

Heart information



Bypass



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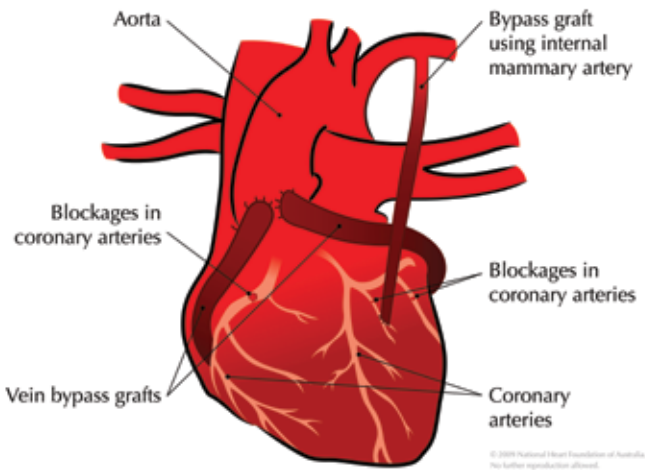
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What is bypass surgery?

Bypass surgery is an operation in which a blood vessel is taken from your chest, leg or forearm and grafted (attached) to your coronary artery to let blood 'detour' past a narrowing or blockage in this artery. It is used to improve blood flow to your heart muscle, when blood flow is reduced due to coronary heart disease (CHD) (see *Coronary heart disease* box on side).

Bypass surgery is a common and successful way to improve the health of people with CHD. It usually takes between three and six hours.

Bypass surgery



Did you know?

The full name of bypass surgery is 'coronary artery bypass graft surgery'. It is shortened to 'CABG' and pronounced 'cabbage'.

Coronary heart disease

Coronary heart disease is when your coronary arteries (the ones that carry oxygen and nutrients to your heart muscle) become clogged with fatty material called 'plaque' or 'atheroma'. Plaque slowly builds up on the inner wall of your arteries, causing them to become narrow. This process is called 'atherosclerosis'. It may start when you are young and be well advanced by middle age.

If your arteries become too narrow, the blood supply to your heart muscle is reduced. This may lead to symptoms such as angina. If a blood clot forms in the narrowed artery and completely blocks the blood supply to a particular part of your heart, it can cause a life-threatening heart attack.

Why do I need bypass surgery?

You need bypass surgery because one or more of your coronary arteries has become too narrow or blocked, and not enough blood can reach your heart muscle. This is probably because you have CHD.

Your doctor will discuss your treatment options with you. He or she will tell you if bypass surgery is the most suitable form of treatment to improve blood flow to your heart muscle and reduce your risk of further heart problems.

What are the benefits of bypass surgery?

Bypass surgery will improve blood flow to your heart muscle and reduce your symptoms of CHD, such as angina. In time, you may feel healthier and able to be more active than you were before the surgery. Your risk of further heart problems will also be reduced.

What will happen before I have bypass surgery?

Preparing for bypass surgery

Coronary angiography

To find out if you need bypass surgery, your doctor will assess your symptoms. You will have a 'coronary angiogram', a special type of real-time X-ray that shows the areas of narrowing or blockage in your coronary arteries.

During the coronary angiogram, you are given a local anaesthetic and then a catheter (a long thin tube) is put into an artery in your groin, arm or wrist. The catheter is moved up the inside of your artery until it reaches your heart. A special dye is then injected into your coronary arteries and X-rays are taken. The X-ray shows your doctor detailed information about your coronary arteries, including whether or not your arteries are narrowed and if so, how narrow they are.



Coronary angiogram

Talk to your doctor

Find out as much as you can about bypass surgery, and what to expect when you are in hospital and when you are recovering.

Talk to your doctor about any concerns that you have about bypass surgery. The more you understand, the less anxious you will feel about it.

If the hospital runs a 'briefing' or pre-admission session for people about to have surgery, try to go. The session will give you information about bypass surgery and help you to plan for it.

