Cardiac Procedures and Surgeries

If you've had a heart attack, you may have already had certain procedures to help you survive your heart attack and diagnose your condition. For example, many heart attack patients have undergone thrombolysis, a procedure that involves injecting a clot-dissolving agent to restore blood flow in a coronary artery. This procedure is administered within a few (usually three) hours of a heart attack. If this treatment isn't done immediately after a heart attack, many patients will need to undergo coronary angioplasty or coronary artery bypass graft surgery (CABG) later to improve blood supply to the heart muscle. View an illustration of coronary arteries(link opens in new window).

See Diagnostic Tests and Procedures At-A-Glance to better understand the tests you may have to undergo to find out if you had a heart attack, how much damage was done and what degree of coronary artery disease (CAD) you have.

Angioplasty

Also known as Percutaneous Coronary Interventions [PCI], Balloon Angioplasty and Coronary Artery Balloon Dilation. View an animation of angioplasty.

What the Procedure Does

Special tubing with an attached deflated balloon is threaded up to the coronary arteries. The balloon is inflated to widen blocked areas where blood flow to the heart muscle has been reduced or cut-off. Often combined with implantation of a stent (see below) to help prop the artery open and decrease the chance of another blockage. Considered less invasive because the body is not cut open. Lasts from 30 minutes to several hours. May require an overnight hospital stay.

Reason for the Procedure

- Greatly increases blood flow through the blocked artery.
- Decreases chest pain (angina).
- Increases ability for physical activity that has been limited by angina or ischemia.
- Can also be used to open neck and brain arteries to help prevent stroke.

Medications That Your Doctor May Prescribe Post-Procedure

Learn more about cardiac medications, including dual antiplatelet therapy, that you may need to take after your procedure to prevent complications and to put you on the path for the best recovery.

Download our patient sheet: What is Coronary Angioplasty?

Coronary angioplasty and stents

Coronary angioplasty is a treatment that helps improve the blood supply to your heart. During the procedure, a special kind of balloon is gently inflated inside the coronary artery. Many people also have a stainless steel mesh called a stent positioned within the artery which allows blood to flow normally again.

Your coronary arteries play a vital role in keeping your heart healthy. But in some people, the coronary arteries can become narrowed or blocked because fatty deposits, called **atheroma**, have built up within the artery walls.

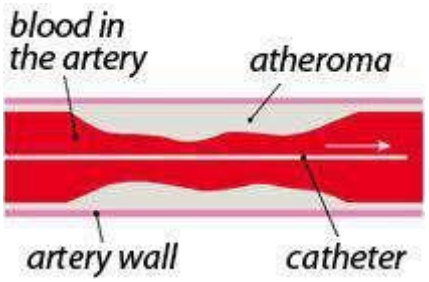
Coronary angioplasty is used:

- To widen narrowed coronary arteries to allow blood to flow through them again.
- To relieve angina symptoms.
- As an emergency treatment for people during a heart attack.

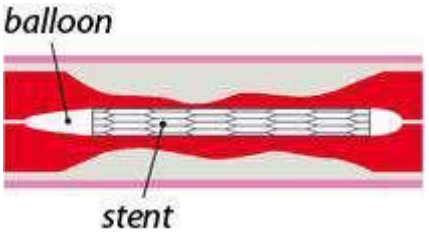
What happens during an angioplasty?

You'll have an angiogram before your angioplasty to look inside your coronary arteries to check how much they're blocked and where these blockages are. An angiogram often happens as part of the same procedure.

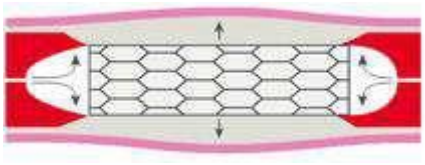
An angioplasty normally takes between 30 minutes and two hours, although it can take longer in some cases.



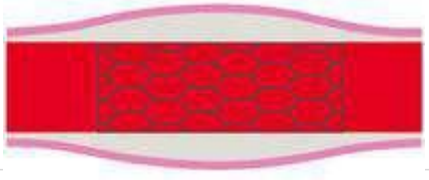
At the start of the procedure you'll be given a local anaesthetic to numb the area in the groin or wrist where a catheter (a fine, flexible, hollow tube) is then passed into an artery. The catheter is then guided to your heart and into a coronary artery until its tip reaches a narrow or blocked section. At the tip of the catheter is a small inflatable **balloon** and a small tube of stainless-steel mesh, called a **stent**.



