



Donor Information

KIDNEY

Transplant

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Disclaimer: The content herein is not intended nor implied to be a substitute for professional medical advice, it is provided for educational purposes only. You assume full responsibility for how you choose to use this information. Always seek the advice of your physician or other qualified healthcare provider with any question regarding a medical condition.

KIDNEY Transplantation

What is kidney transplantation?

Kidney transplantation is a surgical procedure involving the transferring of a kidney from one person (“donor”) to another person (“recipient”) whose kidney has failed due to certain medical conditions.

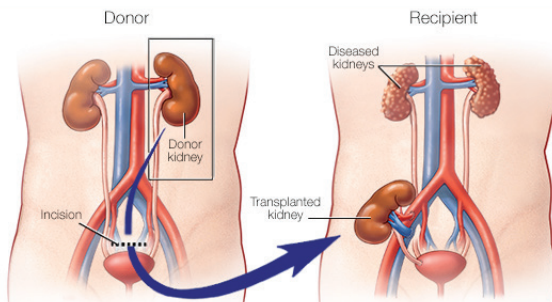
Other treatment options for patients with kidney failures are peritoneal dialysis and haemodialysis. Unfortunately, both types of dialysis can only replace some functions of the kidneys and many patients with End Stage Renal Disease suffer with many long-term complications. Kidney transplantation offers improved life expectancy and provides better quality of life.

There are two types of kidney transplantation procedures based on the source of the donor kidneys.

1. Deceased donor kidney transplant.

This type of transplant procedure involves the removal of kidneys from donors who are recently deceased and have consented to being an organ donor prior to their point of death. The cause of death for deceased donors is usually due to an accident or stroke. After the person has been declared brain-dead, the organs are surgically removed.

In Malaysia, the Malaysian Organ Sharing System (MOSS) chooses a recipient based on the criteria that has been pre-determined. In Malaysia, there is a large pool of patient on dialysis while the number of available kidneys for transplantation remain scarce. Therefore, patients waiting for a deceased donor transplant may have to wait many years for a kidney because there are not enough deceased donor kidneys to meet the growing need.



2. Living donor organ transplant.

In this case, a person (donor) chooses to donate one of their kidneys or part of their liver while the donor is still alive. The donor is usually a brother, sister, parent, spouse, adult child or a very close friend of the recipient. This type of transplant requires planning. The procedure is scheduled when both parties are in good health and when it is a convenient time for both of them. About half of the transplants performed in Malaysia come from living donors.

In Malaysia, more than 25,000 people are waiting for a kidney. Many wait for a long time for a kidney from a deceased donor. To spare an individual patient from a long and uncertain wait, relatives and loved ones may serve as living donors. In Malaysia, a majority of kidney transplants are made possible by living donors. If you are considering to become a living donor, it is critical to gather as much information as you can from various sources.

** This brochure aims to provide you basic information about living kidney donations.*

Who can be a living donor?

The living donor transplant procedure is usually performed between close blood relatives. However, a living donor does not have to be a blood relative. For example, a spouse (husband or wife) may be able to donate.

In Malaysia, the Ministry of Health (MoH) allows living organ donations **only to your relatives**. This includes your identical twin, your first-degree relative and your second-degree relative. If you wish to donate your organ to a distant relative [a third degree relative and beyond] or to someone who is not genetically related to you, you will be referred to the **Unrelated Transplant Approval Committee (UTAC)**. UTAC is a committee set up by the MoH to evaluate every application for **unrelated** living organ donations.

To be a living donor, based on the criteria as stated by the MoH, you must be:

1. An adult who is legally able to provide consent (18 years and above)
2. Fully informed of all risks that may occur
3. Physically and mentally fit
4. Fully aware of the decision you are making
5. Able to fully evaluate and understand all information given to you
6. Free from coercion, advice or opinions from sources apart from the institution which the transplantation will occur

Some pre-existing medical conditions could prevent you from being a living donor as it could harm the transplant recipient. These may include having diabetes mellitus, pre-diabetes, uncontrolled high blood pressure, severe obesity, cancer, HIV, hepatitis, acute infections, or psychiatric conditions requiring treatment. Therefore, it is imperative/vital that you share all information about your physical and mental health beforehand.



