stress test, if needed.

A major concern among those who wish to be a kidney donor is how medical costs and hospitalization will be paid. Most patients with kidney failure are eligible for benefits covered by Medicare. They may also have additional insurance from their employer. These benefits are extended to their potential living donors. The donor evaluation, donor surgery, hospitalization, and follow-up medical care are, in most instances, paid for by the recipient's insurance.

If the recipient's insurance does not cover those items, the Transplant Program assumes responsibility.

However, the recipient's insurance does not pay for the loss of income during hospitalization and recovery, transportation costs to and from the hospital, or any other non-medical costs that would arise because of not being able to work for that period of time. If there are any problems regarding any of these issues, the Transplant Center team will work with you to address these concerns.

If complications related to the donation occur, the recipient's insurance or the Transplant Program will usually pay for the medical treatment.

All donor complications must be reported immediately to the Transplant Team before any medical treatment is given, unless it is emergent.

After donation, there is a chance you could be denied medical, life, or disability insurance coverage. This is a potential risk that you should fully understand prior to donation. You may want to consult with your insurance provider ahead of time.

There is **NO** financial compensation for organ donation. Under federal law, "it is unlawful for any person to knowingly acquire, receive, or otherwise transfer any human organ for valuable consideration for use in human transplantation." However, under the National Organ Transplant Act (NOTA), recipients can reimburse the donor for expenses incurred during the donation process, including travel, housing, food, and lost wages.

Potential Financial Risks:

- // Personal expenses of travel, housing, childcare costs, and lost wages related to donation are not reimbursed; however, resources may be available to defray some donation-related costs through the National Living Donor Assistance Center (NLDAC)
- // Need for life-long follow-up at the donor's expense
- // Need for donor to maintain health insurance
- // Loss of employment or income
- // Negative impact on the ability to obtain future employment
- // Negative impact on the ability to obtain, maintain, or afford health, disability, and life insurance
- // Future health problems experienced by living donors following donation may not be covered by the recipient's insurance

Time off from work and travel expenses are not covered by the Transplant Program, Medicare, or private insurance. However, donors may be eligible for sick leave, short-term disability, or the Family and Medical Leave Act (FMLA). Some follow-up expenses may also not be covered, so it is important to discuss these matters with the Transplant Team. Be sure to check your specific insurance policy or ask the Transplant Financial Coordinator about concerns related to your specific circumstances.

The donor evaluation, testing, and surgery charges should not be billed to you. With multiple departments at WVU Medicine that send bills, it is possible you may get a bill, or a bill may be sent to your insurance in error. If you are incorrectly billed, please call the Transplant Program Financial Coordinator immediately. Once we know you have been billed, we can correct the problem. To ensure timely payment and avoid collections, do not delay in notifying the Transplant Program of bills received in error.

There is federal assistance available to donors who meet requirements through the National Living Donor Assistance Center (www.livingdonorassistance.org). It may aid with hotel, travel, and meal expenses related to the donor evaluation and surgery. Your Living Donor Coordinator or Social Worker can assist you in filing the application. A copy of the donor's and the recipient's most recent tax return will be required for proof of income.

Remember: We strongly recommend all donors to have active medical insurance coverage and that the Transplant Program be notified of any insurance changes. The lack of medical insurance does not negate the donor's financial obligation should a new medical finding or unrelated complications arise.

Donor Evaluation Process

Providing medical health information is an **absolute necessity prior** to beginning the donor evaluation process. Since some donor health conditions may prevent the donation and/or transplant from being successful, it is important that you share all information about your physical and mental health. The Transplant Team may find things at any stage of the evaluation process that would make it unsafe for you to donate; we could find potentially serious health problems that you did not know existed. If this occurs, the evaluation process will be stopped, and you will be referred back to your primary care provider for care. The Transplant Program's goal is not only to ensure that all donors are healthy enough to donate but also that they do so with no or minimal complications. Additionally, some medical problems in the donor can affect the recipient's outcome following transplantation.

You will be asked to complete a health history questionnaire prior to scheduling the evaluation appointment:

Information requested will include:

- A history and physical within the past 12 months
- Height
- Weight
- Blood pressure
- Blood work results
 - Chemistry panel
 - Fasting blood sugar
 - Fasting lipid panel
 - CBC
 - PSA for all males over 50 or younger, if deemed necessary

A recent PAP smear for all females over 21 years old (within the last 36 months)

A recent mammogram for all females 40 years old or if deemed necessary

A colonoscopy for everyone who is 45 years old or if deemed necessary

Any cardiac testing completed

Infectious diseases screening

THE DONOR EVALUATION

Before you begin your evaluation, you will receive some education from the Living Donor Coordinator. You will complete a brief health screening and talk with an ILDA. We want to be sure that you are comfortable with your decision to donate. If you change your mind at any time, you can choose to stop the process. Your decision to stop the process will be respected.

The living donor evaluation process will begin once your intended recipient has been evaluated and accepted into the program. The donor evaluation is extremely thorough. The purpose is to evaluate your physical, emotional, and financial capacity to donate and inform you about

specific risks to your health. It is important to be checked for risk factors that may cause kidney disease later in the donor's life. You will be asked about your financial situation, as well as who is available to give you physical help and emotional support throughout the entire donation process. Involving your loved ones throughout the entire donation process is very helpful.

The results of your evaluation will be kept confidential under the Health Insurance Portability and Accountability Act of 1996 (HIPAA). **The transplant candidate cannot access your personal information.**

The donor evaluation testing can be completed at a WVU Medicine hospitals. If testing needs to be completed outside of WVU Medicine, we will need to make arrangements for the billing of the procedures to come to the WVU Medicine Transplant Alliance.

As a potential living donor, you will go through a complete medical and psychosocial evaluation to see if you can be a donor. In addition, we will also assess the short- and long-term risks of donation to your overall health. The tests may include but are not limited to:

- // Complete history and physical examination with a Transplant Nephrologist and Donor Surgeon
- // EKG (to evaluate the heart): if abnormal, additional testing may be required
- // Chest x-ray (to evaluate lungs)
- // Kidney ultrasound
- // 24-hour urine collection (to assess kidney function)
- // Kidney and blood vessel imaging: CTA or MRA (to look at the blood vessels to the kidney)
- // Lab studies
- // Meeting with the Living Donor Coordinator
- // Meeting with and evaluation by the Transplant Social Worker
- // Meeting with and evaluation by the Independent Living Donor Advocate (ILDA)
- // Meeting with and evaluation by the Transplant Dietitian
- // Meeting with and evaluation by the Transplant Pharmacist
- // Meeting with and evaluation by the Transplant Financial Coordinator
- // Additional testing needed will depend upon your medical history

Donor confidentiality will be maintained at all times. You have the right to withdraw from evaluation at any time, and your decision will be respected.

