

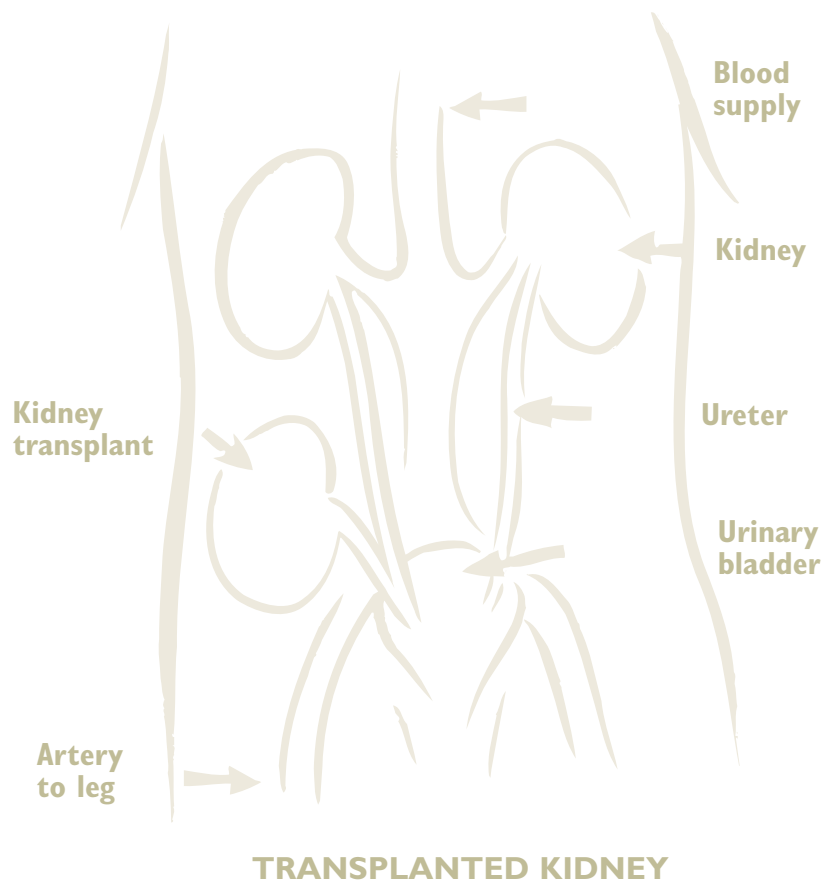
22. Kidney transplantation

A GUIDE FOR PATIENTS

Successful kidney transplantation is the ultimate goal of most people with end-stage renal failure. It remains a treatment, not a cure. People who undergo successful kidney transplantation will need to take anti-rejection drugs (immune suppressants) for the rest of their lives! Failure to do so will result in loss of the new kidney due to rejection and hence the need to recommence dialysis. The decision to proceed with kidney transplantation should be considered seriously as it involves several important risks.

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What is a kidney transplant?

When end-stage renal failure occurs and renal replacement therapy becomes necessary (see also section 19), a degree of independence is lost. Most people undergoing intermittent haemodialysis will need to attend a haemodialysis unit three times per week for several hours. People performing peritoneal dialysis will need to make a number of exchanges each day in order to remain healthy.

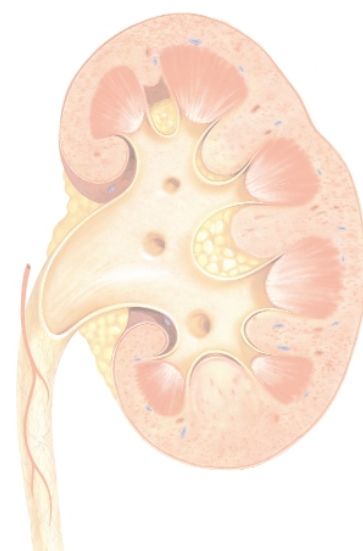
Kidney transplantation removes the need for dialysis (by inserting another person's kidney into the body) of the person with end-stage renal failure. The transplanted kidney or renal graft performs all the functions of a normal kidney.

