MonashHeart, Southern Health is committed to providing outstanding cardiac services for cardiac patients of all ages

- Every 10 minutes, an Australian dies from cardiovascular disease making it the biggest killer of all Australians
- MonashHeart treats more acute heart attack patients than anywhere else in Victoria
- Each year MonashHeart treats over 7500 patients with acute heart problems, the most in Victoria
- MonashHeart operates one of the busiest cardiac CT scanners in the world
- MonashHeart is the only cardiac service in Victoria, South Australia and Tasmania to treat heart patients of all ages; from pre birth to our senior citizens
- MonashHeart is an internationally and nationally recognised leader in cardiovascular research
- Nearly one in 100 children in Australia are born with a heart defect. Congenital heart disease accounts for 50% of childhood lethal malformations

MONASHHEART
Southern Health

Fundraising Manager
Southern Health
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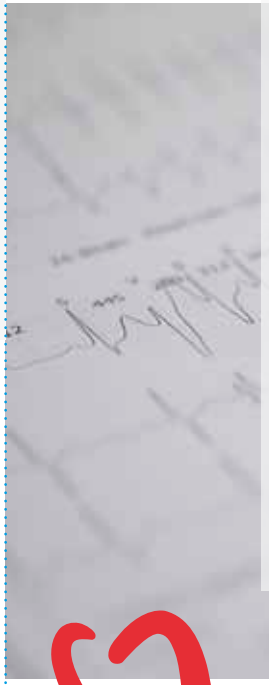
Clayton South 3169



At the **Heart** of Care and Innovation

Some useful websites

MonashHeart
www.monashheart.org.au

Patient Information
www.heartfoundation.com.au

Please use this space to write down any questions you may have:

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Coronary Angioplasty

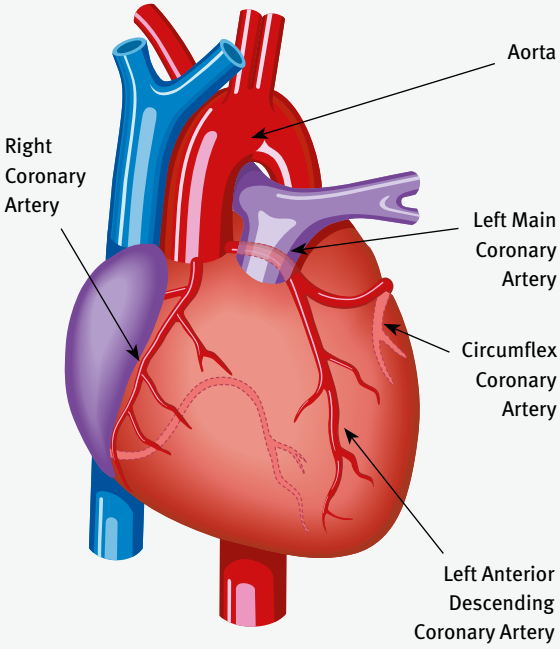
A Guide For Patients

Heart Anatomy

The heart is the organ which pumps blood and oxygen to all body tissues and parts via the aorta. The heart itself needs nutrient rich oxygenated blood to function, and so the heart muscle or myocardium is supplied by an intricate network of coronary arteries.

The coronary arteries branch off the aorta and usually there is;

- One artery on the right side, called the right coronary artery, which supplies the back of the heart,
- One larger artery on the left, called the left main coronary artery, which branches into the;
  - left anterior descending artery, which supplies the front of the heart, and the,
  - left circumflex artery, which supplies the left side and back of the heart



Coronary artery disease

Narrowings, called “plaque” or “blockages”, in the coronary arteries are the cause of coronary heart disease in Australians. These blockages ultimately cause acute coronary syndromes, which include heart attack (myocardial infarction), angina, heart failure and sudden death.

Why do I need a coronary angioplasty?

Coronary angioplasty is a treatment for coronary artery disease. Different tests (generally including a coronary angiogram or cardiac CT) have revealed that you have narrowed or blocked arteries and your cardiologist has determined that, in your situation, an angioplasty is appropriate to improve associated symptoms and/or reduce the risk of future heart problems.

What are the risks of having a coronary angioplasty?