RISKS ASSOCIATED WITH EVALUATION OF LIVING DONOR

The following are inherent risks associated with evaluation for living donation. These risks may be short term or permanent, and include, but are not limited to the following:

- // Allergic reactions to contrast dye
- // Discovery of reportable infections
- // Discovery of serious medical conditions
- // Discovery of adverse genetic findings unknown to the donor
- // Stress

Am I a match?

BLOOD COMPATIBILITY

One step in the donor evaluation is to determine whether the potential donor has a compatible blood type with the intended recipient. This is called ABO blood testing. Blood is typed as O, A, B, and AB. Even though some blood types are not the same, they may still be compatible with others (see below). If you are not compatible with your recipient, you are still able to be a donor. You may be able to help your recipient and another person in need.

Blood Type	Can receive from	Can donate to
O	O	O, A, B, AB
A	A, O	A, AB
B	B, O	B, AB
AB	O, A, B, AB	AB

TISSUE TYPING

In addition to the blood type compatibility, donors and their recipients must have compatible tissue typing. A tissue type test is a blood test that measures cell markers called antigens that are present on the surface of white blood cells. Checking the antigens can tell if the donor kidney is compatible for transplant to another person. This test may also be called HLA typing. Half of each person's antigens come from the mother and half from the father.

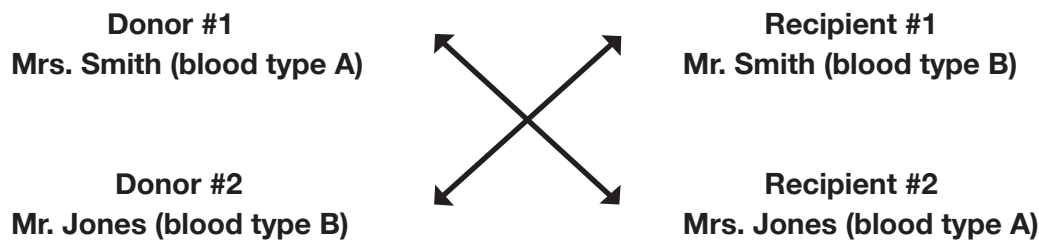
Identical twins have the same pattern, but everyone else has his or her own special pattern. Full biological brothers and sisters have a 1-in-4 chance of having an identical match. Transplant recipients who match their donors perfectly (6 out of 6 antigens) have lower risks of rejection. The cross match is important to determine if the potential donor and recipient are compatible.

CROSS MATCHING

If blood types are compatible, the next step is cross matching. This involves taking blood from the recipient and mixing it with blood cells from the potential donor. This test is done to see if the recipient has antibodies against the donor's blood cells. Recipients develop antibodies, also called Panel Reactive Antibodies (PRA), most commonly through prior transplant, skin grafts, blood transfusion, or pregnancy. If antibodies are present and the recipient's blood cells react to the donor's blood cells, it is called a positive/incompatible cross match. If the cross match is positive/incompatible, the donation cannot move forward because the recipient's body will reject the kidney.

WHAT IF I AM NOT A MATCH?

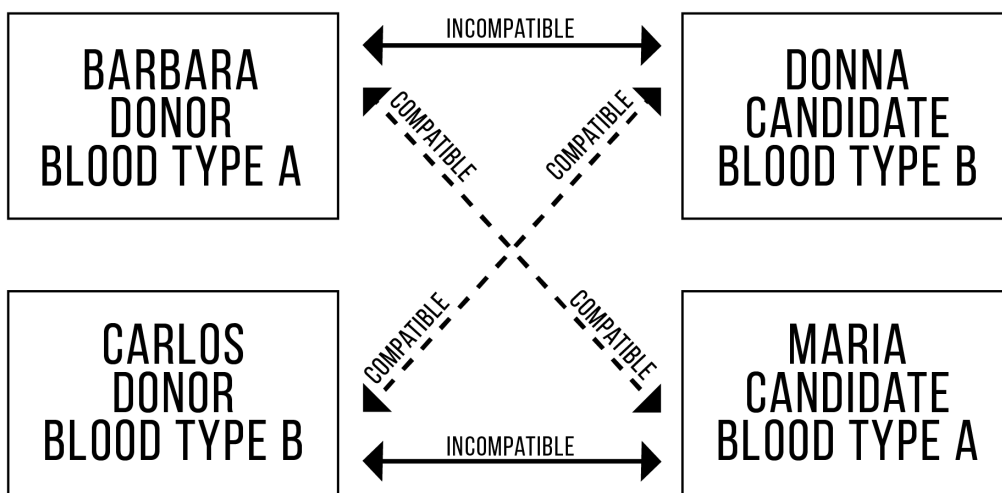
If your blood types are not compatible or the tissue typing tests confirm you are cross match positive, there are other options. Your Donor Coordinator can offer you information about Kidney Paired Donation (KPD). These programs match "incompatible" pairs through a computer database. This national program is designed to help recipients who may be difficult to match. It also gives "incompatible" donors a chance to help their loved ones by exchanging kidneys with another incompatible pair. The following example demonstrates one type of match:



The two pairs are incompatible, so a “trade” is made so that each candidate receives a kidney from the opposite donor.

Once the pairs are identified, further testing may be requested. This is a voluntary program that must be consented upon by both recipients and the donors. Each participant must sign a registry form and consent form.

Kidney Paired Donation (KPD)/Paired Exchange is an approach to living donor kidney transplantation where candidates who have an incompatible (poor match) living donor, who is medically able to but cannot donate a kidney to their intended candidate. KPD is utilized when the donor is still willing to donate in a swap to get their recipient a kidney transplant. The swap consists of two or more kidney donor/recipient pairs whose blood types are not compatible. The two recipients trade donors so that each recipient can receive a kidney with a compatible blood type.



