

intra

Image  
Guided  
Healthcare

# Coronary angiography and Percutaneous Coronary Intervention (PCI)

CARDIOLOGY | CORONARY

	PATIENT LABEL
First name: _____	
Last name: _____	



Your care  
lies within



Our image-guided procedures are minimally invasive meaning safer procedures with quicker and easier recovery.

Clean, precise, proven.

## Introduction

This guide has been designed for patients undergoing a coronary angiogram and/or Percutaneous Coronary Intervention (PCI) – i.e., the insertion of a stent(s) for coronary narrowings. It includes information about what is involved, how to prepare and what to expect throughout the various stages of your procedure.

After your procedure, please remember to take this booklet with you when you visit your GP and go to your cardiologist follow-up appointment.

### General

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### What to expect

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## Intra Epsom

Both Intra and MercyAscot will be involved with your care for this procedure.

MercyAscot are responsible for your admission, preparation and aftercare on the ward. The ward staff will take you to Intra (first floor, Mercy Ascot hospital) where your specialist and Intra staff will perform your procedure.

When you arrive, please report to the admissions desk on the ground floor of the main building of Mercy Hospital. From there you will be taken to the Cardiac Investigation Unit (CIU).

The direct line to the CIU, for use during the day of your procedure, 09 623 5752.

Intra Epsom  
1st Floor Mercy Hospital  
Gate 1  
98 Mountain Road  
Epsom, Auckland 1023

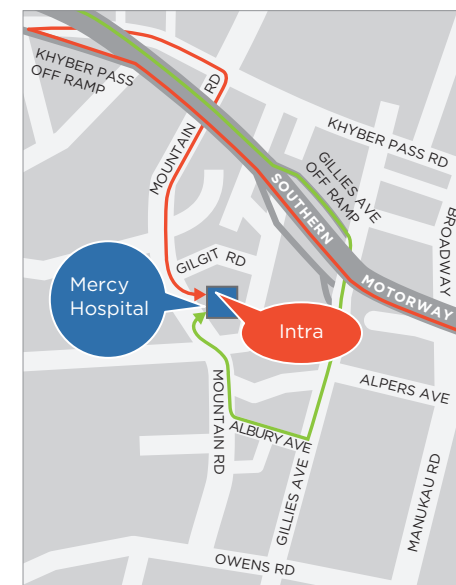
P: +64 9 630 1961 (office hours)  
P: +64 27 482 0763 (after hours)  
F: +64 9 630 1962  
E: admin@intracare.co.nz  
W: intracare.co.nz

### Where to park

Patient drop-off and free short-term parking (up to 60 minutes) is available at the main entrance (Gate 1) of Mercy Hospital.

Onsite parking is available at Gate 3, off Mountain Road.

Street parking is also available on the surrounding roads: Gilgit Road, Almorah Road and Mountain Road.



### Key:

Northbound motorway traffic

Southbound motorway traffic

## Intra North Harbour

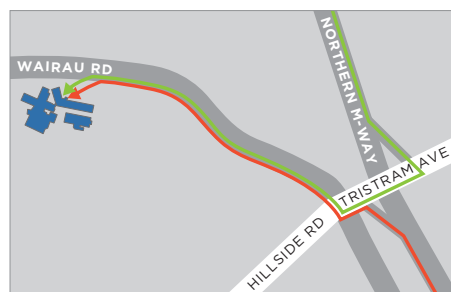
When you arrive, please report directly to the Intra reception desk on the ground floor of the Northern Clinic of the Southern Cross Hospital.

Intra North Harbour  
Southern Cross Hospital  
Ground Floor, Northern Clinic  
Entry A, 212 Wairau Rd  
Wairau Valley, Auckland 0627

P: +64 9 444 0022  
P: +64 27 482 0763 (after hours)  
E: admin@intracare.co.nz  
W: intracare.co.nz

### Where to park

Free parking is available either directly outside the Northern Clinic or in the main carpark (down the short ramp past the Northern Clinic.) Enter through Entry A off Wairau Road.



