

# Coronary angiogram and coronary stenting

Information for patients



ST VINCENT'S  
HOSPITAL  
MELBOURNE

A FACILITY OF ST VINCENT'S HEALTH AUSTRALIA

# Welcome to St Vincent's

Thank you for choosing St Vincent's Cardiology and Cardiac Investigations Unit. This booklet has been developed to help you understand the procedures of coronary angiogram and percutaneous coronary intervention (PCI), also known as coronary stenting.

It is important for you and your family to read this booklet. If you have any questions please ask the team looking after you – we're here to help you.

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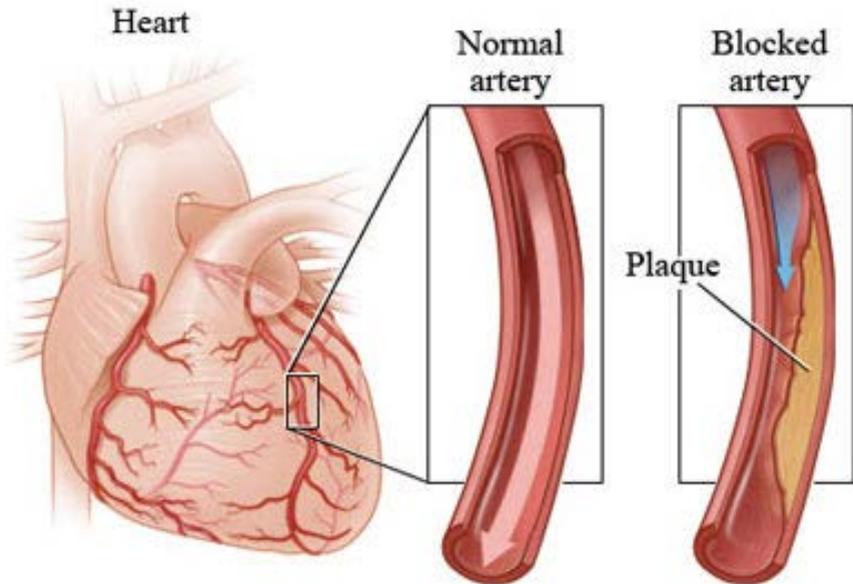
# About the heart

## Structure of the heart

The heart is a specialised muscle which acts as a pump. The heart's primary role is to transport blood, oxygen and nutrients to every cell of your body. The heart pumps constantly and needs a good blood supply to function. The coronary arteries are the heart's own blood supply. They sit on the surface of the heart muscle.

## The coronary arteries

Coronary arteries supply the heart muscle with blood and oxygen. Arteries are like small pipes. Over time they can become narrowed or blocked by fatty deposits. This is called coronary artery disease or atherosclerosis. If the arteries become too narrow, less blood will reach the heart. This deprives the heart of the oxygen it needs to work properly.



# Angina

Angina is a type of chest pain or discomfort.

Angina occurs when the heart muscle temporarily can't get enough blood and oxygen. It usually happens during increased physical activity or extreme emotion, and goes away after resting for a few minutes.

Angina is only a brief reduction in the heart's blood supply and the heart muscle is not damaged.

Many people who experience angina will not have a heart attack. However, they are at a greater risk of having one. This is because there is fatty plaque building up inside one or more of the coronary arteries. If this is not treated, it may become severe enough to cause a heart attack.

## Chest pain action plan

If you experience angina please follow the flow chart on the next page.

# 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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# Coronary angiogram

A coronary angiogram is a procedure which looks at the coronary arteries to see if there are any blockages and the extent of those blockages. It is performed in the cardiac catheterisation laboratory, commonly called the 'cath lab'.

During the coronary angiogram you will be lying flat on a bed. The skin of your wrist and/or groin will be cleaned with antiseptic solution. You will be covered with a sterile drape and asked to stay still.

A local anaesthetic will be used to numb the skin and a small cut (less than 2mm) made to allow for catheters (long thin tubes) to be passed through the blood vessels up to your heart.

Radiographic dye will then be injected into your coronary arteries while x-rays are being taken. The dye will highlight your arteries so we can see if they are blocked or narrowed. This procedure usually takes 20 minutes.