In recommending this procedure your cardiologist has balanced the benefits and risks of the procedure against the benefits and risks of not proceeding.

Your cardiologist believes there is a net benefit of you having an angioplasty.

The procedure is generally very safe. However, complications occasionally occur and can be classified into major or minor complications.

Major complications are very rare but include:

- heart attack: in rare circumstances, working inside the arteries of the heart is complicated by injury to the vessel wall (dissection or perforation) or interruption in blood circulation. This can result in a procedure-related heart attack ("myocardial infarction"), but this is rarely associated with significant damage of the heart muscle. The need for an emergency open heart surgery to treat such a complication is very rare.

- death: the risk of death from procedures performed in non-emergency settings is very low. Interventions that carry unusual risks are generally discussed thoroughly before they are undertaken.

- severe bleeding: as administration of strong blood thinners is necessary during a coronary angioplasty, bleeding (in head/brain, eyes, abdomen or at the procedure puncture site) requiring blood transfusion or surgery is a serious but uncommon complication of angioplasty.

- stroke: clots or debris to the brain which can cause temporary or permanent disability are very rarely associated with coronary angioplasty.

Minor complications are also rare:

- minor bruising or swelling at puncture site (5-10%)
- vessel wall injury at puncture site such as dissection, pseudo-aneurysm or fistula formation (rare)
- allergic reaction or kidney damage related to the contrast dye (uncommon)

Overall, it can be stated that most complications can be remedied quickly and are rarely life threatening.

Complication	Complication Rate
Death	0.1%
Heart attack (myocardial infarction)	0.17%
Stroke	0.07%
Emergency open heart surgery	0.1%
Perforation of the coronary artery	0.1%
Life threatening heart arrhythmia requiring resuscitation measures	0.1%
Injury to the artery at the puncture site	2%
Kidney failure due to contrast dye	3-5%
Allergic reaction to the contrast dye	1%

Table one: Summary of coronary angioplasty complication rates

Preparation for your coronary angioplasty

On the day of your procedure, you will be visited by a member of the interventional cardiology team (interventional cardiologist, fellow or registrar). You and your family will be provided support and advice about what to expect before, during and after your angioplasty.

The procedure and possible complications will be explained to you. You will then be asked to sign a consent form. If you are unsure of anything, ask the doctor before signing the form. The procedure is undertaken using x-rays, therefore if there is any risk of you being pregnant you must inform a member of the MonashHeart team.

Some preparation will be needed before you have your coronary angioplasty. This will be explained by the nurses caring for you.

Before your coronary angioplasty

- You must have nothing to eat or drink for at least six hours before your procedure
- You will need to remove your clothing and put on a hospital gown
- You will be transferred to the cardiac catheterisation laboratory on a trolley or bed

Specific advice for diabetics

If you take diabetic medication:

- please withhold all diabetic medication the morning of your angioplasty
- bring your tablets and/or insulin with you on the day of your angioplasty
- please withhold Metformin for 48 hours after your angioplasty
- you will be reviewed by a MonashHeart doctor on your admission who will then decide on the timing and dosage of your medications

If you need to clarify these instructions, please do not hesitate to contact MonashHeart.

In the cardiac catheterisation laboratory

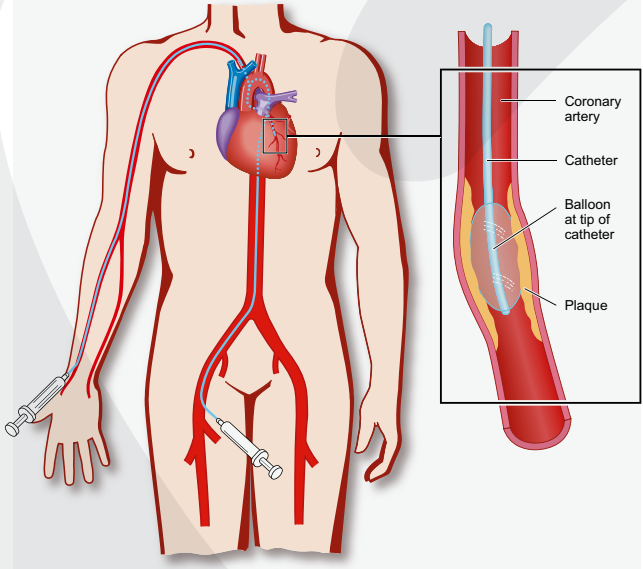
The cardiac catheterisation laboratory, commonly called the cath lab, is a specialised x-ray room where your coronary angioplasty will be performed. MonashHeart's specially trained health care professionals, including an interventional cardiologist, a cardiology fellow, cardiac technologists and specialised nurses will be involved in the procedure. As MonashHeart is part of a teaching hospital, it is also common for medical and nursing students or other trainees to observe procedures. If you are uncomfortable with this please let your cardiologist know beforehand.