Quit smoking

If you smoke, your doctor will strongly advise you to give up before bypass surgery. Quitting smoking will help your lungs to cope with surgery and reduce your risk of further health problems.

Some surgeons refuse to operate on people who smoke because there is a greater risk of problems after surgery, such as chest infections or pneumonia. When you stop smoking, the surgeon may not operate until you have been smoke-free for at least six weeks.

Your doctor will also strongly advise you not to start smoking again after surgery. If you do, there is a greater risk that you may develop further plaque, block your new bypass and need another operation.

Blood transfusion

Techniques and medicines are used during surgery to minimise blood loss. Only one in three people have blood transfusions during bypass surgery.

All blood products used for transfusion in Australia are strictly screened to protect patients against viruses that can cause hepatitis and AIDS.

Medicines

A week or so before bypass surgery, your doctor may ask you to stop taking medicines that increase the chance of bleeding (anti-clotting or anti-coagulant medicines).

Want to speak
with a health
professional? Call
1300 36 27 87



The day before bypass surgery

You will probably go to hospital the day before or on the morning of your bypass surgery, so that you can get ready and meet the medical team that will do your operation. The team may include surgeons, nurses, cardiologists, anaesthetists and therapists, who will care for you before, during and after surgery.

The medical team will talk with you about your bypass surgery and recovery, and can answer any questions that you have.

The anaesthetist will ask you questions about your medical history and if you have any known allergies.

Much of your body hair will be clipped. Areas of your leg or forearm and your chest will be scrubbed with antiseptic surgical soap when you have a shower before surgery to prepare the area for surgery.

The day of bypass surgery

Give personal items, such as glasses, contact lenses, dentures, watches and jewellery, to family members or the nurse to look after before you go into the operating room.

About an hour before bypass surgery you will be given medicine to make you sleepy and to keep your airways clear of saliva.

You will be asked to lie on a rolling bed and taken to the operating room. In the operating room, you will be given an anaesthetic to keep you asleep during surgery.

Most hospitals have a waiting area for families. If your family decides to wait at home, the hospital will call after surgery to let them know how it went. Make sure the hospital knows where your family is if they need to be contacted or updated.

Some hospitals may let close relatives briefly visit the recovery room or intensive care unit (ICU) shortly after bypass surgery, while you are still asleep.

What will happen when I have bypass surgery?

The surgeons will cut along the midline of your chest, through your breastbone (sternum), to reach your heart.

During surgery, you may be connected to a heart/lung machine, which will temporarily take over from your own heart and lung during surgery.

Sometimes surgery can be performed through a smaller incision in your chest and without using a heart/lung machine. Whether or not this is possible depends on the number of narrowings and where they are in your coronary arteries.

If the blood vessel for the bypass graft is coming from your leg or arm, a cut will be made in the area from where the blood vessel will be removed. A cut may also be made in your groin so that the large blood vessels can be reached. Leg or arm blood vessels are then connected to the aorta (the main artery carrying blood away from your heart) and the coronary artery beyond the narrowed section.

If the internal mammary artery (from your chest) is used, one end of the artery is usually left attached to its blood supply and the other end is connected to the coronary artery beyond the narrowed section.

What are the risks of bypass surgery?

Complications of bypass surgery can include stroke, bleeding and infection. The risk of death from bypass surgery is about 1%,* although it can be higher for people over 80 years of age; for people with severe kidney, lung or liver problems; and where surgery is performed as an emergency procedure.

Talk to your doctor to find out about your individual risk.

* Tatoulis J, Buxton BF, Fuller JA. The Radial Artery in Reoperative Coronary Bypass Surgery: A 5-Year Experience. *J Cardiac Surgery* 2004; 19(4): 296–302.

For more
information
on this topic
please call
1300 36 27 87



Want to know
more? Call
1300 36 27 87



What will happen after I have bypass surgery?

After the operation, you will be taken to a recovery area or intensive care unit (ICU) for close supervision until you wake up from the anaesthetic. You will probably stay in the intensive care unit for one or two days. After the intensive care unit, you will be moved to another ward until you are ready to go home.

