

A  
GUIDE  
FOR  
LIVING KIDNEY DONATION

Welcome to Sutter Transplant Services and thank you for your interest in kidney donation. Before deciding to proceed with the process of evaluation and donation, please read the following educational guide. In this guide we will explain the process and tests required for a living kidney donor work-up and provide you with facts about the surgery, hospitalization, and post-operative care. We hope we are able to answer your questions regarding living kidney donation, however, if we have left questions unanswered, or stimulated new ones, please do not hesitate to call Sutter Transplant at 1 (800) 566-8133.

Your decision to donate is strictly voluntary. A strong support system is very important to your health, recovery and well-being, so please discuss the idea of donation with family and friends before deciding to proceed.

## **WHY PEOPLE NEED KIDNEY TRANSPLANTS:**

People who have kidney failure are no longer able to filter and eliminate certain waste products from their bodies. These waste products accumulate in the blood and tissues, and unless they are removed, will lead to death.

## **TREATMENT OPTIONS FOR PATIENTS WITH KIDNEY FAILURE:**

Patients in kidney failure have few options for treatment. They are **dialysis** and **kidney transplantation**.

Dialysis is the mechanical process of removing waste products from the blood. Despite dialysis, patients with renal failure experience a progression of muscle, tissue and organ wasting. There are two types of dialysis:

1. Hemodialysis requires the patient to be connected to a machine, usually three times a week for 3-4 hours at a time. Patients often complain of fatigue, food and fluid restrictions, wide blood pressure fluctuations and most importantly, their loss of independence.
2. Peritoneal dialysis involves manual fluid exchanges to be done by the patient, or sometimes by a machine called a cyclir. An exchange is the process of infusing a bag of specially prepared solution into the abdomen to promote the collection of waste products, then draining the now soiled solution and discarding it. This process is repeated several times a day (or night) and requires meticulous care to maintain a sterile environment in order to prevent infections.

Another common treatment for renal failure is a kidney transplant. Transplantation allows the patient's body to eliminate waste products the way their own working kidneys did before they became ill. Patients with a successful kidney transplant often experience an increase in energy, few, if any, food and fluid restrictions, a regained sense of independence and a halt in the progression of muscle, organ and tissue wasting.

## WHAT IS A KIDNEY TRANSPLANT?

A kidney transplant involves the surgical implantation of a healthy kidney into a person with renal failure. A healthy kidney can come from two types of donors:

1. **Cadaveric donor**- someone who has been legally declared brain dead (but otherwise found to be healthy) and whose family members have chosen to donate their organs.
2. **Living donor** - a person who voluntarily offers to donate one of their kidneys, has been found to be an acceptable donor candidate after a medical and psychological evaluation, and who is cross-match compatible with their recipient.

## WHY ARE LIVING DONORS NEEDED?

The United States is facing a tremendous shortage of organs. The number of people on the UNOS (United Network for Organ Sharing) wait list grows every day while the number of cadaveric donors has not increased in several years. This has resulted in a significant increase in wait times for listed patients. Many of these people are no longer candidates for transplants after waiting for so many years. Regretfully, many die waiting for life-saving organs every day. Because we can no longer rely on cadaveric donors, a nationwide effort has been made to increase living donor options.

## WHO CAN BE A LIVING DONOR?

A living donor can be **related** or **unrelated**. A living related donor (LAID) is someone who is related by blood, such as a parent, sibling, adult child, etc. A living unrelated donor (LORD) is someone with no blood relation to the intended recipient such as a spouse, in-law, friend, co-worker, etc. Other living donor options considered for donation include non-directed donors (NND) in which a “good Samaritan” has offered to donate without a known recipient. This type of donation would be very similar to a cadaveric donor in that the person to receive the kidney is chosen from the UNOS wait list based on blood type, antigen match, time on the list, etc. While the donor is living, the donation would remain anonymous unless otherwise requested by **both** donor and recipient. In addition, there can be “paired exchange” donors. This occurs when living donors do not match their intended recipients and are allowed to “exchange” recipients with

whom they are compatible. If a paired exchange cannot be found, other living donors can choose the “list-paired exchange.” This involves a donor who, because they are not compatible with their intended recipient, offers to donate to a stranger on the UNOS list. This would allow their intended **\*\*\*recipient to move to the top of the UNOS list, for a cadaveric kidney, or intended recipient’s wait time is changed to that of the person who received the kidney. In other words, they are moving to the transplanted person’s place on the list. This would decrease the amount of time waiting on the UNOS list.**

**\*\***It is important to mention that **all** living donors are subjected to medical and psychological evaluation. All donations must be voluntary, without any monetary reward, coercion or other inappropriate motivation. Donors must be able to accept that they no longer have control of the donated kidney. There should be no guilt, conditions or expectations placed on the recipient in exchange for the gift of a donated kidney.

