



*Sutter Medical Center  
Sutter Transplant and  
Outpatient Heart Specialty Clinics*

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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 Services at (800) 556-8133, or (916) 733-8133.

Your decision to donate is **strictly voluntary and confidential**. 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.

\* It is important for you to understand that living kidney donation is not your recipient's only treatment option for their kidney failure. You have the right to be fully informed of the risks and consequences that can be associated with living kidney donation before deciding to proceed with the process. To further ensure that you understand the information addressed in this packet, you will be asked to sign an 'Informed Consent for Living Kidney Donor Patients' as part of your living kidney donor evaluation.

### ***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 the following options for treatment: **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, rigid 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 cycler. 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 in order to prevent infections.

Another common treatment for renal failure is kidney transplantation. A kidney transplant allows the patient's body to eliminate waste products the way their own kidneys did before they failed. 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 kidney failure. A healthy kidney can come from 2 types of donors:

- 1) **Deceased 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 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 deceased 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 deceased donors, a nation-wide 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 (LRD) is someone who is related by blood, such as a parent, sibling, adult child, etc. A living unrelated donor (LURD) 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 deceased donor in that the person to receive the kidney is chosen from the UNOS wait list based on blood type, tissue type, time on the list, etc. While the donor is living, the donation would remain anonymous unless otherwise requested by **both** donor and recipient.

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 recipient in exchange for the gift of a donated kidney.

**ALL LIVING DONORS HAVE THE RIGHT TO DECLINE TO DONATE AT ANY TIME.** Please be aware that if you do not wish to donate for any reason, at anytime in the evaluation process, your recipient will simply be informed that you are not a suitable donor candidate and, due to confidentiality issues, no specific reason will be given unless otherwise requested by the donor.

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

Yes, the following conditions **MAY** indicate that you are not a suitable donor:

- Under 21 years of age (women of childbearing age encouraged to wait until they are done having children) or over 55 years of age.
- High blood pressure (hypertension)
- Blood pressure controlled with anti-hypertensive medications
- Significant obesity (Basal Metabolic Index (BMI) over 35, calculation based on height and weight)
- Diabetes (diabetes induced by pregnancy may be considered after further evaluation)
- Strong family history of diabetes
- History of cancer (depending on type and length of time since diagnosis and treatment)
- Positive HIV status

- Positive Hepatitis status
  - History of kidney disease and/or stones
  - Use of illegal drugs within past 2 years (marijuana within 6 months)
  - Multiple sex partners or other high risk sexual behavior
  - Currently incarcerated individuals
  - Long-term use of non-steroidal medications (Advil, Motrin, etc.) such as with arthritis or other chronic pain conditions
- \*\*The above are general guidelines and all donors are evaluated on a case by case basis.

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

The routine tests required for your work-up 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 the last 12 months and females 35 yrs and older must have a mammogram that is normal and completed within last 24 months. Males > 45 years old must have a normal PSA blood level (prostate level) done within last 12 months. Colonoscopies for anyone 50 years or older.
  - ***Chest-x-ray*** (PA and Lateral)
  - ***EKG*** (12 lead)
  - ***Lab work***: blood typing x 2 separate draws, initial and final crossmatching tests, serologies (HIV, hepatitis, CMV, syphilis, & HTLV), chemistry panel, CBC, PT & PTT, 24 hour urine collection for creatinine clearance and total protein.
  - ***Magnetic Resonance Angiography (MRA)***: a scan which visualizes the kidneys and their surrounding blood vessels.
  - ***Psycho-social evaluation*** with our transplant social worker.
- \*\****Other tests*** may be indicated based on atypical results found during evaluation process (ex: cardiology work-up, renal angiogram if MRA is not conclusive, etc.).