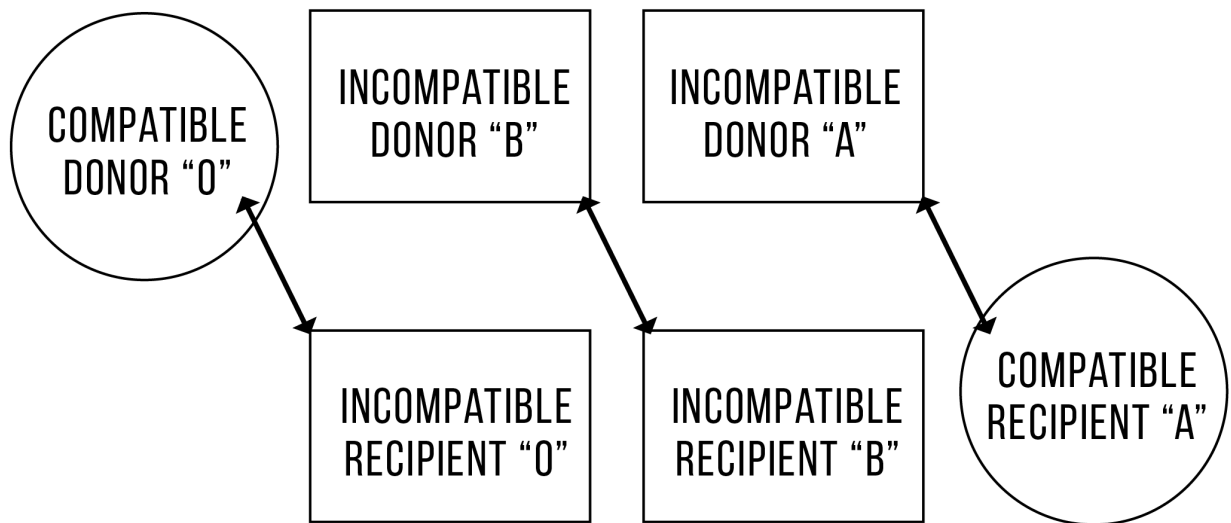
The Transplant Team will contact you and the candidate when a match is found. Testing will be arranged to confirm the match is a good one. Once all donors and recipients have been tested, the kidney transplant surgeries can be scheduled. Donors can complete their donation at the hospital where the work up occurred, or they could travel to your matched candidate’s hospital for surgery.

After surgery, donors and recipients can meet or connect with each other. Both the donor and the recipient must agree to meet.

Compatible share is when the donor kidney and recipient that are biologically compatible, but a different donor might provide a better match (due to size, age, and other factors). An improved match between the donor and recipient will increase the chance that the transplanted kidney will function better and last longer.

Some compatible pairs are favorable for compatible share because the donor blood type is O, and the recipient is blood type A, B, or AB. This would allow the compatible pair to exchange with one or more incompatible pairs and results in each recipient receiving a compatible transplant. Many incompatible pairs wait long periods for compatible matches because of the lack of blood type O donors.

Donor and recipient pairs must meet the same medical, psychosocial, and ethical criteria used during the standard living donor transplant. All pairs remain anonymous to each other prior to transplantation.



Living Donor Selection Committee

Upon completion of the evaluations and testing, your case will be presented to the Living Donor Selection Committee (LDSC) and the multi-disciplinary team for evaluation. The committee will review your medical and psychosocial data. Upon approval from the Patient Selection Committee, the surgery may be scheduled. Our program utilizes the following criteria to determine suitability for living donation:

- // Donor must be 18 years of age or older
- // Donor must have a compatible blood type for final recipient
- // Donor must not have any evidence of kidney disease, such as protein in the urine or decreased creatinine clearance (<70 ml/min)
- // Donor cannot be significantly overweight
- // Donor must not have diabetes
- // Donor must not have any active infections
- // Donor who has a family history of genetic kidney disease (like polycystic kidney disease) will undergo further testing to make sure they do not have the disease
- // Donor must not have a current or recent history of substance abuse
- // Donor must not have any severe active psychiatric disorder confirmed by psychiatric evaluation
- // Donor must have adequate support for post-operative recovery
- // **Donor must be tobacco/nicotine free for at least 8 weeks prior to donation**

The LDSC will meet regularly to discuss potential living donors who have completed the evaluation testing. Test results and consult findings will be used to determine a plan for each donor. There are multiple outcome options:

- // **Approved** – Decision made proceed with Living Kidney Donation
- // **Declined** – Decision made to not move forward with Living Kidney Donation
- // **Deferred** – Inability to make determination at this time pending further clinical testing and/or documentation

A coordinator will notify you by telephone and by mail within 10 days regarding the decision of the committee. Your primary care provider will also receive a letter detailing the outcome of the Living Donor Selection Committee's decision.

Risks of Donation

A human body can function normally with one working kidney. However, each donor and donation experience are different. After donation, you will have lower kidney function than prior to donation. Your health may be affected. Obesity, high blood pressure, or other donor specific medical conditions may impact your long-term health, kidney function, and survival. Every medical risk post donation cannot be predicted.

In a healthy donor, the remaining kidney has been shown to increase in size after donation and can provide sufficient kidney function for the remainder of a donor's life. It is expected that a donor will lose 25-40 percent of kidney function after donation. The risk of developing ESRD does not exceed that of the general population with the same demographic profile. Kidney failure, the need for dialysis, and kidney transplantation rarely occur after kidney donation.

In general, chronic kidney disease (CKD) develops in mid-life (40-50 years old), and end stage renal disease (ESRD) develops after age 60. The evaluation of a young potential donor cannot predict lifetime risk of CKD or ESRD. Future obesity, high blood pressure, and other medical conditions can lead to increased risk of illness and death. Donors may be at a higher risk for CKD if there is sustained damage to the remaining kidney. The development of CKD and progression to ESRD may be more rapid with only one kidney. ESRD requires dialysis and/or transplantation. Current practice is to prioritize prior living kidney donors who become kidney transplant candidates to help in this rare situation (about 300 donors have required kidney transplant after donation).

Any surgery is associated with risks. Data indicates that the perioperative death rate for living kidney donors is approximately 0.03 percent. This is a little more than the risk of dying in a car wreck. Additional post-operative complications do occur. WVU Medicine will take all precautions to protect donors and ensure a safe procedure. Recent studies indicate major complications at less than 4 percent and minor complications less than 20 percent.

A living donor can lead an active, normal, healthy life with only one kidney. It is expected that blood pressure and kidney function will remain normal, and women who have been donors have become pregnant and delivered normal, healthy babies. It is recommended not to become pregnant within the first year after donation. Pregnant donors have increased risk of preeclampsia.

You should maintain a healthy lifestyle after donation. You should eat healthy, get plenty of exercise, and get annual medical check-ups. It is important that you maintain a normal weight after living kidney donation, as obesity can increase your risk of developing kidney failure. Living Donor follow-up is the only way to determine if there are long-term health concerns after kidney donation. You must notify all future medical personal that you have donated a kidney, especially if being prescribed a new medication or if you require a study that uses intravenous (IV) dye (example: CT scan or angiogram). These may need to be modified because of your single kidney. Additionally, you should avoid non-steroidal anti-inflammatory drugs (NSAID), such as Motrin®, ibuprofen, Aleve®, naproxen, Advil®, and Toradol®, because these drugs can damage the kidney over time.