### **ARE THERE CONDITIONS THAT WOULD DISQUALIFY A LIVING DONOR?**

Yes, the following conditions would indicate that you may not be a suitable donor:

- High blood pressure (hypertension)
- Blood pressure controlled with anti-hypertensive medication
- Significant obesity
- Diabetes (gestational diabetes may be considered after further evaluation)
- History of cancer (depending on type and length of time since diagnosis and treatment)
- Positive HIV status
- Positive hepatitis status
- History of kidney stones
- Chronic use of non-steroidal medications (Advil, Motrin, etc.), such as with arthritis or other chronic pain conditions

### **WHAT TESTS ARE NEEDED FOR A LIVING DONOR EVALUATION?**

The routine tests required for your workup include, but are not limited to:

- History and physical by your own primary care physician within the last 12 months. Females must have a normal pap smear done within

last 12 months, and if 35 years or older, a mammogram that is normal and completed within last 24 months. Males over 45 years old must have a normal PSA (prostate level) done within last 12 months.

- Chest X-ray (PA & Lateral)
- EKG (12 lead)
- Lab work (ABC), tissue typing, initial and final crossmatch, serologies (HIV, hepatitis, CMV, syphilis, & HTLV1), chemistry panel, CEO, PT & PITY, 24-hour urine collection for creatinine clearance and total protein
- MRA (much like an MM), a scan which visualizes the kidneys and their surrounding vessels
- Psychosocial evaluation with transplant social worker
- Other tests may be indicated based on atypical results found during evaluation process, (e.g. cardiology workup, renal angiogram if MBA not conclusive, etc.)

### **HOW LONG DOES THE EVALUATION TAKE TO COMPLETE?**

Depending on your location and motivation, your entire workup can be completed within two-four weeks once your initial crossmatch is completed and you are compatible with your recipient. The initial crossmatch takes approximately two weeks to complete. If you are able to come to Sutter Memorial Hospital, we can arrange to have all of your tests done on the same day in most cases. If you are unable to come to us for your workup, we can make arrangements with your local physician or appropriate facilities (lab, radiology, EKG departments). Due to reimbursement policies, all tests must be pre-approved by each individual department's billing personnel before the tests can be ordered. This may result in some delays. You will need to be assessed by your own physician for an annual physical as mentioned above and this will need to be done before your evaluation is complete. If you have not been seen within the last 12 months, you should schedule an annual physical to avoid delaying your workup.

### **WHO PAYS FOR MY LIVING DONOR EVALUATION?**

Sutter Transplant Services pays for all testing required for the living donor workup. Once the transplant surgery has occurred, your recipient's insurance reimburses Sutter Transplant. Therefore, the donor should not be charged for any of the tests required for the living donor evaluation or surgery. As mentioned above, any tests ordered outside of Sutter Memorial Hospital must be pre-approved with signed

reimbursement contracts between Sutter Transplant and the designated facility to ensure you, the donor, will not be charged. Any bills received regarding the living donor evaluation should be submitted to the financial coordinator at Sutter Transplant Services.

Sutter Transplant does not provide financial assistance for a donor's travel and lodging. Some recipient's insurance companies may have a clause for such expenses and it would be up to the recipient to contact their own insurance company and make the necessary arrangements.

### **WHAT KIND OF SURGICAL PROCEDURE DOES SUTTER USE?**

Sutter Transplant surgeons perform an open nephrectomy. This involves a four-six inch incision just below the rib cage on the front of the upper abdomen, usually on the left side. The entire procedure takes approximately 2½ hours. Most donors are discharged two-four days after surgery and are able to perform activities of daily living within one-two weeks, and may return to light duty work at four- six weeks. Donors with physical jobs may require six-eight weeks to return to work.

### **WHY DOESN'T SUTTER TRANSPLANT PERFORM LAPAROSCOPIC NEPHRECTOMIES?**

There are many unnecessary risks associated with laparoscopic nephrectomies that we feel are not in a donor's best interest. This type of procedure often takes five-seven hours (more than double the anesthesia time), requires three abdominal puncture wounds and an incision which can lead to incarcerated hernias (loops of bowel can become caught in surgical sites), and more sites for infections and adhesions (often requiring future operations to correct). Because the open nephrectomy does not involve entering the peritoneal space, which is a membrane that covers the bowel and surrounding tissues, our surgical procedure does not have the risk of bowel hernias or adhesions. Also important to note is the laparoscopic nephrectomy discharge and return-to-work time frames are virtually the same as the open nephrectomy. Another point to consider is the length of time the laparoscopic kidney is without blood or oxygen in the process of removal. This is called warm ischemic time. When this time is delayed, there is risk to the kidney and its ability to function once it has been transplanted. It can take minutes to remove the kidney after dissection with the laparoscopic method, rather than seconds with the open nephrectomy. Laparoscopic kidneys have a greater incidence of ATN (acute tubular necrosis) from the warm ischemic time initially after transplant. Fortunately, most kidneys recover and are able to function

normally for the recipients after a period of time. ATN is rare among open nephrectomy kidneys.

