

MonashHeart, Monash 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 close to 8000 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



Fundraising Manager
Monash Health
Locked Bag 29
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:



Coronary Angiogram



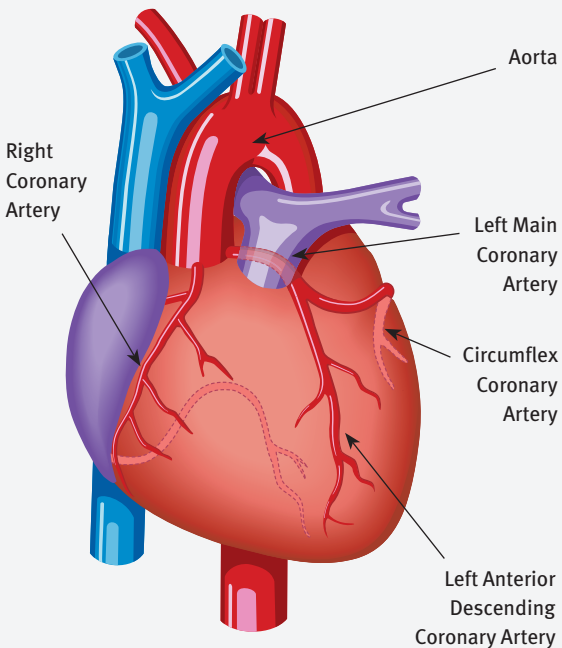
A Guide For Patients

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 angiogram?

A coronary angiogram is performed to determine if you have coronary artery disease.



Your doctor may have recommended that you have the procedure if:

- ♥ you have symptoms that could be explained by blocked or narrowed arteries (eg. chest pain or shortness of breath)
- ♥ another test has suggested you might have coronary artery disease (exercise or nuclear test, echocardiogram, cardiac CT)
- ♥ he/she wants to assess the severity of the disease to determine the most appropriate treatment for you (medication only vs. procedures such as angioplasty or bypass surgery)
- ♥ you need heart valve surgery

You may already have coronary artery disease and your doctor wants to:

- ♥ know if the disease has progressed
- ♥ assess the results of a previous coronary angioplasty or bypass surgery



What are the risks of having a coronary angiogram?

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 angiogram.



The procedure is generally very safe however, a few risks include:

- ♥ problems at the puncture site i.e.: the artery in the groin or wrist where the procedure is performed from
- ♥ minor bruising (less than 5%)
- ♥ major bruising or swelling (less than 1%)
- ♥ vessel wall injury such as dissection, pseudo-aneurysm or fistula formation (rare)
- ♥ bleeding into the abdominal cavity (rare)
- ♥ allergic reaction to the contrast (dye) material (uncommon)
- ♥ coronary artery injury from catheter manipulation which can result in a heart attack or the need for emergency bypass surgery (very rare)
- ♥ stroke (clots or debris to the brain) which can cause temporary or permanent disability (very rare)

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



Complication	Complication Rate
Death	0.11%
Heart attack (myocardial infarction)	0.05%
Stroke	0.07%
Perforation of the heart chamber	0.03%
Heart arrhythmias	0.38%
Injury to the blood vessel at the puncture site	0.43%
Blood pressure or heart rate complications	0.26%
Allergic reaction to the contrast dye	0.37%
Other complications	0.28%
Total of major complications	1.70%

Table one: Summary of coronary angiogram major complication rates





Preparation for your coronary angiogram

On the day of your procedure, you will be visited by a member of the MonashHeart 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 coronary angiogram.

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 angiogram. This will be explained by the nurses caring for you.

Before your coronary angiogram

- ♥ 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 angiogram
- ♥ bring your tablets and/or insulin with you on the day of your angiogram
- ♥ please withhold Metformin for 48 hours after your angiogram
- ♥ you will be reviewed by a MonashHeart doctor on your admission who will then decide on the timing and dosage of your diabetic 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 angiogram will be performed. MonashHeart's specially trained health care professionals, including an interventional cardiologist, a cardiology fellow or registrar, 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.