Where are the kidneys for transplantation obtained?

In Australia, most kidneys for transplantation are obtained from people who are recently deceased. In circumstances where a person dies while on a respirator (ventilator) in an intensive care unit, their organs may be suitable for transplantation. These people may be considered suitable as organ donors if they previously expressed a wish to be an organ donor or carried an organ donor card or if their next-of-kin agrees to organs being donated. The kidneys obtained from these donors are called cadaveric grafts. In nearly all cases, the families of such donors find comfort in the fact that their tragedy has given life to others.

Family members or friends of the transplant patient sometimes donate also a kidney for transplantation. This is termed living-related or living-unrelated kidney transplant.

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Anyone unlikely to apply meticulous care regarding the taking of anti-rejection medications cannot be considered for transplantation.

Kidney transplantation continued...

Is everyone with end-stage renal failure suitable for kidney transplantation?

Unfortunately not. Kidney transplantation is a major operation carrying the same risks as any other big surgical procedure. For this reason the transplant recipient needs to be fit and healthy. All people with renal failure on dialysis who are considered for renal transplantation will undergo rigorous medical tests to ensure they are fit enough. If they are deemed suitable for transplantation, their name is submitted to the Australian Red Cross for listing on the renal transplant waiting list. Once on this list, it is the responsibility of the potential transplant recipient to be contactable at all times. The availability of mobile telephones has made this much easier in recent years.

Once 'listed', how long does it take to receive a kidney transplant?

In New South Wales, kidneys are allocated through the New South Wales Red Cross, based on two main criteria:

- > The result of a special blood test called **tissue typing**. It is tissue typing which determines the match (degree of compatibility) between a potential recipient and potential donor. Certain tissue types are more common than others and hence there are differences in the length of time people wait before receiving a suitable renal graft.
- > The second criterion is based on the length of time the potential recipient has been on dialysis. The average waiting time for kidney transplantation in Australia currently stands at 3 years, but it can be anywhere from just a few weeks to many years.

What medical tests are necessary before 'listing' for kidney transplantation is considered?

A complete medical history and thorough physical examination are always required. Many blood tests, urine tests and a dental evaluation are performed on all potential recipients. Depending on age, special X-rays, gastroscopy, colonoscopy, gynaecological evaluation (mammography in females) are performed. Some patients are also required to undergo coronary angiography in order to rule out heart disease.

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The major complication associated with kidney transplantation is acute rejection. This occurs as the body recognises the new kidney as not belonging or being non-self.

Kidney transplantation continued...**What are the main risks associated with kidney transplantation?****Short-term complications:**

The major complication associated with kidney transplantation is **acute rejection**. This occurs as the body recognises the new kidney as not belonging or being **non-self**. When this happens, the body attacks the transplanted kidney in the same way as it would fight severe infection. This can lead to a life-threatening illness which, if not controlled, may require removal of the new kidney. The most common time for this to occur is between 10 and 20 days after the transplant operation. Acute rejection used to occur in about 80% of kidney transplants, but with modern anti-rejection medications, it now only occurs in less than 25% of cases. When it does occur, it is frequently reversible due to the availability of new anti-rejection medications.

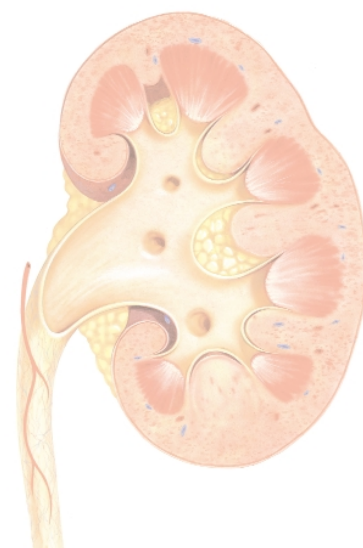
Because of the anti-rejection medications for successful kidney transplantation, the body is vulnerable to infection. These infections can be life threatening and every effort is made to avoid them. This involves taking special precautions for the first three months following transplantation. At this time the risk is highest, the patient should avoid people with infections and take special preventative medications to protect against the common forms of infection.