What are the risks of living kidney donations?

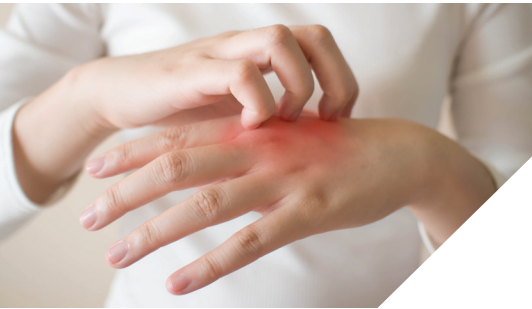
Kidney donation is associated with a minimal increase in the risk of having hypertension, protein leak in the urine and chronic kidney disease. Women donors face mild risk of having pre-eclampsia (Hypertensive disorder in pregnancy).

There are some other risks and complications associated with kidney donations. Most complications are rare, but it is important that you are aware of them.

Risks associated with the administration of anaesthesia are as follows but not limited to:

- Nausea and vomiting - up to 30% of patients.
- Damage to teeth - 1 in 4,500 cases.
- Sore throat and laryngeal damage.
- Anaphylaxis to anaesthetic agents - (2 in 1000 cases).
- Cardiovascular collapse.
- Respiratory depression.
- Hypothermia.
- Hypoxic brain damage.
- Nerve injury - 0.4% in general anaesthesia and 0.1% in regional anaesthesia.
- Awareness during anaesthesia - (2 in 1000 cases).

- Embolism - air, thrombus, venous or arterial.
- Backache.
- Headache.
- Allergic reaction to medications used.
- Risk of pneumothorax related to central line insertion.
- Risk of infection from the insertion of intravenous lines.
- The possibility of requiring mechanical ventilation (a breathing machine) after surgery.



- **Blood clots** in your legs. This is called a **Deep Venous Thrombosis**, which may travel to the lung. This can be life threatening. You will be advised to wear compression stockings and ambulate early after surgery to prevent this from happening.
- **Injury** to surrounding tissue or other organs.
- **Hernia** near the incision. To avoid this problem, you should avoid doing heavy-lifting for as long as four to six weeks after surgery. A hernia is more common with the flank incisional approach.
- **Death**. The risk of death associated with kidney donation is extremely low and is quoted to be 3 in 10,000 kidney donations.

► Long-term risk

There is a small increase in the risk of chronic kidney disease among kidney donors in comparison to non-donors. It is absolutely vital that you continue life-long follow-ups with a medical practitioner. The reason for this is to detect the risk factors for Chronic Kidney Disease (CKD); such as hypertension, proteinuria and diabetes early. This is so it can be treated at an early stage and prevent CKD from progressing.

The following surgical complications may occur but are not limited to:

- **Pain** or **numbness** around the incision area.
- **Lung, urine** and **wound infection**. The chances of developing a lung infection can be reduced by breathing exercises.
- **Bleeding** is uncommon. However, you may require a blood transfusion if this occurs. It is also important for you to understand the risks associated with blood transfusion. Please inform the transplant team if you are a Jehovah's witness.

You may experience negative psychological symptoms during the healing process and potentially even years after the donation. Your donated kidney may not function in the recipient after it is transplanted. You and/or the transplant recipient may have medical problems from the surgery. Scarring or other aspects of the donation process could possibly contribute to problems with body image. Treatment of these conditions can be lengthy.

With that in mind, it is of great importance that you talk to the transplant team as well as the Independent Donor Advocate to discuss your concerns.

PROCESS INVOLVED FOR DONOR FOR A LIVING KIDNEY DONATION

How do you start the process?

