

Heart information



Coronary angioplasty and stents



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What is coronary angioplasty?

Coronary angioplasty is a medical procedure used to treat coronary heart disease (see *Coronary heart disease* box on the right). During coronary angioplasty, a small balloon is inflated inside one or more of your coronary arteries to open up an area of your arteries that has become very narrow. This will improve blood flow to your heart.

Coronary angioplasty is not a cure

Coronary angioplasty is not a cure for coronary heart disease. It only treats the particular area of your arteries that have become very narrow due to heart disease. Some people's coronary arteries may narrow again at or near the site of the angioplasty. Other people may develop new areas of narrowing in their arteries. Either situation can lead to a return of the original symptoms, which may need further treatment.

The best way to lower your risk of more heart problems is to take your medicines as prescribed by your doctor and reduce or remove your 'risk factors' (things that increase your chance of developing coronary heart disease).

The most important things that you can do are to:

- take your medicines as prescribed
- 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 diabetic educator.

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 can start when you are young and can 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 coronary angioplasty?

Your cardiologist may recommend that you have coronary angioplasty as treatment for coronary heart disease. In most cases, this will also involve putting a stent in the area of your coronary artery that is being treated (see page 7 for more about stents).

You may need coronary angioplasty to improve blood flow to your heart if one or more of your coronary arteries become too narrow. Coronary angioplasty is commonly used to treat:

- angina
- a heart attack.

Angioplasty will open narrowed arteries, helping to quickly restore blood flow to your heart muscle and during a heart attack, minimise damage to it.

Other treatments for narrowed arteries include bypass surgery (also called 'coronary artery bypass graft' or 'CABG' and pronounced 'cabbage'). Bypass surgery involves grafting a blood vessel from your chest, leg or forearm to your coronary artery to redirect blood flow around the most narrowed part of this artery. It lets your blood 'detour' past the narrowing to reach your heart muscle.

Your cardiologist will look at your symptoms and the results of your angiography test and then tell you what treatment is most suitable for you.

For more information about your heart health, coronary angioplasty or bypass surgery, call our Heart Health Information Service on 1300 36 27 87 and speak to one of our trained health professionals.

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



What will happen before I have coronary angioplasty?

Coronary angiography

'Coronary angiography' is a test that your cardiologist will do when your doctor suspects or knows that you have coronary heart disease. It is a special type of real-time X-ray that shows the areas of narrowing or blockage of your coronary arteries.

Coronary angiography may be performed before or at the time of angioplasty. Your cardiologist will discuss it with you before you have the test.

During coronary angiography, 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 image (a 'coronary angiogram') 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 angiography

Have you got questions? Speak with a health professional. Call 1300 36 2787

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Before your coronary angioplasty

1. You might be asked not to eat or drink for four to six hours before having coronary angioplasty.

The day of your coronary angioplasty

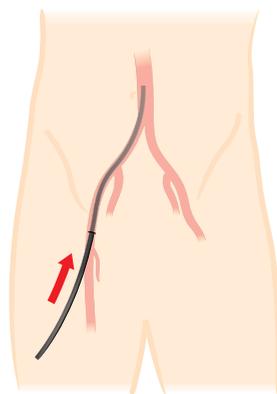
1. Your cardiologist will tell you what coronary angioplasty and stents are, and what their benefits and risks are. He or she will answer any questions that you or your family might have.
2. If you agree to have the procedure after talking with your cardiologist, you will need to sign a form that says this.
3. You will be shaved in the area of your body where the catheter will be inserted. Catheters are usually put into your groin, but sometimes can be put into your arm or wrist. You will also be asked to remove any jewellery that you are wearing.
4. You will be taken to the cardiac catheterisation laboratory (cath lab) and asked to lie on an examination table. Your heart beat and blood pressure will be monitored.
5. A small needle might be inserted into a vein in the back of one of your hands so that you can be given medicines during the procedure.
6. Your doctor might give you a sedative to help you to relax.
7. Your doctor will inject a local anaesthetic into the area of your body where the catheter will be inserted. This will cause you some pain, but it goes away quickly.