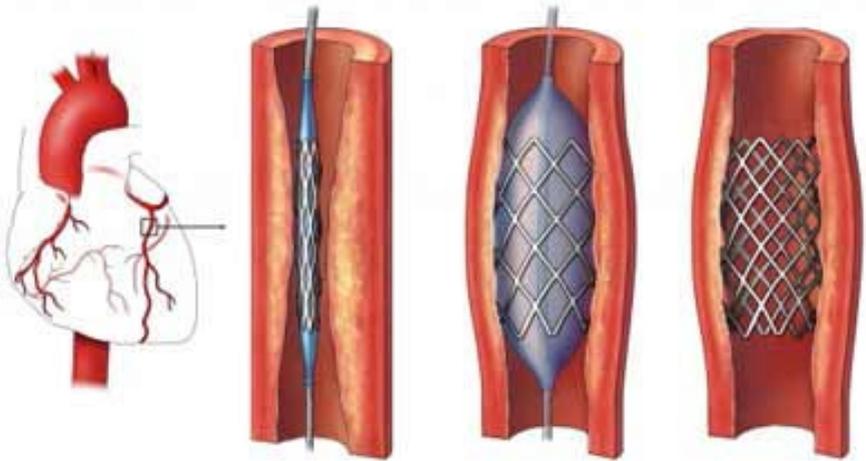
X-Ray of coronary arteries

# Coronary stenting

Coronary angioplasty and percutaneous coronary intervention is the full name for what we refer to as coronary stenting.

During your coronary angiogram, if the doctor sees a narrowing or blockage they believe can be fixed with a 'stent' (a thin metal scaffold) they will perform this procedure. Depending on the complexity and location of the narrowing, this will take at least another 20 minutes.

A small balloon is inflated inside one or more of the coronary arteries to open an area that has become narrowed. A stent is then inserted to provide the artery with extra support. Once the stent is inserted it will stay there for life. Over time, the lining of the artery will grow over the stent.



Placement of stent

# Radial and femoral access

There are two main ways to access the coronary arteries and perform the procedure:

- the femoral artery in the groin
- the radial artery in the wrist.

## *Radial*

The large artery in your wrist is used to access your heart arteries. After the procedure, a band will be placed around your wrist to stop the little cut in your wrist from bleeding. You will need to keep your wrist and arm still. Over time, the air inside the band will be deflated and the band removed.

You are able to sit up, eat and drink and rest in bed while the band is being deflated.



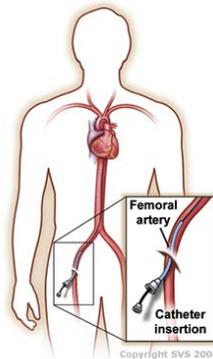
Above: Radial access  
Right: Femoral access

## *Femoral*

The large artery in your groin is used if you have had prior coronary artery bypass graft surgery (CABGS) or if the wrist artery is not suitable.

Once the procedure is finished, the sheath (thin plastic tubing) will remain in your groin and removed when the doctor or nurses deem it safe to do so. This is usually once the blood thinning medications used during the procedure have worn off.

When the sheath is removed, the doctor will apply firm pressure to the area for around 20 minutes. It is important that you lie flat and very still. You will then have to lie flat for a further 2 to 4 hours. However, you can eat and drink once the doctor has finished applying pressure to the area.



# What does this all mean for me?

You have been booked in to have an elective coronary angiogram.

Before you come to hospital, we will send you a letter with important instructions about when and where to go on the day of your procedure.

**It is essential you read this letter very thoroughly.**

The following information outlines what to expect before, during, and after the coronary angiogram.

## The night before your procedure

Fast from midnight the night before your procedure.

This means you **MUST NOT** eat breakfast the morning of the procedure. You can drink water with your morning tablets.

## The morning of your procedure (at home)

- ✓ Take all your usual morning medication. This is very important. It ensures you have an optimal blood pressure and heart rate during the procedure.
- ✗ If you are a diabetic, **DO NOT** take your diabetes medication or insulin the morning of your procedure. All diabetics should contact (03) 9231 4423 for instructions on their diabetic medication.
- ✗ If you take diuretics (fluid tablets that increase the amount of urine you produce), **DO NOT** take these the morning of your procedure.