When you wake up, you will have tubes and wires attached to parts of your body.

You will have a breathing tube in your mouth that passes between your vocal chords and windpipe. It isn't painful but will stop you talking. It is usually removed within eight to 24 hours of surgery.

You may feel confused when you first wake up, and you may find it hard to keep track of time. This is normal and may be caused by the effects of painkilling medicines, the lights being on 24 hours a day and all of the activity going on around you. Any confusion should only last a day or two until you are moved to a quieter ward.

Before you leave hospital, your doctor will make follow-up appointments for you to discuss your medicines, wound care and physical activity with them. Your cardiologist will continue to oversee your general heart health.

Your first outpatient appointment will usually be four to six weeks after you leave hospital. You will see your surgeon, or a member of your medical team. They will check your wound and general progress, and you may also have an X-ray at this time.

Will I feel pain after bypass surgery?

You will probably feel some soreness and discomfort, especially during the first few days after surgery. You will be given pain killers regularly to make sure that you don't feel severe pain. If the pain starts to build up, tell your nurse sooner rather than later. You and your nurse need to communicate and manage your pain together.

Medicine won't get rid of all of your pain, but it can manage it. Stronger painkilling medicines are needed for only a few days, so there is very little risk of becoming addicted to them.

How long will I have to stay in hospital?

This varies depending on your condition and your response to surgery. On average, after bypass surgery, people stay in hospital for six to seven days.

How long will it take to recover from bypass surgery?

Normal recovery from heart surgery takes four to six weeks. During this time, you will begin to strengthen your arm and leg muscles and return to your usual activities.

Usually wire or special strips of tape are used to hold your breastbone together. These do not need to be removed. It takes about six to 12 weeks for your breastbone to heal completely. During that time you shouldn't lift anything heavy.

Soon after your operation, your chest wound will be exposed to the air, allowing it to dry. After a few days, the wound can be cleaned.

If the mammary artery was used in the graft, you may feel numbness or a different or unusual sensation down the side of your breastbone. This usually changes to a super-sensitive feeling after a few weeks and gradually returns to normal.

Quick tip

It's important that you are free of pain when you go to bed so that you get a good night's sleep.

At first it will be most comfortable to lie on your back, propped up at about 45 degrees. In time, you will be able to sleep in your normal position again.

You might also find it helpful to learn relaxation techniques or listen to relaxation tapes to help you to sleep.

If the graft was taken from your leg, you may feel numbness around your ankle. This numbness may last for several weeks. Your ankle may swell, but wearing elastic support stockings and putting your legs up when you rest can help to relieve this. Walking will help your leg to recover and is good for your heart, but ask your doctor when you can start being more active.

If the graft was taken from your forearm, you may feel numbness on the back of your hand at the base of the thumb. This numbness may also last for several weeks before returning to normal.

After major surgery, such as bypass surgery, recovery time may seem to pass slowly. Your body has been slowed down by lowered activity, lack of good sleep, medicines and the surgery itself. You may feel drained physically and emotionally. Many patients feel 'down' about four days after the operation. This is a normal feeling and it will usually pass.

What can I do to help me to recover more quickly?

Sitting up and moving your arms and shoulders often can help to relieve soreness in your arms and chest.

It is important that you cough and do deep breathing exercises after bypass surgery. This will help you to recover more quickly and will reduce your risk of chest infections, pneumonia and fever. You will be shown how to do them correctly before surgery. While they may cause some pain to start with, they won't do any damage.

Your nurse or physiotherapist will clap his or her hands against the side of your chest to loosen substances in your lungs to make it easier for you to cough them up. You may find it easier to cough if a pillow supports your breastbone.

Changing positions in bed to relieve pressure on your skin, sitting in a chair or walking around your room will also help you to recover more quickly. Try gradually building up to short walks in the corridor, then take longer walks and climb stairs to increase your muscle strength. Your nurse or physiotherapist will be there to help you.