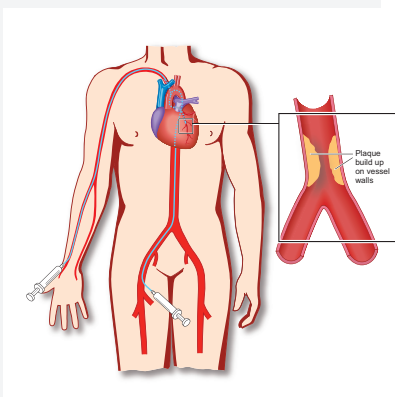
Generally, a sedative agent is given orally or via an intravenous line to help you relax and feel comfortable. Although you may be sedated, you will be conscious throughout the procedure.

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.



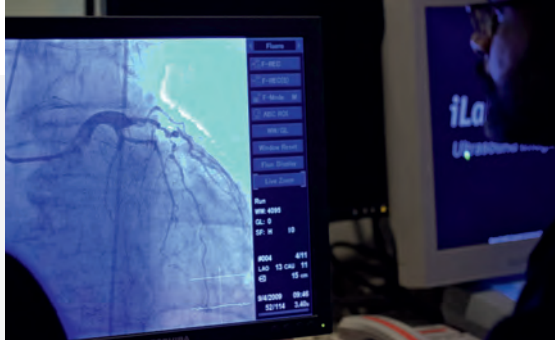
Local anaesthetic will be used to numb your skin around the area where the catheters will be inserted. A small cut (less than 2mm) is made in the skin and a short tubing (sheath) will be guided through the skin to an underlying artery.

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.





When the catheter is positioned at the origin of the coronary arteries on your heart, a small amount radiographic dye will be injected. X-ray images are taken as the contrast dye colours your coronary arteries to identify any narrowings or blockages. This contrast dye can result in transient nausea or chest discomfort of short duration. Different catheters can be used to obtain appropriate images of your heart but they are always exchanged from the same place in your groin or wrist. The final contrast (dye) injection is necessary to evaluate the heart muscle and often creates a warm sensation throughout the body for a few seconds. You will be informed when this is about to occur.

The procedure usually takes about 30 to 40 minutes. When the test has been completed, the catheters 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.

The interventional cardiologist may tell you your test results while in the cardiac cath lab or on your return to the immediate care centre (ICC) or ward. Further management may also be proposed at this stage or may require discussion with your treating cardiologist or other members of the MonashHeart team. In cases where an coronary angioplasty is planned, this will be performed at a later date in a procedure similar to the coronary angiogram.



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.

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.



In most circumstances, you will be allowed home after two to six hours of recovery. 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 may feel sleepy after the procedure. Please make sure you have someone with you who can drive you home afterwards. You should not drive for 24 hours after the procedure as the effects of sedation may persist for many hours.

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

That night and following day:

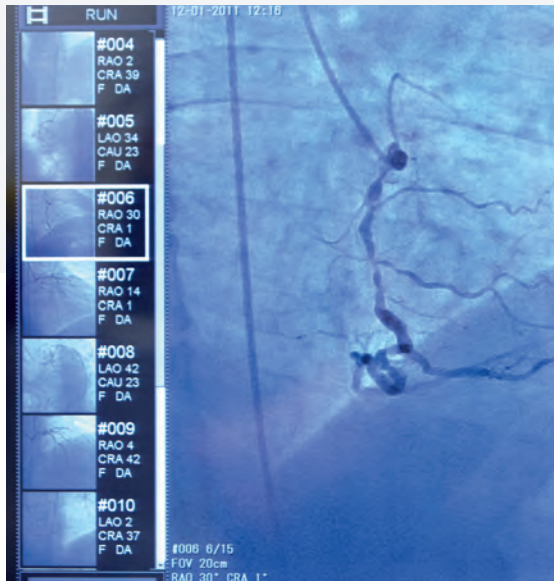
- ♥ Drink plenty of fluids over the next eight hours as this helps flush the contrast from your body
- ♥ There must be someone staying with you at home the night of your procedure
- ♥ Rest the night of the procedure, with little walking (if groin procedure), planning to rest at home the following day - 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 angiogram. This booklet has been written to help you understand the need for a coronary angiogram 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 angiogram?

A coronary angiogram is a special x-ray procedure during which dynamic images of the heart's arteries (coronary arteries) are taken to see if they are narrowed or blocked (a condition called coronary artery disease).



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, Monash Health in providing leading care to cardiac patients of all ages.

(Donations of \$2 or more are tax deductible ABN 82 142 080 338)

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