

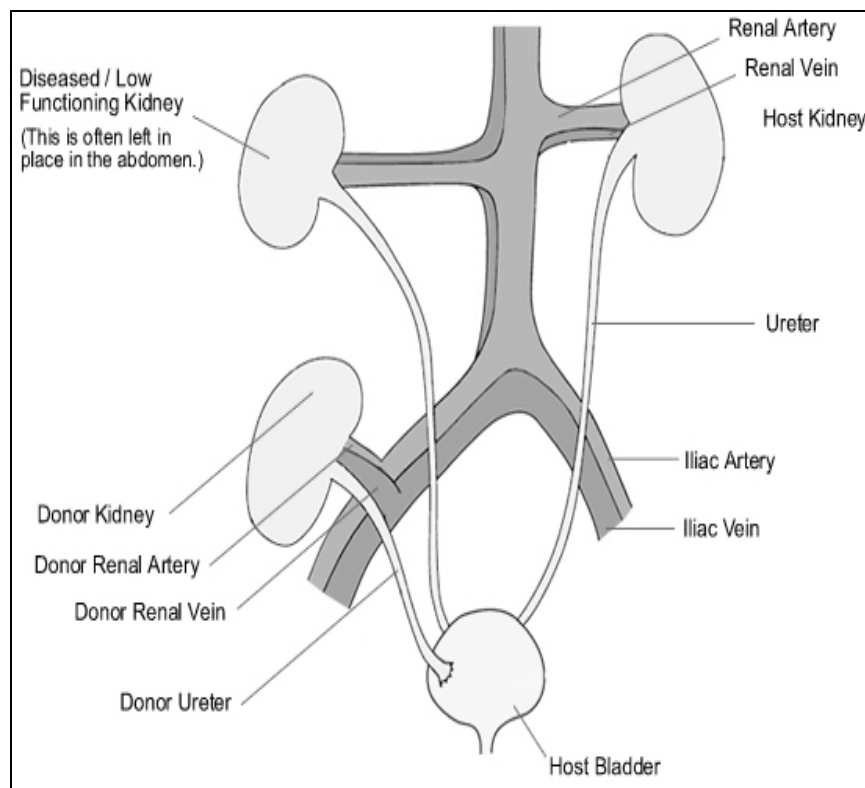
KIDNEY TRANSPLANT

“A window to a better tomorrow”

Transplant

Kidney transplantation is a surgical procedure in which a healthy, donated kidney is placed into a patient with kidney failure. It is another option for the treatment of End Stage Renal Disease (ESRD) other than dialysis. The donated kidney can perform all the functions that the patient's damaged kidneys are unable to do.

Once a patient decides to go through with a kidney transplant, they would begin the transplant evaluation process.



Types of Kidney Transplants

Kidneys for transplantation come from two sources:

- Living Donors - family members (i.e. mother, father, brother or sister), spouse and children who are at least 18 years of age.
- Cadaver Donors - people who have died and donated their organs for transplant.

Living Donors

Living donor transplants are encouraged for the following reasons:

- One of your blood relatives may provide a closer genetic match. The long-term success rate of living donor kidney transplants is excellent.
- A living donor's kidney will be removed in a scheduled surgery, thus eliminating the wait for a cadaver donor.
- The likelihood of immediate functioning of your kidney after a living donor transplant is greater because of the short length of time the donor kidney is without blood supply.

Donors will be evaluated very carefully and only then be accepted as donors.

Cadaver Donors

If you have been approved for transplant and do not have any living donors, or if you are unsure about living donors, then you will be placed on the cadaver donor waiting list. Once you are accepted for transplant, your name is placed on the national waiting list. Whenever a kidney becomes available, a search is made for the best genetic match for that kidney. When found, the potential recipient is notified and transplant is carried out.