Some hospitals run outpatient rehabilitation programs. These can be a very important part of your recovery and will help you to continue the gradual increase in activity you began in hospital.

When can I start eating again?

After your breathing tube is removed, you will be able to swallow a small amount of liquid and build up to foods over the next couple of days.

How will I feel about leaving hospital?

Many people feel a little anxious and depressed about leaving the security of hospital to go home. Remember, you will only be allowed to leave if the doctor thinks that you are well enough and will continue to recover at home.

What happens when I get home?

For the first few weeks, your family and friends will need to keep a close eye on you and help you.

If you normally live on your own, someone will need to stay with you for the first few weeks after you return home. Some home care agencies can help you until you can manage on your own again. If you need extra community services, talk to your doctor.

You will need lots of rest, but try to get back into a normal routine as soon as possible.

- Get up at a normal hour.
- Bathe or shower if possible.
- Get dressed for the day – don't stay in your sleeping clothes during the day.
- Rest mid-morning, mid-afternoon and after physical activity.

Cardiac rehabilitation

The Heart Foundation and World Health Organization recommend that all patients who have had a heart attack, heart surgery, coronary angioplasty, angina or other heart and blood vessel disease attend an appropriate cardiac rehabilitation and prevention program.



You should be able to:

- help with light work around the house
- go to places, such as a theatre, restaurant or church
- visit friends
- ride in a car
- climb stairs slowly.

You may feel weak when you first go home, but this isn't usually serious. It is normally because you didn't use your muscles very much while you were in hospital.

What should I be eating?

Enjoying a variety of foods from the different food groups is the key to healthy eating. Choose:

- mainly plant-based foods, such as vegetables, fruit, legumes (e.g. chick peas, kidney beans, baked beans and lentils) and plain unsalted nuts
- wholegrain cereal foods, such as breakfast cereals, bread, pasta, noodles and rice
- moderate amounts of lean unprocessed meats, skinless poultry and reduced, low or no fat dairy products
- oily fish – include a 150 gram serve in two or three meals per week
- foods with low or reduced salt content and foods labelled 'no added salt', 'low salt' or 'salt reduced'
- plant-based oils, such as canola, sunflower, soybean, olive and peanut oils.

Your doctor, dietitian or nursing staff will give you advice on healthy eating.

When can I be more physically active?

Once you are at home, continue with the level of activities that you started in hospital. Your surgical or rehabilitation team will give you advice on what physical activity to do over the coming weeks and months. They will probably create a physical activity plan for your needs.

Set realistic goals for yourself. Don't over do it, but don't be inactive either. Rest when you need to and change an activity if it is making you too tired. Doing too much at this time won't injure the heart. It will, however, make you very tired.

Remember to start slowly. For the first few weeks after surgery, you will need lots of rest, as well as help to do the shopping, cooking and heavy household tasks.

Walking is a very good physical activity after bypass surgery. Gradually build up how long and how quickly you walk, but don't do more than your doctor recommends.

As you become more active during your recovery, you will probably get some pain associated with the wound or muscles in your chest, shoulder, neck and back. Continue to take your pain-relieving tablets (e.g. paracetamol) when you need them. You will be able to reduce these gradually. **Don't neglect any type of severe pain.**

When can I have sex?

Everyone's recovery time is different. When you feel that you have recovered enough, which you can judge from how much pain you have and the level of physical activity that you can do, you should be able to have sex again. For example, if you can climb one flight of stairs without getting chest pain or shortness of breath, you will probably be able to cope with the amount of energy required for sex.



Important note about physical activity

If you experience chest wound complications, such as redness or weeping and/or movement of the breastbone, contact your surgical team for advice. You may need to stop your activity or take it a bit more slowly and allow more time for healing.

Remember

Call your doctor if:

- your pain is severe or gets worse
- you have any sign of infection, fever, chills or swelling
- you are short of breath
- you are putting on a lot of weight
- there is a change in the speed or rhythm of your heartbeat
- there are any other symptoms that worry you.