The advantages to the recipient of a living kidney donor transplant must be weighed against the potential risks to the donor. Living donor organ donation is the only surgical procedure with no planned benefit to the donor. The living donor will be undergoing a purely elective procedure. The surgical risk to the donor is no greater than the risks associated with any surgical procedure, i.e., anesthetic and operative, however, the donor does not need an operation. The Living Donor Transplant Team will discuss any potential risks based on your medical history and results, if evaluation tests results are available.

Preparation for Surgery

8 Weeks Prior to Surgery

- // Stop smoking

4 Weeks Prior to Surgery

- // Discuss birth control plan for women

- Hormonal birth control must be stopped to decrease the risk of developing blood clots.

Week Before Surgery

- // “Final” Cross Match bloodwork

- Kit sent to your home
- Prescription mailed to home
- Living Donor Coordinator will discuss timing of lab draw

Monday Before Surgery

- // Pre-op testing appointment at Physician Office Center Lab

- Chest x-ray
- Electrocardiogram (EKG)
- Lab work

- // Transplant Alliance appointment on 4th floor of the Physician Office Center

- Final visit
- Meeting with:
 - Donor Surgeon for H&P
 - Living Donor Coordinator
 - Independent Living Donor Advocate
 - Transplant Pharmacist
 - Transplant Social Worker, if needed
 - Transplant Financial Coordinator, if needed
 - Transplant Dietitian, if needed

- Pick up stool softener at Pharmacy

- // Pre-op visit with Anesthesia on 4th floor of the Physician Office Center

Day Before Surgery

- // Light meal
- // Stool softener

Morning of Surgery

- // Shower with antibacterial soap when you wake up
- // Arrive at Same Day Surgery (SDS) as instructed
- Blood pregnancy testing (premenopausal women)

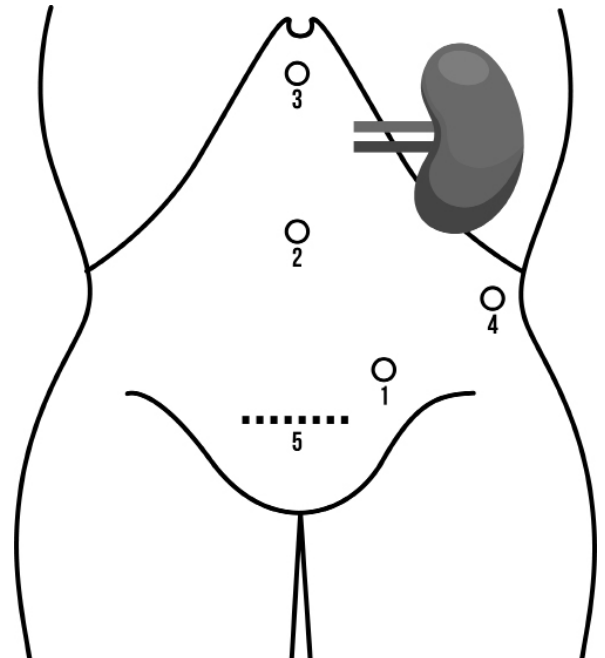
- // Anesthesiology will meet with you
- // IV will be placed for IV fluids prior to surgery
- // Donor Surgeon will visit you in the holding area
 - Answer any questions
 - Will mark on your abdomen the agreed kidney to be removed
- // Before going to the operating room (OR), a medication may be administered in your IV to help you relax
- // Your support person can remain with you until you go to the OR

Kidney Donation Surgery

The donated kidney can be removed by one of three surgical techniques:

Laparoscopic Donor Nephrectomy

- // Preferred at WVU Medicine
- // Side lying
- // Minimally invasive surgery
 - 3-4 small incisions to allow a small camera (laparoscope) to view inside the abdominal cavity
 - Carbon dioxide is passed through one of the incisions into the abdominal cavity to lift the abdominal wall away from the organs below (creates more space to operate)
 - The laparoscope and surgical instruments are then inserted through the other incisions
 - The surgeons use the instruments to separate (cut) the kidney from other structures then divide and seal the blood vessels to the kidney as well as the ureter
 - Once the kidney is separated, it will be removed through a small incision similar like a C-Section scar (at the bikini line)



Benefits to laparoscopic surgery

- // Less blood loss
- // Less pain
- // Faster recovery
- // Surgery takes 3-4 hours
- // Shorter length of stay (2 days)
- // Return to normal activities in 4-12 weeks (except for heavy lifting)
 - Rarely, surgery may need to change to the open nephrectomy procedure if the surgeon decides it is necessary to save your life and/or to protect you and the kidney

Open Donor Nephrectomy

- // Used when anatomy does not permit laparoscopic
- // Surgery done with donor lying on their side
- // 5-7 inch incision on one side of the abdomen
 - Surgery takes 2-3 hours
 - Hospital stay of 4-5 days
 - Return to normal activities in 8-12 weeks

/// Robotic Surgery

- Nationally associated with increased operation times
- Increased expense
- Outcomes are not improved

As with any surgery there are potential risks involved with donating. Possible risks include:

- /// Death
- /// Scars, pain, fatigue, and other consequences typical of any surgical procedure
- /// Decreased kidney function (expected)
- /// Abdominal or bowel symptoms, such as bloating, nausea, or development of bowel obstruction
- /// Kidney failure and the need for dialysis or kidney transplant for the donor (very rare)
- /// Injury to bowel or other abdominal organs
- /// Incisional hernia
- /// Wound infection
- /// Neuropathy (nerve pain)
- /// Nerve injury
- /// Pneumonia
- /// Pneumothorax (air in chest)
- /// Bleeding requiring blood transfusion
- /// Need to return to the operating room

Impact of obesity, hypertension, or other donor-specific medical condition on the health and life span of the potential donor

DONOR SURGERY

All living kidney donor surgeries are performed under general anesthesia. On the day of the operation, you will come to the hospital, an intravenous (IV) line will be placed by a nurse, and IV fluids will be started. If you are a pre-menopausal woman, you will give a urine sample for a pregnancy test. The nurse may also give you an injection and place compression devices on your legs to prevent blood clots. You will also talk to the surgeon before going back to the operating room. The surgeon will confirm your identity and correct side for the removal of the kidney and will ensure that you want to proceed with donation.