Generally, a sedative agent is given orally or via an intra-venous line to help you relax and feel comfortable. However, you will be awake throughout the procedure.

Your skin will be cleaned with an antiseptic solution and sterile drapes placed around the area of your body where the team will be working (groin or wrist). There will be an x-ray camera above you and you will be attached to a heart monitor.

Local anaesthetic will be used to numb your skin around the area where the catheters will be inserted. A small cut (less than 2mm) is made in the skin and a short tubing (sheath) will be guided through the skin to an underlying artery.

The procedure usually takes about 45-60 minutes. When the procedure has been completed, the wire, catheter and sheath will be removed. To avoid bleeding from the puncture site, either firm pressure will be applied on your skin or, alternatively, a special vascular plug will be inserted.



A catheter (long thin tube) is passed through the sheath and via the arteries to reach the aorta, the main blood vessel of your body. Most people will not feel any pain while the catheter travels along the vessels. In cases where wrist access is chosen, the artery in the arm can occasionally be too small, tortuous or reactive to the catheters (spasm) and result in the need to convert to a groin approach. If you feel any pain, please inform the MonashHeart team and we can give more local anaesthetic, sedation or pain relief.

With the catheter positioned at the origin of the affected artery of your heart, radiographic dye will be injected into it to identify any narrowings/blockage. A small wire will then be positioned beyond the narrowed area inside the artery and used as a rail to guide appropriate balloons and stents.

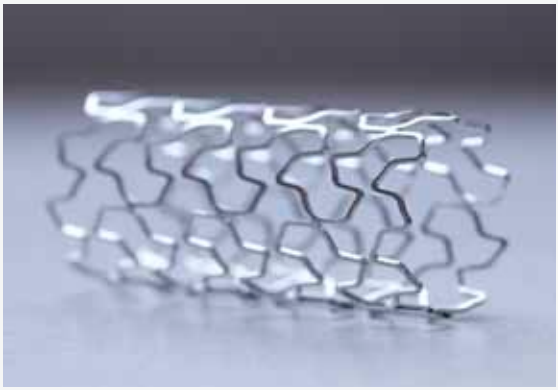
A balloon will be inflated first to open the artery and, in the vast majority of cases, a stent will be deployed at the same site to keep the artery widely open. As blood flow to the heart muscle is temporarily interrupted during balloon inflations, it can create chest discomfort or chest pain of short duration. Again, please do not hesitate to inform the MonashHeart team in this case.

On return to the immediate care centre/ward

You will be instructed to rest in bed for up to four hours depending on the puncture site. You will have frequent observations of your pulse, blood pressure and checks made of your puncture site by the nursing staff. An electrocardiogram will be performed and a blood test six hours post coronary angioplasty.

Please let the nurses know if you need the toilet or feel any unusual warmth, dampness or pain at the puncture site as this may indicate bleeding. Also, any chest pain should be reported to the team.

In most circumstances, you will stay in the hospital overnight and be allowed home the next morning. However, if your coronary angioplasty is straight forward, then you may be discharged that same day. A review appointment will be made with your cardiologist usually within six to eight weeks and this will be provided to you on an appointment card prior to discharge. You will also be informed of the type of stent implanted in your artery and prescribed the appropriate medication accordingly.



Are there any specific issues related to the type of stent used?

Two types of stent are currently available to treat coronary heart disease:

- the non-coated “bare-metal stents” (BMS) and
- the drug-coated “drug-eluting stents” (DES).