#### Key:

Northbound motorway traffic

Southbound motorway traffic

## Background

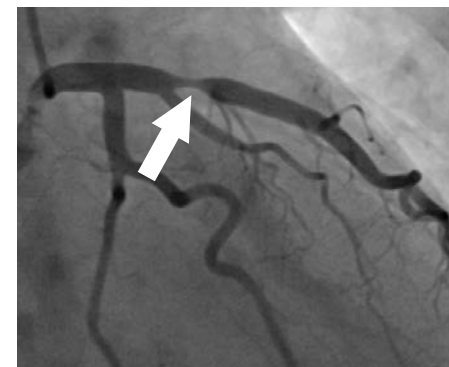
### What is coronary artery stenosis?

Coronary artery stenosis is the narrowing of the coronary artery. Just as an engine needs petrol, the heart needs blood to do its job of pumping blood around the body. Slow build-up of fatty plaque within the artery wall can cause the artery to narrow, reducing blood flow. Sudden changes in the plaque may cause angina to worsen or may cause a heart attack.

### What is a coronary angiography?

A coronary angiography is an examination of the coronary arteries. Coronary arteries take blood to the vessels that lie on the outside of the heart supplying blood to the heart muscle. These vessels are only a few millimetres wide.

Coronary angiography identifies the presence, extent and location of coronary artery stenoses. Other tests performed during the coronary angiogram include measuring pressures within the heart chambers, checking function of some of the valves and checking how well the main pumping chamber (left ventricle) is working.



A narrowing in the left anterior descending coronary artery.



After treatment with a stent (mesh tube), the arterial diameter is normal.

## Are there risks involved?

Coronary angiography and PCI are straightforward procedures, and serious complications are uncommon. Your cardiologist will have discussed the risks with you.

### Some of the things we look out for are:

- An allergic type reaction to the x-ray contrast (dye). Rash or itching sometimes occurs, however it is extremely rare for a severe, life-threatening allergic reaction to occur.
- Abnormal or irregular beating of the heart. This may occur during the procedure but is typically brief and easily treated.
- The x-ray contrast may temporarily affect kidney function. This is more common in patients who already have impaired kidney function and/or diabetes.
- It is extremely rare for the artery to become worse during a PCI. Should this occur, urgent bypass surgery may be required.
- Serious complications such as a heart attack, damage to the heart muscle, infection, stroke and death are very rare.

**Note:** Your coronary angiogram or PCI will be carried out in an angiography suite ("catheter lab") at Intra Epsom or Intra North Shore (see details pg 2-3). Your cardiologist will be assisted by a team of professional nurses and highly skilled medical personnel.

## Before your procedure

The Intra administration team will arrange your admission time (usually two hours before the procedure).

### Fasting

You may eat anytime up until two hours before admission, at which point you should stop. You may continue to drink clear fluids (e.g. water or tea without milk).

### Allergies or previous reactions to x-ray contrast

Please tell Intra staff at the time of booking if you have a history of these.

### Diabetes

If you are a diabetic, please tell Intra staff at the time of booking. You may need to discuss your insulin dose with your cardiologist.

### Warfarin, Coumadin or any other "blood thinner"

If you are taking one of these, please make this known to Intra staff at the time of booking. Your cardiologist will advise you if you need to stop this medication temporarily for a few days before the procedure.

### Other regular medications

Continue these unless advised otherwise by your cardiologist. **In particular, please continue taking your aspirin.**

### What to bring

If you are on regular medication, please bring this with you along with any recent blood test results or chest x-rays.

Please bring loose track pants or shorts to wear in the procedure room.

Usually patients stay in hospital for 2-4 hours after the procedure. Please bring an overnight bag with you in case you need to stay overnight.