When it is time for your operation, the operating room nurses will bring you to the operating room. The surgical team includes many people who will care for you, including an anesthesiologist, nurse anesthetist, operating room nurse, surgical tech (passes instruments to the surgeon), and a resident or medical student who will assist the surgeon (hold instruments). When you arrive in the operating room, the team will confirm your identity as well as your blood

type and planned procedure. Initially, you will lie on your back on the operating room table. The anesthesiologist will give you an oxygen mask for your nose and mouth and put medicine through your IV to help you go to sleep.

Once you are asleep, the anesthesiologist will place a breathing tube in your trachea (windpipe) to help you breathe. An additional IV may be placed as well. A nasogastric tube will be placed from your nose or mouth down to your stomach to help drain any stomach contents during surgery. The anesthesiologist will likely perform a nerve block (TAP) to help with pain management. The team will place a Foley catheter in your bladder that goes through your urethra (in men this is in the penis) to drain your urine. You will wake up with this catheter, and it will usually be removed the day after surgery. Foley removal is a quick, less than one minute process that does not usually cause pain.

You will then be positioned for surgery by the donor surgeon. For both laparoscopic and open surgery, you will be placed on your side with the kidney you are donating facing upwards (lateral decubitus position). The table will be bent so that your side is stretched to expose your kidney. Your body will be padded and positioned to protect your joints and nerves. However, this positioning can cause some soreness for a day or two after surgery.

The surgery will be performed by the Living Donor Transplant Surgeon. If laparoscopic, many small incisions will be made for the cameras. If open, an incision will be made under your rib cage. If a laparoscopic surgery must be converted to open, you may have a larger incision under the ribs or near your belly button, depending on when the opening had to be performed.

When your kidney has been dissected out (detached), the blood vessels will be cut using a surgical stapler, and the kidney will be removed from your body from a small incision near your pubic bone. The kidney will be flushed with solution to prevent clotting and placed on ice while it is prepared for transplant.

Once your kidney is removed, the surgeon will ensure that you are not bleeding and begin closing your incisions. You will have deep stitches to hold your connective tissue together. Your skin will typically be closed with absorbable (dissolving) sutures so there is no need for suture removal. Once your operation is complete, you will be placed on your back on the operating table before you wake up.

As you begin to wake up, your breathing tube will be removed by the anesthesiologist. Typically, you do not remember this happening. Once you are breathing well, you will be transferred to a hospital bed and taken to the recovery room. You will be very sleepy for a few hours and may not remember exactly when you wake up. This is normal. You might feel like you need to urinate because there is a catheter in your bladder. Try to relax, and let your body recover. You will get pain medications as you need them. Once you are more awake, you will go up to a regular hospital room. You will have labs drawn in the evening and the morning after surgery to check your blood levels. The nurses will help you get out of bed on the same day as surgery. The more you move and breathe deeply, the faster you will recover. It is normal to feel tired. Do not be discouraged; you will feel better soon.

After Surgery

- // You will go to the Post-Anesthesia Care Unit (PACU) for observation
 - Close monitoring for several hours
 - The Donor Surgeon will update your family in the waiting room
- // Once your vital signs are stable and you are fully awake, you will then be transferred to the General Surgery Unit
- // You will continue to receive IV fluids and will have a catheter in place to empty your bladder

HOSPITAL RECOVERY

The length of stay in the hospital will vary depending on the individual donor's rate of recovery and the type of procedure performed. The average stay is 2 nights. Donors stay in the hospital until they can stay hydrated (can drink enough liquids) and have their pain controlled with oral medication. Once you are in your hospital room:

- // Diet
 - Begin with ice chips
 - Gradually increase diet to regular as directed by the donor surgeon
- // Nursing
 - Will have you turn, cough, and deep breathe to help clear secretions from the lungs every 2 hours
 - Monitor vital signs hourly
 - Check blood levels
 - Will encourage walking and beginning normal activities beginning the day of surgery
 - o Moving can cause some discomfort initially – hold a pillow along incision to help lessen discomfort
 - o As activity increases discomfort will decrease
- // Donor Surgeon
 - Will monitor your progress and recovery
 - Will assess urine output and determine when bladder catheter can be removed
 - Will order pain medications, which will usually start out in your IV but will transition to pain medications by mouth
 - Will order your discharge medications (if needed)
- // Living Donor Coordinator
 - Will review the discharge instructions
 - o How to care for yourself at home
 - o Follow-up visits – blood work and when to see the Donor Surgeon

Although it is very rare, there are always potential complications from any major surgery. These complications may include infection, collapsed lung, pneumonia, bowel obstruction, and/or pain. These can be treated but may result in a longer hospital stay. Most donors do not experience any significant complications, and the average length of stay in the hospital is 2 days.

WHEN CAN THE DONOR RETURN TO NORMAL ACTIVITIES?

Bathing – Most donors may shower on the day after surgery with assistance from the nurse. Donors can shower normally but pat their incisions dry with a clean towel. Do not pick at incision or poke objects into the incision.

Lifting – Donors should not do any heavy lifting (10 pounds) for 8 weeks after donating. If you have an open nephrectomy, this period may be 3 months. After 8 weeks, donors can gradually increase their lifting back to baseline.

Driving – Donors should not drive until they are cleared by the donor surgeon, usually at 2 weeks. Donors must not be taking narcotic pain medications when driving. Donors must be able to move freely (check blind spots and react quickly) prior to driving for the safety of themselves and others on the road.

Physical Activity – Walking is good for donors as soon as they are awake from surgery. Most donors can and should walk and climb stairs without concern after discharge. Donors can increase their physical activity to biking, running, elliptical machines, etc. as they feel well and without pain. Donors should avoid abdominal (core) exercises for 3 months after surgery to allow for full healing. There are no long-term restrictions on physical activities except avoiding rough contact sports, like martial arts or kickboxing, which could damage the remaining kidney.

Work – Returning to work depends on the job. Jobs that require heavy lifting or physical activity (construction, nursing, waitressing) require 2-3 months off work or light duty. Donors can return to desk jobs as early as 2 weeks after surgery, depending on the rate of recovery.

Sexual Activity – Donors can resume sexual activities a few weeks after surgery if they are feeling well enough. Some patients may have incisional pain, fatigue, and labial or testicular swelling that make sexual intercourse uncomfortable for a few weeks. Donating a kidney does not prevent women from becoming pregnant or men from fathering children. Men may have swelling in their testicle and women in their labia which will go away over 1-2 weeks.