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

Depending on your location and motivation, your entire work-up may be completed within 1-3 months once your initial crossmatching tests are complete and you are compatible with your recipient. The initial tests take approximately 2 weeks to complete. In most cases, your testing can be completed in 2-4 visits. If you are unable to come to us for your work-up, we can make arrangements with your local physician or appropriate facilities. Due to reimbursement policies, all tests must be pre-approved by each individual department's billing personnel before the tests can be ordered. We will assist you with this. 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 work-up. Also, ***it is important that all potential donors have time to reflect after consenting to donate.***

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

Sutter Transplant Services pays for all testing required for the living donor work up. 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. Again, 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 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 a modified open nephrectomy. This involves a 4-6 inch incision just below the rib cage on the front of the upper abdomen, usually on the left side. The entire procedure takes approximately 2 ½ hours. Most donors are discharged 2-3 days after surgery and are able to perform activities of daily living within 1-2 weeks, and may return to light duty work at 4-6 weeks. Donors with physical jobs may require 6-8 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 more than double the anesthesia time, requires 3 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 our 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 several 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, or "sluggish kidneys") from the warm ischemic time (time the kidney is without blood and oxygen) 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.

## **POTENTIAL RISKS AND COMPLICATIONS**

Because the person donating a kidney is healthy, there is much less risk involved than there is with a sick person who requires surgery. The mortality rate of a potential donor is estimated to be about 2 in 9,000. However, anyone who experiences surgery is exposed to some risk. The following are potential risks that anyone considering living donation needs to be aware of:

### ***Medical Risks:***

- Surgical complications including bleeding, blood clots, anesthesia and risk of donor death
- Organ failure and the need for dialysis and/or a future organ transplant for the donor
- Other medical complications, including long-term complications currently unforeseen
- Scars
- Pain
- Fatigue
- Abdominal or bowel symptoms such as bloating, nausea, constipation, vomiting

### ***Psychosocial Risks:***

- Problems with body image
- Post-surgery adjustment problems
- Transplant recipient rejection and need for re-transplantation
- Transplant recipient could experience a reoccurrence of their kidney disease
- Transplant recipient death
- Impact of donation on donor's lifestyle

### ***Financial Risks:***

- Personal expenses of travel, housing and lost wages related to living donation that are not reimbursed
- Child care costs
- Possible loss of employment
- Impact on the ability to obtain future employment
- Impact on the ability to obtain or afford health, disability and life insurance
- Health problems experienced by living donors following donation may not be covered by the recipient's or donor's insurance.

## ***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) 2-3 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 (removal of a kidney) and possible blood transfusion, 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 1-2 days. The actual surgery is

approximately 2 ½ hours. One kidney, its artery, vein and part of the ureter will be removed from you and transplanted into your recipient.

After your 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, and respirations) will be monitored frequently and blood tests and chest x-rays will be done as needed. Once you have awakened from anesthesia, you will be transferred to your room on the Transplant Unit (4 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 (4<sup>th</sup> 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 getting out of bed by the next morning.

***You may wish to limit visitors the day after surgery, as this is when most patients experience nausea and pain while anesthesia is wearing off.*** Your nurses can give you nausea and pain medication as often as they are ordered by your physician. TAKE THEM!!! Many patients are reluctant to take pain medications for fear of becoming addicted. Please realize, this is a major surgery and your body will heal much quicker if you manage your pain well. Most patients only need to take pain medications for the first week or two after surgery.

You can expect to have a dressing over your incision for 1-2 days. Your incision is closed with sutures that will dissolve over several weeks.

Expect to be out of bed the day after surgery and walking about the unit by your second post-op day. Most patients are discharged 2-3 days after surgery.

### ***FOLLOW UP***

Your coordinator will schedule your return appointment to the transplant clinic for 2 weeks after discharge and will arrange follow up lab work (renal panel, CBC and urinalysis with culture if indicated) just prior to your appointment. After you have gone home, you can expect a call from your coordinator to check in with you and make sure you are doing well. Patients typically experience some back discomfort or numbness over the incision. This is very common with kidney donation and symptoms usually subside over weeks to months. A few patients have reported that the numbness over the incision has never gone away, but has in no way affected them.

Many patients do not feel they need pain medications because they no longer have incisional pain, but are experiencing fatigue or lack of energy and therefore, tend to be inactive. This is actually the result of poor pain control. Pain medications allow your pain to be controlled so you can continue to be active and perform activities of daily living.