If you have a relative or loved one on dialysis, you need to speak to his/her nephrologists to determine whether a kidney transplantation is suitable for them. If kidney transplantation is deemed suitable for you and you are considering to be a kidney donor, please contact us at 03-7491 9191.

Here at Sunway Medical Centre, we will provide an Independent Donor Advocate (IDA) for all potential kidney donors. Your IDA is not part of the potential transplant (recipient) medical team. The IDA will assist you during the donation process. The IDA responsibilities include but are not limited to the following:

1. Promoting the best interests of the potential living donor
2. Advocating for the rights of the potential donor
3. Assisting the potential donor in getting and understanding information regarding the:
 - Consent process
 - Evaluation process
 - Surgical procedure
 - Medical and psychosocial risks
 - Importance of post-donation follow-ups

Please always be completely honest with the IDA and other staff from the transplant unit about your feelings, concerns, and fears about being a donor.

The donor advocate will not be involved with the potential recipient's evaluation and will remain independent on any decision to transplant the potential recipient.

You can change your mind and decide not to donate your kidney at any time during the evaluation process. The transplant team will then notify the relevant parties of your decision to withdraw but will not disclose your reason[s] to do so.

The IDA will address any question(s) you have. Please always be completely honest with the IDA and other staff from the transplant unit about your feelings, concerns, and fears about being a donor.

Workup and initial evaluation

Once you have contacted us and remain interested in being a donor, an appointment will be arranged. The first part will involve a psychosocial and a medical evaluation process. This assessment is done to ensure that:

- You fully understand the risk and benefits of donating one of your kidneys.
- You are a good donor candidate.
- The donation will not harm you.

You will need to answer all the questions that are asked. This includes questions about your past medical history, your social habits as well as your history of "high risk" behaviours. You will be asked to fully describe your reasons for wanting to donate and how it might affect your lifestyle (such as employment and family relationships).

Involving your loved ones in the educational part of the evaluation process can be helpful. They can learn about the donation surgery and recovery process and support you in your decision.

(a) Blood type

This is done to check blood type compatibility between you and the transplant candidate.

Blood type compatibility chart

Donor's Blood Group	Recipient Blood Group
O	O
A or O	A
B or O	B
A, B AB or O	AB

Blood type incompatible donations have been performed. In this situation, the recipients are required to undergo specialised medical treatment to reduce the risk of rejection.

(b) Tissue typing

This blood test checks the tissue match between six codes on the recipient and your white blood cells. The more matches there are, the higher the chance that the kidney will survive longer.



(c) Crossmatching & PRA screening

This blood test determines how the transplant candidate will react to your kidney. A "positive" crossmatch means that your organ will not match the candidate. A "negative" crossmatch means that your organ is compatible with the candidate. At the same time, the recipient blood will also be tested for the presence of "pre-formed antibodies". These antibodies may develop after blood transfusions, pregnancies or a previous transplant. If these antibodies are present in the recipient's blood they can immediately destroy the donated organ.

(d) Screening for transmissible diseases:

These tests determine if you have HIV/AIDS, hepatitis or other diseases. Some positive test results may need to be reported to local, state, or federal health authorities for public health reasons. This is extremely important as some infections can cause severe ill health to the recipient.

(e) Urine tests

- **24-hour urine sample:** This is collected to observe your kidney function and determine if you are at risk to develop certain types of kidney stones.
- **Urinalysis:** To evaluate the presence of blood, protein and infection.

(f) Chest X-Ray

This test is performed to screen for heart and lung disease.



(g) Electrocardiogram (ECG or EKG) and echocardiogram

This is to screen for heart disease. If the readings are abnormal, a stress test or other evaluation of the heart may be required.

(h) Nuclear imaging

This determines the total and split function of your kidneys.

(i) Ultrasound of the kidneys

This is to exclude any abnormalities in the kidneys.