A special dye (contrast) is injected into the catheter so that your coronary arteries can be seen on an x-ray screen. This helps show where the narrow areas or blockages in your arteries are, and how severe they are. It's normal to feel a hot flushing sensation when the dye is injected.



The balloon on the end of the catheter is then gently inflated so that it squashes the fatty deposits (the atheroma) against the artery wall, widening the artery.



As the balloon is inflated, the stent in place on the balloon expands so that it acts as a scaffold and holds open the artery. The balloon is deflated and removed, leaving the stent in place.

Some people may feel palpitations, or some angina symptoms during or after the procedure. If you feel unwell, or have pain at any time, tell the team.

When the procedure is over, the catheter is removed. Sometimes there might be a small amount of bleeding when it is taken out. A nurse or doctor will press on the area for a short while or they may put in a plug called an angioseal to stop any bleeding. After the procedure, you'll need to stay in bed for a while.

Leaving hospital after an angioplasty

Most people can go home the same day or the next day, but if you've had an emergency angioplasty it's likely you'll need to stay in hospital for longer.

When you get home, check the area where the catheter was inserted. Expect to have some bruising and tenderness, but if you get any redness or swelling, or if the bruising worsens, contact your doctor.

Before you leave hospital, someone will have a chat with you about your recovery and what you can and can't do. It's normal to feel tired afterwards but most people find that they're back to normal after a few days. However if you've also had a heart attack, it will take longer to recover.

- It's best to avoid doing any demanding activities, such as heavy lifting, for a week or so.
- You shouldn't drive for at least a week after having angioplasty – longer if you also had a heart attack.
- If you've had a planned angioplasty with no complications you may be able to return to work within a few days, depending on the type of work you do.
- If you've had an emergency angioplasty or a heart attack you may need to take a few weeks off.

You should also be invited to go on a cardiac rehabilitation programme, a course of exercise and information sessions that help you to recover as quickly as possible.

If you have a stent, you'll need to take certain anti-platelet drugs, including aspirin (unless you're allergic to it) or other drugs such as clopidogrel, ticagrelor or prasugrel to help reduce the risk of blood clots forming in and around the stent.

Stents are not affected by security systems at airports or MRI scans.

What should I do if I get chest pain after I get home?

If you get chest pain, stop and rest and take your GTN if you've been prescribed. The pain should go away within five minutes. If it doesn't, take your GTN again. If the pain hasn't gone away within five minutes of taking the second dose of GTN, call 999 immediately. You could be having a heart attack.

- Learn more about heart attack symptoms.

How successful is coronary angioplasty?

In most cases coronary angioplasty improves the blood flow through the treated artery. Many people find that their symptoms get better and they're able to do more.

Sometimes the artery can become narrowed again, causing angina symptoms to return. But

advances in stent technology mean that the risk of this happening is getting lower. Many people are now symptom-free for a long time.

A small number of people have complications. The risk varies depending on your overall health and your individual heart condition. Have a chat with your doctor about the benefits and possible risks of having an angioplasty and any concerns you may have.

Bypass Surgery

(Also known as CABG, pronounced "cabbage," Coronary Artery Bypass Graft done via Open-Heart Surgery) View an illustration of coronary bypass(link opens in new window).

What the Procedure Does

Treats blocked heart arteries by taking arteries or veins from other parts of your body — called grafts — and using them to reroute the blood around the clogged artery to supply blood flow to your heart muscle. View an animation of blood flow (link opens in new window). A patient may undergo one, two, three or more bypass grafts, depending on how many coronary arteries are narrowed. Requires several days in the hospital.

Download our patient sheet: What is Coronary Bypass Surgery?

Reason for the Procedure

- One of the most common and effective procedures to manage blockage of blood to the heart muscle.
- Improves the supply of blood and oxygen to the heart.
- Relieves chest pain (angina).
- Reduces risk of heart attack.
- Improves ability for physical activity that has been limited by angina or ischemia.

Medications That Your Doctor May Prescribe Post-Procedure

Learn more about cardiac medications, including dual antiplatelet therapy, that you may need to take after your procedure to prevent complications and to put you on the path for the best recovery.

Stent Placement

What the Procedure Does

A stent is a wire mesh tube used to prop open an artery during angioplasty. The stent stays in the artery permanently. View an animation of a stent (link opens in new window).

Coronary narrowings can form again within stents and are referred to as “restenosis.”

Reason for the Procedure

- Holds the artery open.
- Improves blood flow to the heart muscle.
- Relieves chest pain (angina).

Download our patient sheet: What is a Stent?