

Heart transplants and organ donation

The world's first heart transplant was performed in South Africa in 1967. The first Australian heart transplant was performed in 1968 at St Vincent's Hospital, Sydney.

Heart transplants have been performed regularly in Australia since 1984. There are now heart transplant centres in Sydney, Melbourne, Brisbane and Perth. At the end of 2006, more than 74,000 heart, 2,800 heart-lung, 7,300 single lung and 6,000 bilateral lung transplants had been performed worldwide.¹ At the end of December 2008, Australia had performed 1990 heart transplants, 169 combined heart and lung transplants, and 1,450 either single or double lung transplants.²

As well as heart and lungs, other organs including kidneys, pancreas, liver and corneas, can be transplanted successfully.

Who needs a heart transplant?

If your heart is severely damaged, you may develop a life-threatening condition known as 'heart failure'. A small percentage of people who have heart failure (usually people with end-stage heart failure) need heart transplants.

Heart failure is when your heart can't pump as well as it normally does. It doesn't mean that your heart is about to stop. Heart failure is usually caused by coronary heart disease, high blood pressure or cardiomyopathy (a condition that weakens the heart muscle). Related conditions that can cause heart failure include heart attacks, viral heart infections, inherited forms of heart disease, and leaking or blocked heart valves. Children who have been given certain medicine for leukaemia and women whose hearts have been weakened by pregnancy or childbirth may also develop heart failure.

If heart failure is not treated, it can limit your ability to do physical activity and cause breathlessness, tiredness, and swelling in your legs and abdomen. It can also lead to electrical disturbances of your heart. In more advanced cases, it can make you breathless after very little physical activity or even when you are resting. Sometimes the breathlessness can become so bad that it wakes you up from sleep or you can't lie flat. Heart failure reduces your life expectancy.

People may be considered for a heart transplant when all other medical treatment options have been exhausted and they have been put in hospital for treatment for heart failure.

¹ Marshall I. Hertz *et al.* Registry of the International Society for Heart and Lung Transplantation: A Quarter Century of Thoracic Transplantation. *The Journal of Heart and Lung Transplantation*. 2008; 27:937-942.

² Australian and New Zealand Cardiothoracic Organ Transplant Registry, 2009. Annual Report 2008. <http://www.anzcotr.org.au/uploadedFiles/1247614507751-4414.pdf>. Accessed 1 September 2009.

Am I suitable for a heart transplant?

To be suitable for a heart transplant:

- your other organs, such as kidneys and liver, must work normally
- if you smoke, you must have stopped smoking
- if you drink alcohol, you will be encouraged to stop
- you must be willing to take care of your new heart.

How is who receives a heart transplant decided?

If you have severe heart failure, a cardiac team will test you to see if you are suitable for a heart transplant.

If you are suitable and you want a heart transplant, your name will be put on a waiting list. You will need to carry a pager with you so that your doctor can contact you at very short notice.

The final decision about whether or not you are suitable for a heart transplant is made by a transplant team in consultation with you.

When a suitable heart donor is available, people on the waiting list with a similar body weight and matching blood group to the donor are considered. The sickest person, if not already in hospital, is called to have a heart transplant.

What happens during surgery?

Heart transplant operations usually take three to six hours. There are two types of heart transplants.

- **Orthotopic heart transplants** are the most common type of heart transplant. They involve removing your diseased heart through an incision in the middle of your chest. Your old heart is then replaced with the donor heart.
- **Heterotopic heart transplants** are when the donor heart is 'piggy-backed' on to your old heart. In this case, the donor heart acts as an 'assist pump' for your diseased heart.

What about organ rejection?

You might have some form of organ rejection, particularly in the first six months after your heart transplant. It is common for people to have at least one episode of rejection.

Rejection happens because your body's immune system thinks the new heart is a foreign object, so it tries to get rid of or 'reject' it. To help prevent or slow down the rejection process, you'll need to take anti-rejection medicines (also called 'immunosuppressive' medicines) for the rest of your life.

Anti-rejection medicines may cause ongoing side effects because they stop your immune system working properly. If you take anti-rejection medicine, you will need to see your doctor regularly for a check-up.

When people think of rejection, they often imagine a dramatic event that causes sudden collapse and death. This is unlikely. It is quite common for people not to experience any signs or symptoms of rejection.

Your cardiologist can tell you if your body is rejecting your heart by doing a biopsy of your heart muscle.

What happens after a heart transplant?

You'll probably stay in hospital for about eight to 10 days after your heart transplant. You'll be given the rest of the medical care that you'll need as an outpatient.

At first, you'll have to see your doctor and cardiologist frequently, but eventually, you'll only need to have a check up once a year.

How long do people who have a heart transplant live?

The longest a person has lived after a heart transplant has been almost 24 years. The average heart transplant can be expected to last between 10 and 20 years. Some people have had more than one heart transplant.

Current survival rates in Australian hospitals following heart transplant are:³

- about 85% of people live one year after a heart transplant
- about 75% of people live five years after a heart transplant
- about 60% of people live 10 years after a heart transplant.

More than three out of four heart transplant patients go back to work and lead a normal life. There is generally no need to go back to lighter work; manual labour and other physical jobs are often still possible.

Heart transplants can be performed from infancy to 65 years of age (although the results are not quite as good in people over 60).

Are there enough donor hearts for everyone?

Currently there are not enough donor hearts for the number of people who need a transplant. In Australia, more than 100 people are waiting for heart transplants at any one time, often for up to two years.

³ Marshall I. Hertz *et al.* Registry of the International Society for Heart and Lung Transplantation: A Quarter Century of Thoracic Transplantation. *The Journal of Heart and Lung Transplantation*. 2008; 27; 937–942.

How are organ donors chosen?

A suitable organ donor must:

- be 'brain dead' (this means that although their heart is still beating, they have complete and irreversible loss of brain function)
- have the same blood type as the recipient
- have a similar body size and weight as the recipient
- have healthy organs
- have no detectable infectious diseases.

Before organ donation can happen, the donor's next-of-kin must agree to donating organs.

If you would like to be an organ donor, talk to your next-of-kin and other close relatives, so that they understand and know what to do if you die.

Are there any new developments in treatment?

There are new anti-rejection medicines that have fewer side effects currently being developed.

'Mechanical cardiac assist devices' are also being developed. If you are seriously unwell and a donor heart is not available, these devices will help your heart beat while you wait for a donor heart.

Further information

If you'd like to know more about heart transplants or organ donation, call our Health Information Service on 1300 36 27 87 (for the cost of a local call) or email health@heartfoundation.org.au.

For other useful information on heart transplantation, see <http://www.nlm.nih.gov/medlineplus/hearttransplantation.html>.

For more information on joining the Australian Organ Donor Register, see <http://www.medicareaustralia.gov.au/public/services/aodr/register.jsp#N10057>.

The Heart Foundation would like to thank Dr Peter Bergin of the Alfred Hospital, Melbourne and Professor Anne Keogh of St Vincent's Hospital, Sydney, who helped to prepare of this information sheet.

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INF-008-C

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