SURVIVAL STATISTICS

Many factors may affect the estimated length of time a kidney transplant will function, including:

- first transplant versus re-transplant
- donor age
- cause of the recipient's end-stage renal disease
- recipient's compliance with medications and health care follow-up

PRA level of the recipient - The level of circulating Panel Reactive Antibodies or preexisting antibodies that a patient has developed from previous exposure to foreign tissue such as blood transfusions, previous transplants or pregnancies.

HLA (human leucocytic antigen) match - the degree of antigen match, often referred to as "tissue-matching."

Cold ischemic time of the kidney - the time the donated organ is in iced storage between the donor and recipient surgery (usually minutes for a living donor & hours for a deceased donor transplant).

Transplant Evaluation

Patients considered for a kidney transplant may have kidney failure from a variety of causes. The most common causes are glomerulonephritis, diabetes, high blood pressure, and polycystic kidney disease. Some patients may be considered for a transplant prior to beginning dialysis. Medical condition and age are among the factors which determine if transplantation is the optimal therapy for a particular patient's kidney disease. Some patients

with severe medical problems such as cancer or active infections may be considered not to be best served by a transplant.

Your transplant evaluation serves the important function of helping both the team and you decide if transplantation is your best treatment option.

Tests

Your evaluation will begin with several blood tests and a urine sample. We will also perform a chest X-ray and an ECG. If you are over 45 years old, have diabetes, or have other risk factors for heart disease, a cardiologist (heart specialist) will perform a stress test on your heart.

Then, depending upon the cause of your kidney disease and your age, an ultrasound, CT scan, or MRI of your abdomen may also be performed besides the routine tests and examination. An eye examination may also be necessary.

Other tests may include studies of your bladder and lower urinary tract. Women over 35 years of age should have a mammogram, and all women will need a current gynecological examination and PAP smear to rule out infections or other problems. A current dental examination is also recommended for all patients, to make sure you are free from potential infection.

After the transplant evaluation, your tests and lab work will be reviewed by the transplant team. You and your primary nephrologist will be notified.

Waiting for Your Transplant

The Cadaver Donor Waiting List

Due to the critical shortage of deceased donors, adults can wait on the list for more than two years before being transplanted. Your wait for a kidney may depend on the availability of organs, your blood type, your tissue type, and your level of preexisting anti-HLA antibodies. Remember that a kidney can become available at any time and your transplant team must be able to get in touch with you. The donor kidney can only be preserved for a limited amount of time before transplantation. You must keep the transplant team updated with any changes in your phone numbers, address, health status, and how to contact you if you are out of town. If the transplant team cannot reach you in a timely manner when a kidney becomes available, the next suitable candidate on the list will be offered the kidney.

The Procedure



Going to the Hospital

Living Donor Transplant

Once you have been approved for a living donor transplant, a date will be scheduled for your surgery. Approximately a week before your transplant, you and your donor will have blood drawn for a final cross

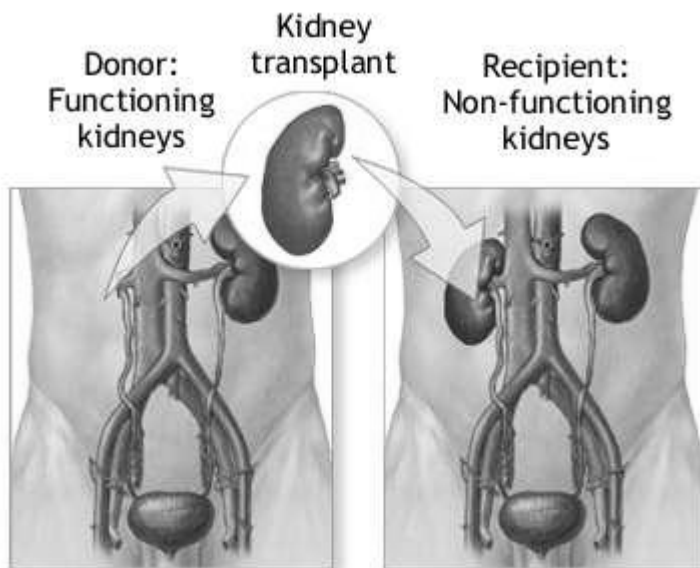
match test. This test makes sure you do not have any antibody sensitivities against your donor that could cause immediate rejection of the kidney.