Travel – Donors have a higher risk of blood clots, particularly deep vein thrombosis (DVT), in the weeks after surgery. Long distance travel should be avoided in the first 2 weeks. If traveling, especially within the first 6 weeks, donors should stop, get up, and walk every hour. Leg exercises can also be helpful during air travel. Talk to your doctor or donor coordinator prior to traveling.

Smoking – Smoking greatly increases the chances of lung or pulmonary infection as well as blood clots after surgery. We recommend that you do not return to smoking after donation.

Pregnancy – Pregnancy after donation is possible but is not recommended for at least one year after the donation surgery. Living donors should talk to their OB-GYN and Donor Team before getting pregnant and make sure that they have good pre-natal care, preferably with a high-risk OB/Maternal-Fetal Medicine physician.

Generally, living kidney donors do well with pregnancy after their donation. However, studies have shown small increases in certain risks, like gestational diabetes, pregnancy-induced high blood pressure, pre-term delivery, protein in the urine, and pre-eclampsia. Living donors should inform their OB-GYN immediately about their donation to allow monitoring for these potential complications. Living donors should also inform the Transplant Center if they become pregnant. Having a birth control plan after donation is very important.

ARE THERE ANY DIETARY RESTRICTIONS AFTER DONATION?

After donation, you should be able to go back to a regular, healthy lifestyle. If you are in good health, there will probably not be any specific dietary restrictions. A healthy, low-salt diet is best. Drinking plenty of water is important for good kidney health.

Avoid high protein diets, such as Atkins or Keto, as these may damage your remaining kidney.

INCISIONAL CARE

Most patients will have dissolving sutures under the skin with skin glue or steri-strips on top of the skin. Do not remove, pick at skin glue or steri-strips. These may itch but should be left in place. Do not place anything on the incision (no ointment, Vaseline, aloe, lotion, etc.) unless prescribed by your surgeon. After the incision is completely healed (usually 4-6 weeks), vitamin E cream, shea, or cocoa butter can be used to help reduce scarring.

If the incision opens, drains fluid of any kind, or increases in redness or pain, please contact the transplant center immediately.

Most donors have swelling around the incisions, especially at the incision used to remove the kidney. The swelling may be asymmetric from your positioning on the table. This incision may be swollen for months and even have bruising or discoloration. Over time, it will flatten out as the swelling decreases.

EARLY PROBLEMS AFTER DONATION

Pain – Most donors have pain for some time. The pain is usually most severe in the first 2-3 days after surgery, but it will improve over time. You may take the pain medicine prescribed by your surgeon or, in most cases, Tylenol® (acetaminophen). Do not ADD acetaminophen to your prescribed pain medicine, as this can damage your liver. After donation, NEVER take any NSAID (non-steroidal anti-inflammatory drugs) because they can damage your remaining kidney. NSAID drugs include ibuprofen, naproxen, Aleve®, and toradol.

Nausea – Many patients have nausea for a couple of days after donation. Usually, narcotics and/or constipation can cause the nausea. If the nausea does not improve, please call the Donor Coordinator.

Loss of Appetite – The majority of donors have poor appetite for 4-6 weeks after surgery. Do not worry if you are eating less than normal. If you can stay hydrated (drink enough fluid), most patients will not damage their health by eating less in the first few weeks. Eat foods that appeal to you but do not force yourself to eat. If you cannot tolerate drinking liquids, please call the Donor Coordinator.

Constipation – Almost all donors have constipation for a few days after surgery. The surgeon must move your bowels out of the way to reach the kidney. This can make the bowels not move well. In addition, narcotic pain medicines slow down your bowel function. Sometimes, constipation and cramping may hurt worse than incisional pain. Your surgeon will likely prescribe Colace or another stool softener. Use this as long as you are taking pain medicines. Increasing water intake, prune or mango juice, and fruits and vegetables may help. If this does not work, you may use Miralax®, Dulcolax® suppositories, or a saline enema. Please call your Donor Coordinator if you have problems with constipation.

Fatigue – Fatigue is completely normal after any surgery with general anesthesia. Your fatigue will improve over a few weeks. Increasing your activity (like walking) will help you feel better.

Testicular or Labial Swelling – Many donors get swelling of the testicle or the labia on the same side that the kidney is removed. A small vein (the gonadal vein) drains this area. The vein is cut and tied off when the kidney is removed, which can cause swelling until new vein channels are formed. This swelling goes away in a few weeks. Warm, moist compresses or ice packs help with the discomfort from the swelling.

How Does Living Donation Affect the Donor?

People can live normal lives with only one kidney. If the donor is evaluated thoroughly and cleared for donation, he or she can lead a normal life after the surgery. When the kidney is removed, the single normal kidney will increase in size to compensate for the loss of the donated kidney.

Physical exercise is healthy and good for you. However, it is important for someone with only one kidney to be careful and protect it from injury. It is best to avoid extreme contact sports, like football, boxing, hockey, mixed martial arts, or wrestling. Wearing protective gear, such as padded vests under clothing, may help protect the kidney from injury during sports. This can help lessen the risk, but it will not take away the risk.

RECOVERY AND LONG-TERM CARE

By proceeding with donation, you have committed to long-term follow-up.

Follow-up appointments to see the Donor Team will be scheduled:

- // Two weeks after donation
- // Six weeks after donation
- // Six months after donation
- // One year after donation
- // Two years after donation

Donors are encouraged to have good long-term medical follow-up with their primary care providers. A urine test, a blood pressure check, and a blood test for kidney function (GFR) should be done every year for the rest of your life.

WHAT IF I FEEL EMOTIONAL AFTER DONATION?

After donation, living donors report a wide range of mixed emotions, from joy and relief to anxiety and depression. The process of getting through the evaluation and surgery can be so time-consuming that donors do not always have time to process everything they are feeling. It is normal for these emotions to come to the forefront after the donation and transplant take place.

Living donors generally rate their experience as positive. Different studies indicate that between 80-97 percent of donors say that in retrospect, they would still have made the decision to donate.

However, concerns about the recipient's outcome (as well as the donor's recovery) can contribute to feelings of anxiety and many donors report a feeling of "let-down" just prior to discharge from the hospital or during the first few days at home. This is not uncommon and may be due to the side effects of the pain medication or a change from the excitement of surgery to the slower pace of recovery. You are encouraged to verbalize your feelings at all times and remember that the Living Donor Team is available to assist.