Be careful not to put any pressure or stress on your chest. You may find that some positions are more comfortable than others, because of discomfort in your chest wound. It can take time for sexual relationships to get back to normal after surgery, so try to take things slowly. Make an effort to discuss your feelings and concerns with your partner.

Remember to stop any activity, including sex, if you feel pain or discomfort in your chest.

When can I drive, and can I wear a seatbelt?

Your doctor and/or rehabilitation team will tell you when you can start driving again. You may have to avoid driving a car for one to two months after bypass surgery because your reaction time will be slower due to weakness, tiredness and medicines.

Contact the relevant authority in your state, and/or your insurance company, to seek advice on any restrictions or implications for your insurance coverage.

You can wear a seatbelt as usual. If you feel pain from wearing a seatbelt, try wearing a jumper for extra protection.

What if I have to travel on public transport?

If you have to travel by train, bus or plane, let the transport company know about your condition and they will usually let you board before other passengers.

If you need a wheelchair, let the transport company know and they will make arrangements for you.

When can I return to work?

This decision is usually made after your four to six week check-up. It will depend on your type of work, how demanding your job is, your strength and other factors. Office workers can usually return to work in six weeks. If your work is more physically demanding, follow your doctor's advice.

Why do I feel great one day, but dreadful the next?

It is normal to feel 'down', frustrated, anxious, angry, worried or tired after bypass surgery. These feelings often do not last long and may be eased by talking to the people around you, such as your doctor, cardiac rehabilitation team, family and friends. Doing something interesting each day and not changing your normal lifestyle too much can also help.

While negative feelings are common and normal after bypass surgery, symptoms lasting longer than a couple of weeks may indicate depression.

Depression is more common in people with CHD than in the general population. People with depression usually feel sad, down or miserable most of the time, and find it hard to do normal activities. If you are experiencing symptoms of depression for more than two weeks, it is very important that you talk to your doctor. He or she can discuss with you treatments that can help.

Will I need to take medicines?

After bypass surgery, you will need to take medicines. However, only take medicines prescribed by your doctor.

You must tell your doctor about all of the medicines you were taking before your operation, including over-the-counter (non-prescription) medicines. Don't keep taking them after your operation unless you have talked to your doctor about them and he or she prescribes them for you.

Your doctor will monitor your blood pressure and cholesterol. He or she is likely to prescribe a cholesterol-lowering medicine, such as a statin, even if your cholesterol is in the 'normal' range. You might also be prescribed an anti-clotting (anti-coagulant) medicine, such as aspirin or clopidogrel, or other medicines that you need to take for the long term.

It is important to take all of your medicines for as long as your doctor tells you to.

Remember

If you have any concerns about side effects, tell your doctor. It is important that you work closely with your doctor to find the medicine (or medicines) that work best for you.



How can I reduce my risk of further heart problems?

The things that you do and the choices you make can greatly reduce your risk of more heart problems in the future, including heart attack.

The most important things you can do to reduce your risk of more heart problems are to:

- take your medicines as prescribed by your doctor
- be smoke-free
- enjoy healthy eating
- be physically active
- manage your blood pressure and cholesterol
- achieve and maintain a healthy body weight
- maintain your psychological and social health.

People with diabetes should generally aim to maintain their blood glucose levels within the normal non-diabetic range and follow individual advice from their doctor or accredited diabetes educator.

Heart attack

A heart attack is an emergency. Getting to hospital quickly can reduce the damage to your heart and increase your chance of survival.

A heart attack happens when there is a sudden, complete blockage of an artery that supplies blood to your heart muscle (a 'coronary artery'). As a result, some of your heart muscle starts to die. If the artery stays blocked, the lack of blood permanently damages the area of your heart muscle that is supplied by that artery.

It is important that you know what to do if you or someone else has a heart attack.

Will you recognise your heart attack?