What will happen when I have coronary angioplasty?

Coronary angiography and coronary angioplasty are similar procedures and may be performed at the same time.

During coronary angioplasty

1. A thin tube called a 'sheath' is put into an artery in your groin, arm or wrist. Through the sheath, a 'guiding catheter' is inserted. This catheter is moved up into one of your coronary arteries.
2. A dye that is visible on X-rays is injected through the guiding catheter. The dye helps your cardiologist to see your coronary arteries and the narrow area(s).
3. Another catheter with a tiny balloon at its tip is inserted into the same artery in your groin, arm or wrist. It is moved up into the narrow section of your coronary artery.
4. The balloon is inflated and deflated several times to make your coronary artery wider. Often a stent (an expandable metal tube) is put into this section of your artery to make sure that it stays wide (see page 7 for more information about stents). Your cardiologist will have talked to you about stents before your coronary angioplasty started.
5. When your cardiologist thinks that your artery has been made wide enough, more X-rays are taken to check the blood flow through your coronary artery.
6. The catheters are removed, but the sheath is left in your groin, arm or wrist for a few hours. It is removed later when you are in the ward.
7. If the catheters were put into your groin, your cardiologist might use a special type of 'closure device' to seal the blood vessel where the catheter went in.



Catheter insertion in angiography and angioplasty

Still have
questions? Call
1300 36 27 87



Will it hurt?

Moving catheters through your arteries won't hurt. However, you may feel chest pain when the balloon is inflated, because it temporarily blocks the flow of blood through your coronary artery.

What are stents?

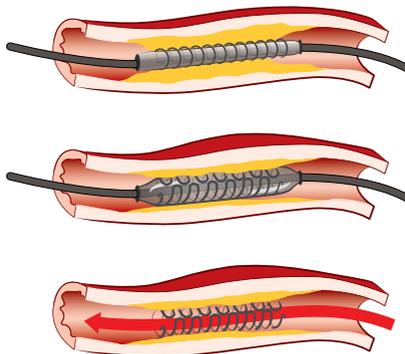
Stents are expandable metal tubes that come in various types, such as coils or wire mesh.

Stents are usually put into the section of your coronary artery that was made wider by the angioplasty procedure. They are expanded and left there to keep this artery wide. Over time, the lining of your artery grows over the stent, so that the metal support becomes part of the artery wall.

Blood clots can develop on the surface of stents soon after they are inserted. If you have a stent, your doctor will prescribe anti-clotting medicine for you (see page 9 for more information about medicines).

There are two types of stents: bare metal stents (BMS) and drug-eluting stents (DES). DES are more commonly used than BMS. Unlike BMS, they are coated with a special medicine that is slowly released into your artery wall. This medicine helps to stop tissue growing too much around the stent in your coronary artery. If the tissue grows too much it can make your artery narrow again. Your doctor will tell you which stent is most suitable for you.

Stent implantation



What are the risks?

As with most medical procedures, there are some risks of having coronary angioplasty. However, serious problems are rare.

Most people have no trouble during or after the procedure, and the potential benefits usually far outweigh the risks.

Possible risks include bruising or bleeding from the site where the catheter was put into your groin, arm or wrist. Other rare complications include heart attack, stroke and kidney damage.

There is a small risk that the coronary artery that was treated might close completely during or soon after coronary angioplasty. If your artery can't be kept open using balloons and stents, you might need to have urgent bypass surgery. Keep in mind, these problems are **very** rare (less than 1 in 1000).*

If you have any questions or concerns, talk to your doctor.

*Yang EH, Gumina RJ, Lennon RJ, Holmes DR, Rihal CS, Singh M. Emergency coronary artery bypass surgery for percutaneous coronary interventions. *Journal of the American College of Cardiology*. 2005; 46(11): 2004–9.

To speak
with a health
professional call
1300 36 27 87



What will happen after I have coronary angioplasty?

After coronary angioplasty, you will be taken back to an observation ward so that your heart rate, blood pressure and circulation in your leg can be checked frequently. You will be asked to stay in bed, lying flat on your back, for a few hours. You can eat and drink as soon as you feel like it.