# The day of your procedure

## Presenting to the Day Procedures Unit

Go to the Day Procedures Unit on the first floor Main Hospital (Building A) at the time listed on the letter you received in the mail.

Bring any letters, forms (or other paperwork) and blood test results from the person who booked you in to have the procedure – this is usually your GP or cardiologist.

Bring in all the medication you take, including insulin, in its original packaging. Avoid bringing loose medication or medication that cannot be easily recognised.

## Before your procedure

You will speak to a doctor who will ask about your medical history. They will also explain the procedure and ask you to sign a consent form. They will talk to you about the risks and benefits of the procedure and answer any questions you have about it.

An intravenous drip will be inserted into your arm and some routine blood tests taken. This will allow us to give you any fluids and medication you need.

## Please note:

You will wait in the Day Procedures Unit until you are called for your procedure. Please note that we cannot give you an exact time the operation will be performed.

Very rarely, for reasons beyond our control, your procedure may be delayed. This usually happens because of a medical emergency that must take priority.

## During your procedure

You will be awake during the coronary angiogram. This allows you to communicate with the cardiologist and for the doctors to update you throughout the procedure.

We can give you medication to help you feel relaxed and sleepy if you need it.

The doctors will be able to give you the results of the coronary angiogram as soon as they have finished. There are 4 likely scenarios described in the table on the next page.

# Your results

Findings	Explanation
1. Normal	<ul style="list-style-type: none"><li>- This means you have no coronary artery disease and the cause of your symptoms is not related to blockages in your coronary arteries.</li><li>- You may need more tests to identify the cause of your symptoms. This will be discussed with you.</li></ul>
2. Percutaneous coronary intervention	<ul style="list-style-type: none"><li>- This means you received a stent for a narrowed artery. See the previous pages for more information about coronary stents.</li><li>- You will also be put on medications to help your heart muscle, lower your blood pressure, reduce the chances of the stent blocking off, and lower your cholesterol.</li><li>- It is also very important to address your risk factors (see page 15 for more information).</li></ul>
3. Medical management	<ul style="list-style-type: none"><li>- This means that the disease in your artery/arteries may not improve with stenting, so the decision has been made to treat you with medication (tablets).</li><li>- The doctor may change your medications to support your heart muscle, lower your blood pressure, treat your angina, and lower your cholesterol.</li><li>- It is also very important to address your risk factors (see page 15 for more information).</li></ul>
4. Multi-vessel disease	<ul style="list-style-type: none"><li>- This means you have several blockages in several arteries which will not be improved with stenting. The doctor will talk to you about the best treatment for you. This may involve an operation called coronary artery bypass graft surgery (CABGS).</li></ul>

# After your procedure

## After your procedure

After your coronary angiogram you will be transferred to ward 4 West. The nurses will monitor your heart rate and blood pressure closely and update you further on the results of the angiogram. You will stay the night in the ward.

## The day after your procedure

You will be discharged before 10am the day after your coronary angiogram.

You must have pre-arranged transport with a friend or relative, or you can take public transport home.

You will be seen by a pharmacist before you leave. They will supply you with medicine should you require it. Some of your medications may have changed.

The doctors will discuss a follow-up appointment with you before you are discharged. You may be given an appointment before you leave, the details posted to you, or you may be asked to book the appointment yourself.

# Discharge instructions

<p><b>Puncture site</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Wrist</li><li><input type="checkbox"/> Groin</li></ul>	<ul style="list-style-type: none"><li>- Remove the dressing the day after your procedure. No new dressing is required.</li><li>- Do not apply any creams, powders or lotions to the area.</li><li>- Check your puncture site every day for signs of infection (redness, heat, mucky discharge) and notify your GP if these occur.</li><li>- If you have pain at the puncture site, you can take Panadol for this (always follow instructions on the packaging).</li></ul>
<p><b>In case of bleeding or swelling at the puncture site</b></p>	<p>If you notice a lump or bleeding at the puncture site:</p> <ul style="list-style-type: none"><li>- Sit or lie down. Apply firm pressure to the puncture site that is bleeding, and maintain that pressure for 10 minutes <b>after the bleeding has stopped</b>. On the wrist place 3 fingers over your wrist. For the groin place a fist to your groin.</li><li>- Once the bleeding has stopped, avoid walking for 2 hours and sit with your feet up to allow a clot to form.</li><li>- <b>If bleeding does not stop, or the swelling increases, call an ambulance on 000.</b></li></ul>
<p><b>General Practitioner appointment</b></p>	<ul style="list-style-type: none"><li>- See your GP within 5 to 7 days after you leave hospital.</li><li>- All relevant information, including test results, medication changes, and a discharge summary, will be forwarded to your GP.</li><li>- Make sure your GP assesses your puncture site (wrist or groin), blood pressure and heart rate.</li><li>- If you feel dizzy, lightheaded or have any pain, make an appointment to have your blood pressure checked as soon as you can. This is especially important if you are taking new medication.</li></ul>