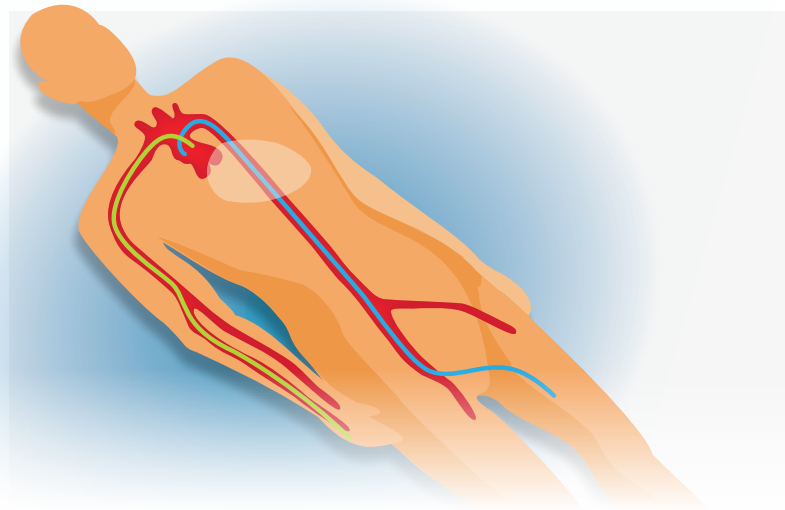
You may like to bring your playlist on your smartphone. Staff are happy to play your music during the procedure.

You are encouraged to bring a friend or a family member as a support person before and after your procedure.

## During your procedure

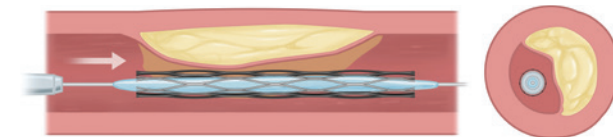
You will be lightly sedated but awake throughout. In the angiography suite an intravenous catheter (IV line) for the administration of fluids and medication will be inserted into a vein on the back of your hand, or in your arm. You may feel a slight pricking or scratching sensation as the needle goes in, but it should not be painful.

You will feel the local anaesthetic injection into your wrist or groin, then a tiny plastic tube called a catheter is introduced. You should not feel pain at the entry site, but there still may be some non-painful sensations, such as pressure. You should tell the interventional cardiologist doing the procedure if you are experiencing any pain.

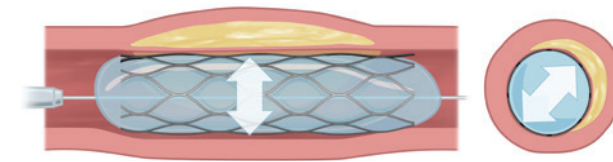


Your cardiologist watches the catheter on an x-ray screen as he/she passes the tip of the catheter to one of the coronary arteries. The contrast that is visible on x-ray imaging is injected into the coronary arteries and video images are recorded on the computer system. When contrast is injected into the left ventricle (pumping chamber), you may feel warm all over for a few minutes.

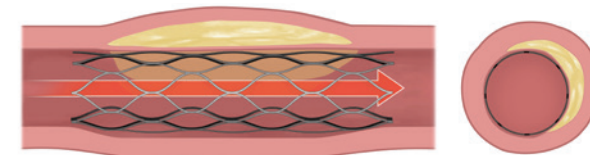
If a narrowing suitable for stenting is found, the interventional cardiologist may then insert a stent. This procedure is referred to as Percutaneous Coronary Intervention (PCI).



Through the guiding catheter, a wire about the thickness of a hair is passed across the narrowing. A stent (a fine mesh metal alloy tube that comes squashed down on a balloon) is directed across the narrowing by the wire.

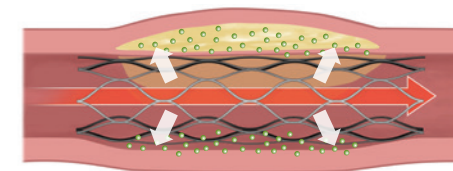


The balloon is inflated to expand the stent and artery. The stent is pushed into the artery wall holding the artery open.



The balloon is deflated and removed leaving the expanded stent in place. Once expanded the stent cannot move.