(j) Cancer screening

Depending upon your age and medical history, the transplant team will decide if additional tests are required.

(k) Kidney CT angiogram

This test allows physicians to view the kidneys and its blood vessel supply. This will assist the surgeon to decide on which kidney to take.



What do I need to know about the surgical procedure?

Types of living kidney donation surgery

There are two types of surgeries for a living kidney donation:

1. Laparoscopic surgery

The latest approach is surgery with the help of laparoscopic instruments (tube-like video cameras), which is also called laparoscopic donor nephrectomy. The use of laparoscopic instruments allows the incision where the kidney is removed to be smaller and less painful. The major benefits of this type of surgery are faster recovery times and less discomfort for the donor.

2. Open surgery

An incision (about 6 to 8 inches) is made in the flank region on either your right or left side. Both the skin and muscle need to be cut in order to reach your kidney. Sometimes, the bottom rib on that side may be partially removed. Loss of this rib does not cause any disability or additional discomfort.

► Before the surgery

Both you and the recipient will need to come to the transplant unit approximately 14 days before the planned surgery to repeat the cross-match test. You will be admitted to the hospital one day prior to surgery. You will be assessed by the anaesthetist. The nephrologist and urologist will also see you to make sure both you and the recipient are well to proceed with surgery. You will then sign the operative consent form and be placed on a clear liquid diet. Do not eat or drink anything after midnight, the night before surgery.

A branula (small intravenous catheter) will be inserted into a vein in your hand or forearm. This is used to give you fluids and medication for pain after surgery. The branula stays in place for a short time after surgery until you are able to drink. Your doctor will determine when the branula can be removed.



► Day of surgery

On the day of surgery:

- You will be given special socks to wear called sequential compression stockings. These stockings help the blood flow in your legs and prevent blood clots from forming in your legs.
- After you are put to sleep in the operating room, a small tube called a “Foley Catheter” will be inserted into your bladder. This stays in place one or two days after surgery. This allows us to watch your urine output.
- A small tube will also be placed through your nose into your stomach to drain out stomach fluid. This tube is often removed before you recover fully from general anaesthesia.

► After the surgery

After surgery you will usually be placed in either an intensive care unit or high dependency unit for 24-72 hours depending on your condition. The nurses will take your blood pressure, pulse, temperature and measurements of urine output regularly.

Soon after you are fully awake, you will need to cough and perform deep breathing exercises at least every hour. This is to prevent lung infection. A side effect of the general anaesthesia is an increase of fluid in your lungs. If this fluid remains in your lungs, the risk of pneumonia will be greater.

You will be given medicine to reduce pain at the incisional site. Once your pain is under control, walking and deep breathing will be easier. Once you are able to eat, you will be taking oral pain medications rather than an injection.

You are encouraged to walk soon after surgery and this is essential in order to prevent some of the aforementioned complications.





POST-SURGERY ADVICE

► Discharge from hospital

You should be able to go home three to five days after surgery. You will be given specific instructions before you leave, including activity restrictions and your follow-up clinic appointments. You will also be given a supply of medication for the pain.

You will need to restrict your activity for the first two to four weeks after surgery, depending on the type of surgery performed. After this, you can return to your normal routine. You may exercise with moderation after four to six weeks and gradually increase your activity level. Walking is a good exercise. Do not do any heavy lifting within the first six weeks; driving during this time is also not recommended.

A clinic appointment will be made before you leave the hospital. You will need a long-term follow-up in order to monitor your blood pressure, kidney function and protein in the urine.

Please do not hesitate to contact the transplant team if you have any concerns.

► Physiotherapy advice after your donation surgery

This booklet provides simple advice and exercises to follow which can help prevent potential complications and speed up your recovery following your transplant.

You will be seen by a member of the physiotherapy team to discuss participation at our Renal Rehabilitation Class or other exercise options accessible to you.

If you have any further questions, please speak to a doctor or nurse caring for you.