Do you feel any

pain

pressure

heaviness

tightness

In one or more of your

chest

neck

jaw

arm/s

back

shoulder/s

You may also feel

nauseous

a cold sweat

dizzy

short of breath

Yes

1 STOP and rest now

2 TALK Tell someone how you feel

If you take angina medicine

- Take a dose of your medicine.
- Wait 5 minutes. Still have symptoms? Take another dose of your medicine.
- Wait 5 minutes. Symptoms won't go away?

Are your symptoms severe or getting worse?

or

Have your symptoms lasted 10 minutes?

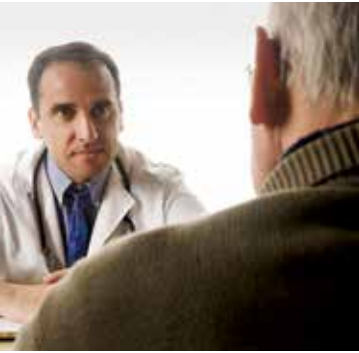
Yes

3 CALL 000* Triple Zero

- Ask for an ambulance.
- Don't hang up.
- Wait for the operator's instructions.

*If calling Triple Zero (000) does not work on your mobile phone, try 112.

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What should I talk to my doctor about?

Bypass surgery is a major event in your life and you should make sure that you are well informed about why you need the surgery, and what the benefits and risks of surgery are.

Below are some questions about bypass surgery that you may want to ask your doctor.

1. What benefits will I get from surgery?
2. What are the risks or potential complications of surgery?
3. Will I need a blood transfusion? Can I donate blood for myself?
4. How many bypasses will I have?
5. Will there be a lot of pain?
6. What medicines will I need to take after surgery?
7. Will I live longer if I have surgery?
8. How much will surgery cost and how much will be covered by insurance?
9. How long will I be in hospital?
10. If I need to travel from my home to a different town for surgery, how long should I stay there after I'm discharged from hospital?
11. Is there a place nearby where my partner can stay while I'm in hospital?
12. How soon after surgery can I go back to work?
13. How often should I have follow-up visits?

Health Information Service

The Health Information Service is our national telephone information service. For the cost of a local call from anywhere in Australia, you can obtain information on issues such as heart disease and stroke, healthy eating, managing blood pressure, cholesterol, smoking cessation, physical activity and heart surgery.*

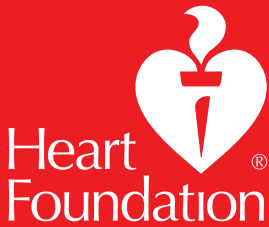
Our Health Information Service is open during business hours, Australia wide. To speak to a trained heart health professional, call our Health Information Service on 1300 36 27 87 or email health@heartfoundation.org.au.

* Please note that our Health Information Service is not an emergency, diagnostic or counselling service. We support giving free heart health information to the Australian public—many of our brochures are free of charge for single copies. If you have any questions, call our Health Information Service on 1300 36 27 87.



Learn more

If you'd like to learn more about bypass surgery, how to reduce your risk of heart problems or anything else we've mentioned in this booklet, call our Health Information Service on 1300 36 27 87 and speak to one of our trained health professionals.



For heart health information
1300 36 27 87
www.heartfoundation.org.au

Key things to remember about bypass

Bypass surgery is a common and successful way to improve the health of people with CHD.

The full name of bypass surgery is 'coronary artery bypass graft surgery'. It is shortened to 'CABG' and pronounced 'cabbage'.

After bypass surgery, you will need lots of rest, but try to get back into a normal routine as soon as possible.

After bypass surgery, you will need to take medicines. However, only take medicines prescribed by your doctor. It is important to take all of your medicines for as long as your doctor tells you to. If you have any concerns about side effects, tell your doctor.

The most important things you can do to reduce your risk of more heart problems are to:

- take your medicines as prescribed by your doctor
- be smoke-free
- enjoy healthy eating
- be physically active
- manage your blood pressure and cholesterol
- achieve and maintain a healthy body weight
- maintain your psychological and social health.

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CON-086.v4
ISBN 978-1-921226-62-5

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