Long-term complications:

Though the number and dose of anti-rejection medications is reduced in the weeks to months following successful transplantation, they sometimes linked to major long-term problems:

- > Kidney transplant recipients are at higher risk of developing heart disease hence the importance of controlling elevated blood pressure. Also, keeping cholesterol levels within the normal range and not smoking.
- > Hypertension occurs in 80% of transplant recipients and may be affected by some of the immune-suppressive medication therapy. Reducing blood pressure is essential to prevent the risk of premature cardiovascular disease.
- > Raised serum cholesterol levels and other abnormalities of the fats in the blood are very common and need to be corrected with an appropriate diet, daily exercise, maintenance of ideal body weight and occasionally, medication therapy.
- > Infection remains a hazard, but the risk lessens with time as the body adapts to the new kidney and the dose of anti-rejection medications is reduced.
- > Obesity and weight gain are more common following transplantation, and every effort should be made to maintain ideal body weight.
- > Because of their immune-suppressive effects anti-rejection medications predispose to developing malignancy (cancer). This is another reason why transplant recipients should **never** smoke cigarettes!
- > Australia has the highest rate of skin cancers in the world. This risk is greatly increased in transplant recipients. The risk of skin cancer is two in every hundred (2%) transplant recipients each year. Avoidance of sun exposure and application of sunscreen is very important. Prevention is always better than cure!
- > The risk of non-skin cancer occurring is one in every hundred (1%) transplant recipients each year. Though still rare, cancer of the lymph glands, cervix, female genitals and oesophagus are much more common than in the general population. For this reason women should have annual cervical 'pap' smears and regular mammograms after they have undergone kidney transplantation. Cancers of the colon and lung are 2-3 times more common than in the general population.
- > Weakening of the bones may occur, due to the long-term use of corticosteroids (cortisone). Nowadays, this problem can be helped with special medications .

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Long term complications continued...

- > Cataracts are a relatively common complication of treatment with steroids and therefore the eyes need to be tested from time to time.
- > Diabetes mellitus is more common in kidney transplant recipients.
- > It has been estimated that up to 11% of renal grafts are lost due to recipients not taking their medication. In our experience this is most common in young people, particularly those who get their kidney easily, for instance from their parents or a family member and then believe they don't need long-term anti-rejection medication. This is a tragedy for all concerned and must be avoided at all costs.
- > The main anti-rejection medication in use in recent years is called **cyclosporin A (Neoral)**. Though it has contributed to more success in kidney transplantation, it is not without problems. Cyclosporin A frequently interacts with other medications. **It is strongly recommended that the renal unit be contacted when any additional medication(s) is prescribed to ensure that no interaction occurs with cyclosporin A.** Many medications, if prescribed in error, will dangerously increase the effect of cyclosporin A, while many others will have the opposite effect.

What is the overall success rate of kidney transplantation?

In Australia, nine out of ten kidney transplants are functioning successfully after one year and more than three-quarters are functioning successfully after five years. This must of course be weighed against the discomfort and risks of undergoing an operation and the inconvenience of frequent hospital visits in the initial aftermath of the transplant and the overall improvement in quality and length of life.

With all the inherent risks, why should I expose myself to kidney transplantation?

Successful kidney transplantation improves quality of life. Despite all the risks outlined, kidney transplantation in Australia at the beginning of the twenty-first century is relatively safe, and overall very successful.

People who receive a successful kidney transplant have been shown to live longer than those who remain on renal replacement therapy (dialysis).

Transplantation prolongs life!

Transplant recipients are cared for by many members of a multidisciplinary team which includes their local doctor, renal transplant co-ordinator, renal transplant nurses, dietician and pharmacist, but overall supervision will be provided by specialist renal physicians. People who undergo transplantation should be reviewed ongoingly and have their blood tested at least every three months, with frequent review in the **Renal Transplant Unit**.

General practitioners contribute to ongoing care including supervision of blood pressure, cholesterol and renal function, as well as regular pap smears and cancer surveillance.

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