You might feel pain in your back or leg. If you do, ask your doctor for pain relief.

You will be discharged when you are feeling well and have no angina – usually the day after the procedure.

Most people can start doing normal moderate-intensity activities, such as brisk walking, again as soon as they go home and can return to work within a week. You should avoid straining or lifting anything heavy for about a week.

A note about cardiac rehabilitation

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

Some hospitals, community health centres and divisions of general practice run outpatient cardiac rehabilitation programs. These programs continue the gradual increase in physical activity that you began in hospital and provide you and your family with education, information and support. You should attend a cardiac rehabilitation program as soon as possible after hospital discharge.

The right rehabilitation program will help most people to reduce their risk of further heart problems.

To recover as well as you can, you should take any medicines as prescribed by your doctor and keep appointments with your cardiologist. Your doctor might ask you to take one or more 'exercise' or 'stress' tests after your coronary angioplasty so they can check how well it has worked.

We recommended that you also attend a cardiac rehabilitation program (see *A note about cardiac rehabilitation* in box on left).

Will I need to take medicine?

To get the most benefit from your coronary angioplasty and stent implantation, you should take all medicines as prescribed by your doctor and follow their advice.

Do **not** stop taking your medicines unless your doctor tells you that you can. If you stop taking your medicine, a clot may suddenly form within the area of your artery with the stent and can lead to more heart problems.

Your doctor might prescribe:

- a small dose of aspirin each day indefinitely (unless you are allergic to or unable to tolerate it)
- clopidogrel for up to 12 months (and sometimes longer or indefinitely) after coronary angioplasty
- a medicine to lower your cholesterol and reduce your risk of further problems
- a spray medicine or tablet to put under your tongue if you get angina
- other medicines, depending on your individual circumstances.

Will angioplasty stop my angina?

Many people will not have angina again after successful coronary angioplasty.

However, some people's coronary artery might narrow again in the section where their angioplasty was done, often within three to six months. Other people might develop narrowing in a different section of a coronary artery. Either situation can lead to a return of the original symptoms, including angina. Usually this can be treated successfully with another coronary angioplasty and stent procedure.

Before you leave hospital after coronary angioplasty, make sure that you ask your doctor for your angina action plan.

Tell your doctor about any changes in the frequency or severity of your angina as soon as possible.

Learn more

If you'd like to learn more about coronary angioplasty, stents, coronary angiography 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.

What to do if you have angina

1 As soon as you get an episode of angina → **Immediately stop and rest.**

2 If rest alone does not bring rapid or effective relief → **Take a dose of your angina medicine.**

Make sure that you are sitting or lying down before using your tablet or spray, because they can cause dizziness. It is best to find the smallest dose that usually works for you (e.g. a full tablet, a half or even a quarter).

Tablets: place the tablet under your tongue – do not swallow. After your angina has been relieved, you may spit out what is left of the tablet.

Spray: one spray under the tongue will relieve angina quickly in most people.

3 If the angina is not relieved within five minutes → **Take another dose of your angina medicine.**

4 If the angina

- is not completely relieved by rest and medicine within 10 minutes of onset or
- is severe or
- gets worse quickly

Call Triple Zero (000)* and ask for an ambulance. Don't hang up. Wait for advice from the 000 operator.

If it is a heart attack, getting to hospital quickly can reduce the damage to your heart and increase your chance of survival. Don't ignore the warning signs! Get help fast. Every minute counts. If it turns out that you did not have a heart attack, it is better to have made sure.

*If calling 000 does not work on your mobile phone, try 112.



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

Key points to remember about coronary angioplasty

Coronary angioplasty is not a cure for coronary heart disease. It only treats the particular area of your arteries that have become very narrow due to heart disease.

Do **not** stop taking your medicines unless your doctor tells you that you can.

The best ways to lower your risk of more heart problems are to:

- take your medicines as prescribed
- be smoke-free
- enjoy healthy eating
- be physically active
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