### Drug eluting stents



Drug eluting permanent stents are the most frequently inserted stents with excellent results achieved over several years. These stents are coated with a medication to prevent or substantially reduce the chance of re-narrowing and the need for repeat treatment.

## After your procedure

### General instructions

- If you have chest pain in hospital after the procedure you should report this to the nursing staff immediately. Occasionally pain is due to a clot within the stent that is reducing blood flow.
- Please drink at least 1 glass of water every hour to flush out the contrast from your kidneys until you go to sleep for the night.
- After the procedure, your cardiologist will discuss the findings with you while you are in hospital or at a follow-up appointment.
- You will usually be able to go back to work two days after the procedure, depending on the type of job you do, and the procedure performed.
- To reduce the possibility of bleeding or infection do not sit in a hot tub or spa.

### Getting home

- If you are having a coronary angiography (without PCI), it is likely that you will be discharged on the same day (although under some circumstances you may need to stay overnight).
- If you are having a PCI then you may not go home on the same day, but you will be advised.
- If you go home the day of the procedure, someone should stay with you that night.
- Someone must drive you home, or accompany you in a taxi. It is important you do not drive within 48 hours after this procedure as the sedation may affect your reaction responses, and there is a risk of bleeding from the entry point (wrist or groin). Please arrange for accompanied transport in advance.

### Medication

- Your cardiologist will discuss with you what medication you should take. Almost all patients should take aspirin indefinitely. If you have a PCI, you will be given an initial dose of clopidogrel (Plavix) and then one tablet daily as prescribed by your doctor. **The only person who can tell you to stop taking clopidogrel is your cardiologist.**
- If you are prescribed clopidogrel please pick this up from the pharmacy before you go home.

## Lifestyle

- You should rest for a few days, avoid heavy lifting and any vigorous movement of the affected limb. You can gradually build up your exercise tolerance, so you are back to full activity a week after the procedure.
- For good heart health it is a good idea to have a regular exercise routine, such as walking, cycling or swimming briskly for at least 30 minutes most days of the week.
- People who quit smoking following a PCI report a much better quality of life than those who kept smoking. Visit [Quit.org.nz](http://Quit.org.nz) or 0800 778778 for free support.

### Radial (wrist) site care

During the few days after your procedure -

- Do not lift with the affected arm or do any strenuous activity.
- Please leave the sling in place for 24 hours after discharge.
- You can remove the dressing 24 hours after the procedure. Please apply a new sticking plaster if you feel it is necessary.
- Keep the site clean and do not rub the wound; just pat it dry after showering until it has healed.
- If the site looks red, inflamed and/or infected please see your general practitioner (GP).
- It is normal to experience some minor bruising and/or feel a small pea-sized lump under the skin at the puncture site; this will disappear in time or may remain as permanent scar tissue. This is nothing to be concerned about.
- You may take paracetamol as usual if your arm is sore. If your arm continues to be painful please phone 09 630 1961 (office hours) or 027 482 0763 (after hours).

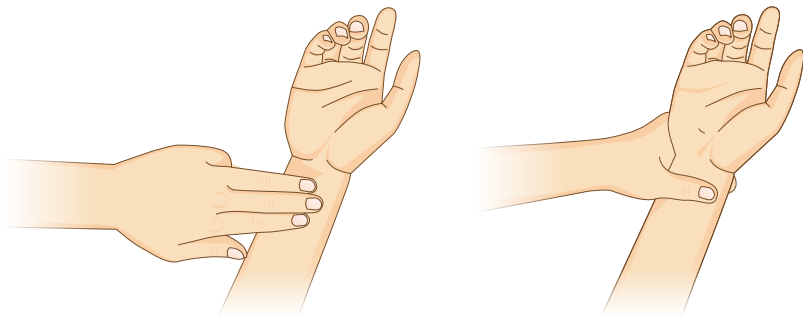
Please read and follow the instructions on the following pages if any of the following occurs after you have been discharged:

## Bleeding

Bleeding from the radial artery can be serious if left untreated.