Potential Psychosocial Risks:

- // Problems with body image
- // Post-surgery depression or anxiety
- // Feelings of emotional distress or bereavement if the transplant recipient experiences recurrent disease, complications, or in the event of the recipient's death
- // Effect of donation on the donor's lifestyle
- // Effect of donation on the donor and recipient's relationship or other relationships

Living donors who are struggling with these issues are encouraged to:

- // Talk to the ILDA or Transplant Alliance Social Worker or the Living Donor Coordinator for advice
- // Seek professional counseling or other outside help to manage difficult emotion
- // Talk with other living donors who can be particularly supportive if they have experienced the same feelings

CONCLUSION

The decision to donate is not always an easy one. It may not be right for everyone; there are emotional, physical, and financial matters to think about. Potential donors should discuss these matters with their respective families since they will also be affected by the decision.

Talking with others who have been through the donor process is usually helpful to those who are considering the idea of donation. The WVU Medicine Transplant Alliance can arrange this.

Hopefully, many of your questions and concerns have been answered by reading through this education guide. In the end, it is your personal decision to make, and it needs to be the RIGHT CHOICE for you.

The WVU Medicine Transplant Alliance team and ILDAs are available to answer your questions, and we encourage you to ask as many questions as you wish. Please do not hesitate to call upon any staff member at any time.

Frequently Asked Questions (FAQs) About Living Donor

What is the long-term outcome for kidney donors?

Donor survival is like that of the general population when matched for age, sex, and race. After donating one kidney, the remaining normal kidney compensates, and the overall kidney function returns to approximately 75-85 percent of your original kidney function. Recent studies show that donors have slightly increased risk for kidney disease when compared to healthy people.

What risks are there to kidney donors?

The chance of the donation affecting the living donor's lifespan is extremely low. With any surgery, there are risks. The risk of death within 30 days of donating a kidney is 1 in 3,300. The risk of major post-op complications is about 2-4 percent. The risk of minor complications is close to 15 percent. Donors are encouraged to have yearly, thorough long-term medical follow up.

The risk of kidney failure requiring dialysis or transplantation is very low but is increased in comparison to healthy non-donors.

Can a female donor have children after donating a kidney?

Women of childbearing age can have children after kidney donation because the donor surgery does not affect their reproductive organs. Pregnancy should be avoided for at least 12 months after donation. Ideally, donors will have completed childbearing prior to donation. Donors should talk with their physician about pregnancy and have good pre-natal care.

What if I donate and need a kidney?

UNOS (United Network for Organ Sharing) has established a policy that living donors who need a kidney transplant are given extra points on the transplant waitlist. This policy recognizes the selfless sacrifice of kidney donors. Fortunately, fewer than 250 living donors are known to have required dialysis care after kidney donation.

Are there any dietary restrictions before or after kidney donation?

If you are in good health, there will probably be no specific dietary restrictions. If you are overweight with a body mass index (BMI) over 30, you are encouraged to lose weight. Following a healthy, well balanced low sodium (salt) diet is highly recommended. Avoid high protein diets.

What is the recovery period, and when can a donor return to normal activities?

The length of the hospital stay will vary depending on the individual's rate of recovery. The average length of stay is 2 days. Generally, heavy lifting is restricted for 6-12 weeks post-surgery. It is recommended that donors avoid contact sports that could potentially injure the remaining kidney.

Can I change my mind regarding Living Kidney Donation?

You have the right to withdraw your participation as a kidney donor at any time throughout the entire process, confidentially and without any penalty. Also, the recipient also has the right to deny receiving a living kidney donation.

What is the cost to me for donating a kidney?

The cost of all living donor medical testing appointments, surgery, and hospital stay are covered by the recipient's insurance. The donor should not be billed for any charges related to their evaluation or donation. If by chance you receive a bill, please contact the office as soon as you receive it so any billing issues can be resolved promptly.

Can I donate to someone if I am not related to them?

Yes. There is just as much success with unrelated donations as with related donations, as long as blood screening and cross match is compatible.

If I change my mind about kidney donation, would the recipient still be able to get a kidney?

Yes, the recipient will be placed on the UNOS waiting list for a deceased donor transplant.

Your Quick Guide to WVU Medicine

Below is a list of locations you may visit during your transplant journey.

Main Hospital- J.W. Ruby Memorial Hospital	
Transplant Alliance Clinic and Offices	1st floor (Lobby)
Cafeteria Breakfast 6:00 to 10:00 AM Lunch 11:00 AM to 3:30 PM Dinner 4:00 to 7:30 PM Grab and Go 9:00 PM to 5:00 AM	4 th floor
Discharge Pharmacy	1 st floor (Lobby)
Endoscopy/GI lab	2 nd floor
Gift Shop	1 st floor (Lobby)
Information Desk	1 st floor (Lobby)
Pulmonary Function Test	2 nd floor
Radiology	3 rd floor
Registration	1 st floor
Same Day Surgery	2 nd floor
Starbucks	1 st floor

Physician Office Center	
Outpatient Laboratory Monday through Friday 6:30 AM to 6:00 PM Saturday 8:00 AM to 12:30 PM <i>Closed on football game days</i>	1 st floor
Outpatient Medical Center Pharmacy Monday through Friday 7:30 AM to 6:00 PM Saturday 10:00 AM to 2:00 PM <i>Closed on football game days</i>	1 st floor

Valet Parking- In addition to self-parking, valet parking is available at all locations listed above. Valet parking is free, and tipping is not required. Valet parking is available 7 am to 5 pm Monday through Friday.

IMPORTANT TELEPHONE NUMBERS

Admission	304-598-4000 ext. 75040
Billing	800-516-5548
Independent Living Donor Advocate (ILDA)	304-598-4000 ext. 74185
Echocardiogram Lab	304-598-4395
Main Hospital Number (J.W. Ruby Memorial Hospital)	304-598-4000
Medical Records	304-598-4110
Outpatient Lab (Physician Office Center)	304-598-4870
Patient Registration (J.W. Ruby Memorial Hospital)	1-800-324-1468
Radiology (J.W. Ruby Memorial Hospital)	304-598-4252
Rosenbaum Family House	304-598-6094
Security (J.W. Ruby Memorial Hospital)	304-598-4029
Transplant Alliance	304-974-3004 Toll-Free Number: 1-844-988-7267

Glossary

ABO Blood Type - The classification of human blood into four groups: A, B, AB, and O. Blood types are based on differences in molecules (proteins and carbohydrates) on the surface of red blood cells.

Antibody - A protein molecule produced by the immune system in response to a foreign body, such as virus or a transplanted organ. Since antibodies fight the transplanted organ and try to reject it, recipients are required to take anti-rejection (immunosuppressive) drugs.