Generally, you and your donor will be admitted to the hospital on the day before the surgery.

Cadaver Donor Transplant

When a donor kidney becomes available, a transplant coordinator will telephone you at the numbers you have provided. If you receive a message, please call back immediately since there is a limited amount of time before moving on to the next suitable candidate on the list.

The Kidney Transplant Surgery



Your transplant surgery will last about three hours. After arriving in the operating room, you will be given general anesthesia and put to sleep. The surgeon will make an incision on one side of your lower abdomen (usually the right side for first transplants) and the donor kidney will be placed in your pelvic area where it will be well protected. The blood vessels from the kidney will be connected to the large blood vessels supplying the leg. A small incision is made in the top of your bladder and the ureter (the tube that connects the kidney and the bladder) will be stitched to your bladder. This allows the urine from your new kidney to flow down to your bladder.

A ureteral stent is usually placed during the transplant surgery. A stent is a hollow plastic tube that is inserted inside the ureter to help keep it open while it heals. You will be informed if you receive a stent during surgery so you can receive the appropriate follow-up. Staples or dissolvable stitches will be used to close the incision.

Post-Transplant - What to Expect

Kidney Transplant

During your recovery period, we will frequently check your vital signs, draw blood and collect urine for lab tests, monitor your urine output, and administer medications. In order to monitor your kidney function, you may have some of the following tests:

- serum creatinine - this blood test measures kidney function. It is checked each day while you are in the hospital
- renal ultrasound - this test checks the kidney for any blockages or fluid collections around the kidney

You can expect to spend three to five days in the hospital after surgery. Close follow-up is essential for the success of your transplant, so after you are discharged, you may need to return to the transplant clinic daily for a few days for lab work.

Going Home After Your Transplant

1. You will need to check your temperature and blood pressure daily.
2. You need to weigh yourself every day. Please try to do this at about the same time each day (preferably in the morning after you have emptied your bladder) and while wearing about the same amount of clothing. Record your weight with your vital signs. If you have gained more than three pounds in a day or more than five to seven pounds in a week, you should call the transplant team. This weight gain may be a side effect of your medications or possibly a sign of transplant rejection.
3. We suggest that you obtain a special medical alert identification card. In case of an accident or other type of emergency, this will inform health care professionals that you have had a transplant.

You can expect to spend a total of three to five days in the hospital for your transplant.

When to Call the Transplant Team

You should call the Transplant Team if you experience any of these symptoms, or any time anything about your health changes, even if it is not related to your transplant:

- Temperature of 100° Fahrenheit / 37° Celsius or greater
- Blood pressure greater than 170/100 for two readings in a row
- Weight gain of more than 3 pounds (1.5 kg) in a day or 5 to 7 pounds (2.5 to 3.5 kg) in a week
- Cough, shortness of breath, sore throat, chills
- Nausea, vomiting or stomach pain
- Diarrhea
- Decreased appetite
- Blood in the urine or stools, painful urination
- Increased pain, redness, or pus-like drainage at the incision
- Pain, tenderness or swelling in the area of the new kidney
- Feeling unusually tired
- Persistent headache or flu-like symptoms
- Any unexplained rash, sores, or bruising
- Swelling of the hands, feet or ankles
- Unable to take medications for any reason
- Anything that concerns you about your health

Follow-Ups

Please remember to bring your daily records and a list of all your medications with you to each follow-up visit. Blood tests and examination by the physician will be done at each session to assess the efficacy of the transplant and also to detect early the signs of a graft rejection, if any.