# Discharge instructions

Activity	<ul style="list-style-type: none"><li>- NO heavy lifting or straining for 1 week – this includes heavy housework like vacuuming, mowing the lawn, or carrying the groceries.</li></ul>
Returning to work	<ul style="list-style-type: none"><li>- The doctors will tell you the date you can return to work. It is usually 1 to 3 weeks after the procedure. If you need a medical certificate, please ask for one.</li></ul>
Driving	<ul style="list-style-type: none"><li>- You must not drive a vehicle for a minimum of 48 hours but it may be up to 2 weeks. Your doctor will tell you how long you must wait before you drive.</li><li>- If you drive using a commercial heavy vehicle licence, you will have further driving restrictions. Please ask your doctor about this.</li></ul>

# How can I prevent further heart disease?

Addressing your heart disease risk factors is very very important. Your nurse and doctors will speak to you about how to optimise your health and improve your risk factors.

Smoking	<ul style="list-style-type: none"><li>– Quit smoking. Quitting reduces the risk of further heart disease and the chance of developing cancers. It improves blood pressure and lung function, and will save you money.</li></ul>
High blood pressure	<ul style="list-style-type: none"><li>– Ensure you take your blood pressure tablet/s and have your blood pressure monitored by your GP.</li><li>– If you are overweight, losing weight will help lower your blood pressure. Being more active, quitting smoking, limiting your alcohol intake, and lowering your salt intake will also help.</li></ul>
High cholesterol	<ul style="list-style-type: none"><li>– Ensure you take your cholesterol tablet/s and have your cholesterol monitored by your GP every 6 months. Eat a diet low in saturated fat, sugar and salt, and high in whole grains, fruit and vegetables.</li></ul>
Diabetes	<ul style="list-style-type: none"><li>– Aim to have stable blood sugar levels and take your medication and insulin as prescribed.</li></ul>
Overweight	<ul style="list-style-type: none"><li>– Increase your physical activity and make healthier food choices. Eat a diet low in saturated fat, sugar and salt, and high in whole grains, fruit and vegetables.</li></ul>
Physical inactivity	<ul style="list-style-type: none"><li>– Aim to do at least 30 minutes of moderate-intensity physical activity on most days of the week.</li></ul>
Depression	<ul style="list-style-type: none"><li>– Depression and heart disease often occur together. Talk to your GP if think you have signs or symptoms of depression.</li><li>– Increasing your physical activity and seeking professional help may assist with low moods.</li></ul>

## Checklist

### Before your angiogram

#### Pack:

- Toiletries
- Clothes to wear home
- Medicare, VET affairs card
- A list of medication you take and any allergies you have
- All your medication (in the original packaging)

#### Organise:

- Someone to drive you home the day after your procedure.
- Call the hospital if you need to withhold any medication.

## Helpful phone numbers

### Quitline

13 78 48

[www.quit.org.au](http://www.quit.org.au)

### National Heart Foundation

1300 365 787

[www.heartfoundation.org.au](http://www.heartfoundation.org.au)

### beyondblue

1300 224 636

[www.beyondblue.org.au](http://www.beyondblue.org.au)

### St Vincent's Hospital

(03) 9231 2211

[www.svhm.org.au](http://www.svhm.org.au)

### St Vincent's Aboriginal Hospital Liaison Officer Program

(03) 9231 3436

Search for 'Aboriginal Health'  
or 'AHLO' on [www.svhm.org.au](http://www.svhm.org.au)