Antigen - An antigen is any substance that causes your immune system to produce antibodies against it. An antigen may be a foreign substance from the environment, such as chemicals, bacteria, viruses, pollen, or foreign tissues. An antigen may also be formed within the body, as with bacterial toxins.

Compatibility - The recipient does not have antibodies to the blood group or HLA type of the donor and a straightforward transplant between them would be possible.

Computed Tomography Angiography (CTA) - The CTA is a detailed imaging procedure that allows the surgeon to see the kidneys and their blood supply. This test takes approximately 30 minutes to complete. Before the imaging, you must not eat or drink anything for at least four hours. You will be positioned on your back, and an IV will be inserted in your arm. The CT scanner will take images of your abdomen. A dye will be injected into the IV in your arm, and the CT scanner will record more images so the surgeon can see how the dye passes through your kidneys' blood supply. If you have an allergy to iodine or shellfish, Magnetic Resonance Angiography (MRA) may be performed to evaluate the blood supply to your kidneys.

Cross Match - A blood test to determine compatibility between donor and recipient. A positive cross match indicates incompatibility. If the cross match is "negative," then the transplant may proceed. Cross matching is performed for many organ transplants.

Deceased Donor - An individual from whom at least one solid organ is recovered for the purpose of transplantation after suffering brain death or cardiac death

Deceased Donor Transplant - The transplant of an organ from a deceased donor.

Diabetes - A disease in which the pancreas does not manufacture an adequate amount of insulin or your body is resistant to insulin (Type II). As a result, the level of sugar in the blood is too high. A leading factor in heart and kidney disease.

Diastolic Blood Pressure - The bottom number in the blood pressure measurement (80 in a blood pressure of 120/80), indicating the pressure in the arteries when the heart is at rest.

Glomerular Filtration Rate (GFR) - A measure used to determine kidney function, the GFR indicates the kidney's ability to filter and remove waste products.

Hemodialysis - A treatment for kidney failure where the patient's blood is passed through a filtering membrane to remove excess fluid and wastes.

High Blood Pressure (hypertension) (HTN) - When the force of the blood pushing against the walls of the blood vessels is higher than normal because the blood vessels have either become less elastic or have gotten smaller. High blood pressure causes the heart to pump harder to move blood through the body. High blood pressure can cause kidney failure and heart disease if not treated.

Histocompatibility - The examination of human leukocyte antigens (HLA) in a patient often referred to as "tissue typing" or "genetic matching." Tissue typing is routinely performed for all donors and recipients in kidney and pancreas transplantation to help match the donor with the most suitable recipients to help decrease the likelihood of rejecting the transplanted organ.

Histocompatibility Antigens - Molecules, also known as Human Leukocyte Antigens (HLA), found on all nucleated cells in the body. Inherited from one's parents, histocompatibility antigens help the immune system to recognize whether or not a cell is foreign to the body. These antigens are used to help determine the compatibility of kidneys for transplantation from one individual to another.

Human Leukocyte Antigen (HLA) - Molecules found on cells in the body that are inherited genetically. In donor-recipient matching, HLAs help to determine compatibility between a donor and recipients.

Informed Consent - A person's voluntary agreement, based upon adequate knowledge and understanding of relevant information, to participate in research or to undergo a diagnostic, therapeutic, or preventive procedure.

Living Donation - When a living person gives an organ or a portion of an organ for use in a transplant. A kidney or portion of a liver may be donated.

Living Donor - A living person who donates an organ, such as a kidney or a segment of the liver for transplantation. Living donors may be blood relatives, emotionally related individuals, or altruistic strangers. These may also include domino heart or liver transplants.

Magnetic Resonance Angiogram (MRA) - an MRA is a test that lets your doctors see the blood vessels (both arteries and veins) in your kidney to assess blood flow.

Panel Reactive Antibody (PRA) - The percent PRA value is a measure of a patient's level of sensitization to HLA antigens. It is the percentage of cells from a panel of blood donors against which a potential recipient's serum reacts. The PRA reflects the percentage of the general population that a potential recipient makes antibodies (is sensitized) against. For example, a patient with a PRA of 80 percent will be incompatible with 80 percent of potential donors. Kidney patients with a high PRA are given priority on the waiting list. The higher the PRA, the more sensitized a patient is to the general donor pool, and thus the more difficult it is to find a suitable donor. A patient may become sensitized because of pregnancy, a blood transfusion, or a previous transplant.

Peritoneal dialysis - A treatment technique for kidney failure that uses the patient's own body tissues inside of the abdominal cavity to act as a filter. The intestines lie in the abdominal cavity, the space between the abdominal wall and the spine. A plastic tube called a "dialysis catheter" is placed through the abdominal wall into the abdominal cavity. A special fluid is then flushed into the abdominal cavity and washes around the intestines. The lining (peritoneum) of the abdominal cavity and of intra-abdominal organs act as a filter between this fluid and the blood stream. By using different types of solutions, waste products and excess water can be removed from the body through this process.

Preeclampsia - A condition in pregnancy characterized by an abrupt hypertension (sharp rise in blood pressure), albuminuria (large amount of protein/albumin in urine), and swelling of hands, feet, and face.

Recipient - A person who receives a transplant.

Tissue Typing - A blood test that helps evaluate how closely the tissues of the donor match those of the recipient.

Transplant Program - A hospital evaluates patients for transplant, registers patients on the national waiting list, performs transplant surgery, and provides care before, during, and after transplantation.

Transplant Team - The diverse group of professionals at the Transplant Program who work to make a transplant successful. Each person on the "transplant team" is an expert in a different area of transplantation.

United Network for Organ Sharing (UNOS) - The private, nonprofit membership organization that coordinates the nation's transplant system through HRSA's OPTN contract. As an OPTN contractor, UNOS is responsible for meeting all contract requirements. Since the first OPTN contract award in 1986, UNOS has established and continually strives to improve tools, systems, and quality processes that support OPTN contract objectives and requirements. These include:

- // Managing the national organ transplant waiting list
- // Collecting, managing, and reporting of sensitive clinical data in a secure, fail-safe environment
- // Facilitating an open, inclusive forum for development and continuous refinement of evidence-based policies and standards
- // Member and policy performance assessment to ensure equitable, safe treatment of candidates and recipients
- // Increasing donation and making the most of every organ that is donated through professional education, outcomes research, patient services and resources, and public and professional education
- // Continuously improving the care, quality of life, and outcomes of organ transplant candidates and recipients

Resources

www.unos.org

<https://transplantliving.org/kidney/what-is-a-living-donor/>

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