Routine Blood Tests

Monitoring your blood through lab tests is one way that we can make sure your kidney is working well and check for possible side effects of your medications. When we draw your blood we will do several lab tests that measure your kidney function and the level of medication in your blood:

- Cyclosporine level - the blood level of immunosuppressant medication. This will tell us if a change in your dosage is needed.
- Creatinine - measures kidney function. Creatinine may be increased for several reasons including rejection, dehydration, or high cyclosporine levels.
- Potassium - may be elevated after transplant depending on kidney function, diet, and medication levels. Potassium levels may be low if you take diuretics or water pills.
- Hematocrit - measures the number of red blood cells. The hematocrit is usually very low in patients with kidney disease, but improves slowly after transplant.

- White blood cell count (WBC) - measures the number of white blood cells. It may be elevated because of infections or due to high doses of prednisolone. The WBC count can also be low due to viral illnesses or as a side effect of Cellcept or other immunosuppressant medications.
- Cholesterol - levels can be increased as a side effect of cyclosporine and prednisone. High cholesterol levels can contribute to heart disease; limiting the fat intake in your diet helps control your cholesterol levels.
- Amylase / lipase - enzymes secreted by the pancreas, part of the routine lab work in pancreas transplant recipients. An increase in either of these enzymes indicates the pancreas may be inflamed or irritated.

Ureteral Stent Removal

Most transplant recipients will have a ureteral stent placed as part of their kidney transplant surgery. If you have a stent, you will be informed of this by the transplant team. The urine which is made in your new kidney flows to your bladder through the ureter. The ureter came with the donor kidney and was connected to your bladder with a small incision. The stent is a thin hollow tube which is placed inside the ureter to keep it open and allow the connection to your bladder to heal.

The ureteral stent needs to stay in place for about six weeks after the transplant. By this time, healing will be complete and your stent can be removed. A urologist who works with the transplant team will remove the stent during a brief procedure called a cystoscopy. You will not be put to sleep, and no incision or surgery is needed. A flexible tube (the cystoscope) is inserted into your bladder, and the stent is removed through the cystoscopy tube. You may feel some brief discomfort or pressure. This procedure takes about 30 minutes.

A couple of weeks after you get home from the hospital, you will be contacted by the urologist's office to arrange an appointment time to have the stent removed. You may schedule this appointment on the same day you have an appointment scheduled in the Outpatient Transplant Clinic.

Medications

All transplant patients take immunosuppressants to help prevent rejection of their new organ. Many patients will require additional medication for their blood pressure and to replace magnesium. Most patients also receive a stomach acid reducer, a cholesterol-lowering agent, and antibiotics. Other medications will be prescribed based on patients' individual needs.

Possible Complications

People who receive a transplant may develop complications after their surgery. Your transplant team will help you understand the warning signs of possible complications, discuss your care, and recommend further treatment when necessary. The more common complications include rejection of the organ, infection, acute tubular necrosis and post-transplant diabetes.

Transplant recipients may also be at risk for contracting certain diseases from the organ donor, such as various types of infectious diseases and cancers, which are not detected during the organ donor screening process. The chances of this are negligible though.

Rejection

Rejection occurs when your immune system recognizes the transplanted kidney as foreign and attacks it. The immune system is your body's natural defense against other foreign invaders such as viruses, bacteria, and some types of cancers. To help prevent rejection of your new kidney, you must take immunosuppressant medications which will weaken your immune system. It is necessary for you to take them as long as your transplanted kidney is functioning.

Sometimes your immune system can overcome the effects of the medication and begin to reject the new kidney. You may feel good and have no symptoms, yet still be experiencing rejection. An increase in your serum creatinine or an increase of protein in your urine may be warnings of rejection. Most rejection episodes can be treated successfully with medication, especially if detected early.

Infection

Immunosuppressant medications decrease the risk of rejection of the transplanted organ; however, they also increase your risk of infection. This risk is greatest in the early period after transplant when dosages of medications are at their highest. It is always important to protect yourself from exposure to infection. Here are some suggestions:

- Wash your hands frequently.
- Avoid contact with people with known infections like colds or the flu.
- Clean cuts or scrapes with soap and water.
- Avoid sharing eating utensils with others or drinking from the same container.
- Notify a member of the transplant team if you notice any possible signs of infection.