Both types of stent eventually become part of the artery wall as tissue grows over the stent in a normal healing process. Occasionally, excessive growth of tissue inside the stent results in re-narrowing, a condition called “instent restenosis”.

This will require further treatment (repeat angioplasty or bypass surgery) in about 15-20% of patients receiving a BMS. Drug-eluting stents have been developed specifically to overcome this problem and have reduced the need for re-intervention to about 5% of patients. However, the drug coating can slow down the normal healing process of the artery, which may carry a prolonged risk of clot suddenly forming inside the stent, a dangerous condition called “stent thrombosis”.

Patients receiving a DES therefore require longer treatment (at least 12 months) with a combination of blood thinners (antiplatelet medicines, generally Aspirin and Clopidogrel or Prasugrel) as compared to patients treated with a BMS (at least one month).

If you have any further questions or concerns about your upcoming coronary angioplasty, please talk to your local doctor. On the day of the angioplasty the MonashHeart team will be more than happy to discuss all aspects of the procedure with you.

Upon deciding on the type of stent to implant, your interventional cardiologist will therefore consider multiple factors specific to your situation, including the risk of restenosis, the risk of bleeding from the combination of medication and the potential need to stop these medicines in the near future. It is of outmost importance to let your interventional cardiologist know if you have other medical or surgical procedures planned in the upcoming year, as this will influence the decision. In any case, you should never stop any heart medication without the advice of your cardiologist.

That night and following day:

- Drink plenty of fluids over the next eight hours as this helps flush the contrast from your body
- There must be someone staying with you at home the night of your procedure
- Rest the night of the procedure, with little walking (if groin procedure), planning to rest at home the following day - please ask for a medical certificate so you can take time off work
- If a wrist puncture, use your arm sparingly for the next one to two days, not flexing the affected wrist for a minimum of 24 hours
- The plastic dressing can be removed from the puncture site (wrist or groin) the day after the procedure following your shower
- Do not lift heavy weights for at least one week following the procedure
- Please see your local doctor one week after your procedure to have the puncture site checked

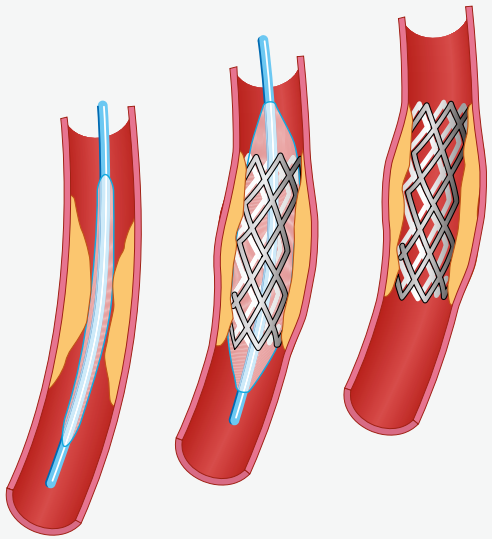
Introduction

Your doctor has recommended you proceed to a coronary angioplasty. This booklet has been written to help you understand important aspects of a coronary angioplasty and what will happen when you have the procedure.

If there is anything you do not understand please ask a member of the MonashHeart team.

What is a coronary angioplasty?

A coronary angioplasty, also known as percutaneous coronary intervention (PCI), is an intervention performed to open narrowed or blocked arteries that supply the heart muscle (coronary arteries). In a procedure similar to a coronary angiogram, this is performed by inflating a special balloon and implanting an expandable metal tube (stent) at the site of the narrowing or blockage to improve blood flow to the heart muscle.



Important

If the puncture site (wrist or groin) suddenly bleeds or becomes very painful with a large lump under the dressing, lie down immediately and press firmly on the puncture site, calling for help.

The person helping you should call an ambulance, as you may be experiencing bleeding from a major artery. They are then to assist you by pushing firmly on the puncture site until the ambulance arrives.

You must attend the closest emergency department to your home if this occurs.

If you have any questions or concerns, please call the immediate care centre on 03 9594 2177 (7:30am to 6:00pm), or the cardiac care unit on 03 9594 4570 (24 hours).

I support MonashHeart, Southern Health in providing leading care to cardiac patients of all ages.

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