**\*\*It is important to remember that such medications as Advil, Motrin, or other anti-inflammatory meds are no longer recommended after kidney donation. The pain reliever of choice is Tylenol, or extra strength Tylenol.**

Having had the surgery should in no way alter your lifestyle. Once you have recovered from the surgery, your diet and other activities will be unchanged. At your follow up clinic visit 2 weeks after surgery, the surgeon will inform you if you can resume driving (you can no longer be taking narcotic pain medication) and you can expect to resume sexual activity whenever you feel comfortable participating (generally 2-3 weeks).

In an effort to track ongoing outcomes for living donors, transplant centers are required to report follow up living donor information for at least 2 years. We will attempt to reach you for follow up labs and, if possible, a brief clinic visit at 6 months, 1 year and 2 years following your kidney donation surgery. However, if the recipient's insurance company does not cover this lab and follow up clinic visits, your coordinator will attempt to contact you by telephone for an update and collect any lab results done by your primary care physician. This is to prevent you from incurring charges for these long-term follow up visits and lab work.

***Risks of having 1 Kidney:***

There are people who are born with only 1 kidney and do not even know it. The body only needs one kidney to function normally and in essence, one could think of the second kidney as a "spare part". At any given time, both kidneys are not functioning at full capacity and the loss of one stimulates the remaining kidney to increase its workload and take over the function that both kidneys previously provided.

***Long-term Considerations of having 1 kidney:***

Whether a person has 1 or 2 kidneys, all people are at risk for developing conditions that can lead to renal failure, such as adult onset diabetes, high blood pressure, kidney stones that lead to obstruction, autoimmune disorders that attack the kidneys, etc. Maintaining a healthy lifestyle will help to minimize a donor's risk of developing adult onset diabetes and hypertension, however, please be aware that unforeseen conditions (such as kidney stones or autoimmune disorders) can occur. Therefore, all living kidney donors should continue with preventative health checkups for ongoing blood pressure monitoring and assessment of renal function as determined by your primary care physician, but no less than annually. **Please remember, the occurrence of a kidney stone following donation is an emergency and requires resolution immediately to prevent the risk of obstruction to your only remaining kidney.**

***Can I have children after donating a kidney?***

While childbearing can be perfectly safe with only 1 kidney, our program prefers donors who have already had children and do not intend to have more. Therefore, we generally discourage women of childbearing age, especially <25 years of age, from being a kidney donor. However, all potential living donors are considered on a case-by-case basis and some exceptions may be made in extenuating circumstances.

**Conclusion:**

Hopefully this guide has answered many of your questions about living kidney donation. If you still have questions or concerns regarding any aspect of kidney donation and transplantation, please do not hesitate to call Kelly Guerrero, RN, at Sutter Transplant Services (800) 556-8133.

It is our goal to make this experience as comfortable for you as possible.

Thank you for your interest in living kidney donation.

## NOTICE OF NONDISCRIMINATION

Sutter Medical Center, Sacramento does not discriminate against any person on the basis of sex, disability, age, diagnosis, economic status, educational background, race, color, ethnicity, religion, ancestry, national origin, sexual orientation, marital status, or source of payment for care, whether the services provided are carried out by SMCS directly or through a contractor or any other entity with whom SMCS arranges to carry out its programs and activities.

If this facility provides emergency services, it must not deny those services to a person who needs them but cannot pay for them.

For further information about this policy, or in the event you wish to file a complaint alleging violations of the above, please contact:

Sutter Medical Center, Sacramento  
Integrated Quality Services Coordinator  
Telephone Number: 916-733-3075  
TDD: 916-454-2277

You may also file a complaint regarding any allegation of discrimination on the basis of sex, age, disability, race, color and national origin with the following agency:

Office for Civil Rights  
U. S. Department of Health and Human Services  
50 United Nations Plaza, Room 322  
San Francisco, California 94102

Telephone Number: 415-437-8310

TDD Number: 415-437-8311      Fax Number: 415-437-8329