Acute Tubular Necrosis

Acute tubular necrosis (ATN) is the medical term for a transplanted kidney which is slow to function due to factors associated with the transplant procedure. This condition is sometimes called a "sleepy" kidney. If this condition occurs, you may need dialysis temporarily to give the kidney time to heal. Limiting potassium and fluids may also be necessary. It may take several weeks for a transplanted kidney to start to function. You will return to your local dialysis center until your kidney begins working. You will continue to be followed closely by the transplant team.

High Blood Pressure

Some immunosuppressants can raise blood pressure; therefore, some transplant recipients must take additional medications to control their blood pressure. Notify a member of the transplant team if your blood pressure goes above 170/100 for two readings in a row.

Untreated high blood pressure may damage your heart and other organs.

Post-Transplant Diabetes

Some of the immunosuppressant medications that you take may increase the likelihood of diabetes. Diabetes is an increased level of sugar in your blood. Signs of diabetes may include excessive thirst, frequent urination, blurred vision, drowsiness or confusion. Notify the transplant team if you notice any of these signs. In some cases, high blood sugar can be reduced and managed by weight loss, careful diet, and exercise; however, you may need an oral anti-diabetic drug or insulin injections. If you get diabetes, you will be given special teaching about how to deal with this problem.

Cytomegalovirus (CMV)

Cytomegalovirus or CMV is a very common virus. About 70 % of adults have been exposed to CMV at some time. It usually causes a flu-like illness with fever, general body aches, and a decreased appetite which lasts for two or three days. After exposure to the CMV virus, your body forms antibodies in your blood to protect you from future exposures to CMV. This is similar to what happens after you have chicken pox. We are able to do blood tests to check both the transplant recipient and donor for the presence of CMV antibodies.

Because of the immunosuppressant medications, you will be at risk for infection with CMV after transplant. During the first few months, while the immunosuppressant doses are highest and your immune system is especially weak, the CMV virus can "reactivate" or "wake up." A CMV infection can range from flu-like symptoms to more serious infections involving your stomach, kidney, or lungs (pneumonia).

If either you or your donor were positive for CMV antibodies, you will be given an antiviral medication for the first few months after your transplant. As your doses of immunosuppressants are lowered over time, your risk for CMV will decrease as well and the medication will be stopped. If you develop an active CMV infection, you will be treated with medication in the vein.

Lymphocele

A lymphocele is a collection of lymph fluid around the kidney. It is normal for some fluid to collect around the kidney after transplant, but usually your body is able to reabsorb this fluid as healing occurs. Sometimes, however, a large build-up of fluid may put pressure on the kidney and the ureter and prevent urine from draining easily. In these cases, the lymph fluid will need to be removed. This can be done by placing a drain tube through the skin into the fluid collection and allowing it to drain into a bag over several days. Another option is for the lymphocele to be drained surgically. This operation is relatively simple and usually requires an overnight stay in the hospital.

*I did all the best I could,
For as long as my old kidney would.
My life was becoming even more weak,*

I had slowly given up, never to reach my peak.

*My heart, mind, and emotions began to fade,
It was a swift current I could no longer wade.
It was an intense struggle with destiny's finale,
There would be no crown made of holly.*

*In the depths of conflict and the final stand,
God intervenes with yet another plan.
I have a gift for your hour of need,
With this gracious gift of KIDNEY TRANSPLANT, my child, you will succeed*

Put this on Last page:

LOGO

Dr. Umesh Khanna

Chairman

Mumbai Kidney Foundation

111-C, Lancelot Medical Centre, Opp. Shastri Nagar, Borivli (West), Mumbai-400092.

Ph Nos.: 28012783, 28016266, 28626854

www.mumbaikidneyfoundation.org

24hrs helpline number: 9819164159