## **WHAT CAN I EXPECT THE DAY OF SURGERY?**

Most living donor transplant surgeries are scheduled on Wednesdays. Most likely, you will have completed all pre-operative tests (lab work, chest X-ray and EKG) two-three days before surgery and will have been seen in the transplant clinic for surgical clearance by one of our surgeons. On the day of the surgery, both you and the recipient will be admitted to the hospital. You will sign consents for the donor nephrectomy, an IV will be started in your arm and you will be prepared for surgery. You will also meet your anesthesiologist and discuss the type of anesthesia to be used for your surgery.

Once you are asleep, a Foley catheter will be inserted into your bladder so all urine output can be accurately measured. This catheter will remain for one-two days. The actual surgery is approximately two-two and a half hours. One kidney, its artery, vein and ureter will be removed from you and transplanted into your recipient.

After surgery is completed, you will be taken to the recovery room where you will wake up from anesthesia. Your vital signs (blood pressure, temperature, heart rate, respirations) will be monitored frequently, and blood tests and another chest X-ray will be done as needed. Once you have awakened from anesthesia, you will be transferred to your room on the Transplant unit (East).

During surgery, your family and friends can wait in the surgical waiting room. A surgeon will come out and report to them after the surgery is finished. Your family and friends may visit you once you have been moved to the Transplant unit (4th floor, East wing).

## **WHAT CAN I EXPECT AFTER SURGERY?**

You will still have an IV in your arm and the catheter in your bladder. A nurse will be assigned to you and will continue to monitor your vital signs and check your urine output regularly. You will be instructed to cough and deep breathe frequently (at least hourly) to prevent fluids from settling in your lungs. You will also be assisted with sitting up and walking by the next morning.

You may wish to limit visitors the day after surgery as this is when most patients experience significant nausea and pain while anesthesia is wearing off. Your nurses can give you nausea and pain medication as often as it is ordered by your physician. TAKE THEM!!

### **POTENTIAL RISKS AND COMPLICATIONS:**

Most donors are concerned about two major potential complications:

1. What are the surgical risks of being a donor?
2. What is the risk of having only one kidney?

Because the person going to surgery to donate a kidney is healthy, there is much less risk to him or her than there would be to a sick person who requires surgery. However, anyone who experiences surgery is exposed to some risks. Some of these may include:

1. Anesthetic complications
2. Pneumonia
3. Collapsed lung
4. Wound infection

We know of three deaths of donors due to surgical complications. The mortality rate of a potential donor is estimated to be about two in 9,000.

There is probably less risk in donor surgery than there is in driving the freeways to work everyday.

### **RISKS OF HAVING ONLY ONE KIDNEY:**

There are people who have only one kidney and don't even know it. The body only needs one kidney to function normally and in essence one could think of the second as a "spare part". At any given time, both kidneys are not functioning at full capacity and the loss of one just stimulates the remaining one to grow slightly larger and take over the function of the non-functioning or donated one.

In a young person, the capacity for the remaining kidney to assume the function level of two is almost 100 percent.

The majority of people who donate a kidney experience no problems and have normal lives. There are, however, potential risks that you must know about:

1. Rare cancers may occur in just one kidney. If, after donating a kidney, you would develop one of these rare cancers, you may require dialysis or transplantation yourself.
2. Severe trauma from accidents or gunshot wounds may damage the only kidney you have left. This is a theoretical risk but since it could happen you should know about it.

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This, of course, is a possibility. However, most diseases that cause kidneys to fail affect both kidneys at the same time and it would not make any difference if you had one or two.

Insurance companies have determined that a person who has donated a kidney is no more at risk than any other healthy adult and provide insurance at no additional rate.

### **OTHER QUESTIONS POTENTIAL DONORS ASK:**

1. Does it hurt? For how long?  
The incision will be painful for several days. You will receive pain medicine to make you more comfortable. Some soreness may persist for a couple of weeks and the area may feel numb for several months.
2. Where do they make the incision?  
The donated kidney will be removed through an incision in your side, right under your ribs.
3. Will my diet and activities be the same after donating?  
Yes, essentially nothing changes. You continue to eat the same and participate in the same activities.
4. Can I have children after I donate?  
Yes. Having only one kidney does not interfere with having babies. Some young parents are concerned that if they donate one of their

kidneys to a parent or sibling and then in the future their child would need a transplant, they could not donate to him or her. This, of course, is a consideration parents will have to discuss.

5. What is the cost?

There is minimal monetary cost to the donor. The cost of the evaluation, tests, surgery, and follow-up care are billed to the recipient's MediCare and/or insurance. The donor is responsible for his transportation to and from the Medical Center. In cases of extreme hardship for these few expenses, assistance is sometimes available from charitable organizations.

There is no guarantee that your kidney transplanted into your relative will work indefinitely. All available tests to determine compatibility are done and only donors with the best matching will be used. In a few instances, the best matched kidneys have been rejected in a short period of time. In most cases, the kidneys have a 90-95 percent chance of still functioning after five years. If a kidney from a related donor is rejected, it is very sad and represents a great loss to both the donor and the recipient; however, most donors are consoled by the knowledge that they have made every effort to contribute to their relative. In most cases, there is a great sense of gratification in offering a gift that has the potential of improving the recipient's quality of life.