► Recommended rehabilitation plan

Below is a recommended plan for you to follow as closely as possible to aid your recovery. If you require further assistance, please speak to your physiotherapist.

DAY ONE (1)

Chest physiotherapy - percussion, vibration, breathing exercises, effective coughing, active ROM exercises, sitting out of bed

DAY TWO (2)

Breathing exercises and active limb exercises, walking - as tolerable

DAY THREE (3)

Complete breathing exercises, aim to increase the distance and frequency of your walks, functional training

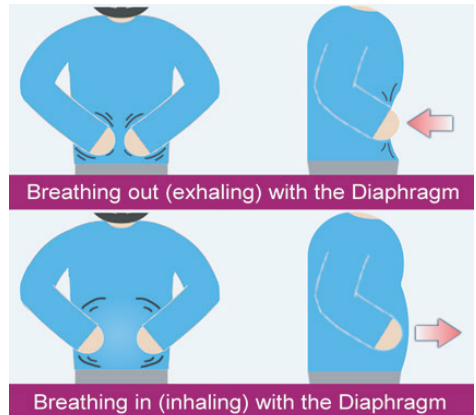
Speak to your physiotherapist or nurse if your pain stops you from completing the tasks above. Pain relief medication can be adjusted by your nurse to help with your recovery.

► Breathing exercises

Breathing exercises and moving around will help to re-expand your lungs. They also help to clear phlegm from the airways and therefore reduce the risk of chest infections.

Take four slow, deep breaths, holding for three to five seconds, and repeat every hour during the day. You should continue with these breathing exercises until you are spending most of the day out of bed and are walking around.

It is normal to have more phlegm in your chest after surgery, and coughing can often be uncomfortable. When you cough, hold a rolled up towel or pillow against your wound to provide some support. Coughing will not do any damage to your wound.



► Exercises in bed

Aim to complete the following exercises three times a day. This will improve your circulation and maintain your movement and strength. It is also important that you try to sit upright in bed as much as possible during the day to help prevent other complications.

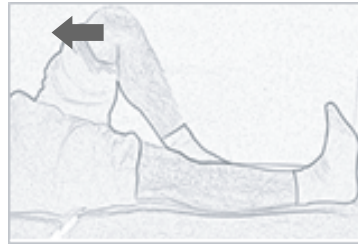
1. Ankle pumps

Move your ankles up and down repeatedly for one minute.



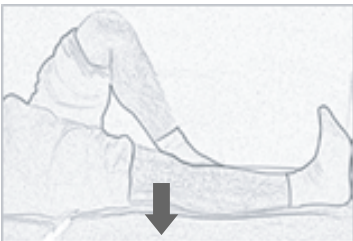
2. Knee bends

Bend one knee at a time up towards your chest and then straighten out. Repeat this 15 times on each side.



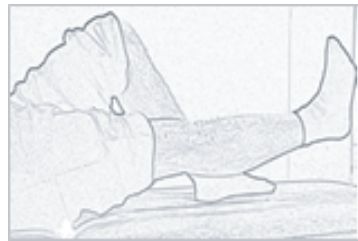
3. Straightening the knee

With a straight leg, push your knee down into the bed. Hold this for 5 seconds and repeat 15 times on each side.



4. Leg raises

Lift one leg up straight in the air, keeping your knee straight. Hold it up off the bed for five seconds and repeat 15 times on each side.



► Walking & exercises

Once you are at home, it is important that you continue taking walks to improve your fitness and continue the recommended plan.

Begin with the distance you have been walking in the hospital and aim to increase this distance gradually. A good indicator to show that you are on the right track would be if you are:

1. Able to feel your heart beat faster
2. Feeling a slight shortness of breath every time you increase your walking distance.

Returning to other forms of exercise or any gym programmes need to be approved by your doctor. To minimise the risk of injury, you should slowly increase the intensity of the exercise and take note of any unusual pulling or pain over your wound site – this is an indication to stop.



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