- If it is only a small ooze, apply a sticking plaster and lightly press for a few minutes.
- If there is significant bleeding, you or another person will need to put firm pressure on the site for a minimum of 10 minutes and raise your arm.

See images below.



- If this does not stop the bleeding, either call an ambulance or go to your local accident and emergency department immediately.

If you have any concerns about your procedure phone 09 630 1961 (office hours) or 027 482 0763 (after hours).

## Haematoma

- A haematoma is where blood forms a hard, sometimes painful lump under the skin, larger than a 10 cent coin.
- If this occurs use your other hand or get another person to press down firmly on the centre of the haematoma for approximately 10 minutes.
- If after releasing pressure the lump comes back, please go to your local accident and emergency department.

## Femoral (groin) site care

During the few days after your procedure -

- Do not do any heavy lifting or strenuous exercise, such as golf or a gym workout.
- Try not to strain on the toilet, or excessively cough or sneeze, as this puts pressure on the puncture site which may cause it to bleed.
- To reduce the possibility of bleeding or infection do not sit in a hot tub or spa.
- Please leave the sticking plaster in place for 24 hours following your procedure. Apply a new sticking plaster if necessary.
- Keep the site clean and do not rub the wound; just pat it dry after showering until it has healed.
- You may resume walking if your puncture site is not painful.
- You may resume work after two days, depending on how you are feeling and the type of work you do (note: heavy manual work may require a longer break).
- It is normal to experience some minor bruising and/or feel a small pea-sized lump under the skin at the puncture site. In time, this will disappear or may remain as permanent scar tissue. This is nothing to be concerned about.

Please read and follow these instructions if any of the following occurs after you have been discharged:

## Bleeding

If left untreated, bleeding from the femoral artery can be serious.

- If it is only a small ooze, re-apply a sticking plaster and lightly press for a few minutes.
- If there is significant bleeding you should lie flat, another person will need to apply firm pressure for a minimum of 10 minutes. Call an ambulance immediately (dial 111).

If you have any concerns about your procedure phone 09 630 1961 (office hours) or 027 482 0763 (after hours).

## Haematoma

- A haematoma is where blood forms a hard, sometimes painful lump under the skin larger than a 10 cent coin.
- If this occurs, lie down and get another person to press down firmly on the centre of the haematoma for approximately 10 minutes.
- If after releasing pressure the lump comes back, keep applying pressure and please go to your local accident and emergency department immediately.



## Health insurance and funding

You will receive an estimate for the cost of your procedure with Intra prior to the date of your procedure. If this estimate has not been received, please contact the Administration team.

If you have private health insurance please contact our Administration team. Intra is affiliated with some health insurance providers and will help you with the approval process.

Should you not have insurance, you will be required to pay the full estimated cost of your procedure prior to the date of your procedure. Please contact the Administration team to arrange payment. Payment can be made by credit card (Mastercard or Visa), eftpos or online banking.

Please contact the administration team on (09) 630 1961.

## FAQs

### **Who do I contact if I have concerns following the procedure?**

If you have concerns in the first few days, contact your cardiologist. In the unlikely event you have severe pain lasting more than 20 minutes, call an ambulance (dial 111).

### **Will stents set off alarms at the airport?**

A stent will not set off alarms at the airport.

### **Can stents move?**

Once in place, a stent should not move.

### **How likely will cholesterol break off from the PCI site?**

It is very uncommon for cholesterol to break off from the PCI site and pass downstream.

### **How likely is it to require further treatment for a stented site?**

It is rare for a drug eluting stent to re-narrow and need to be treated again.

## Glossary of terms

### **Angiography suite, catheterisation laboratory or cath lab**

An examination room in a hospital or clinic with diagnostic imaging equipment used to visualise the arteries of the heart, the chambers of the heart and to treat any stenosis or abnormality found.

### **Catheter**

A tiny thin plastic tube, which is usually inserted into an artery through a small incision in the skin. Refer page 7.

### **Cholesterol (also called lipids)**

A type of fat that your body makes. We all need some cholesterol for important jobs like making hormones and cells. High levels of cholesterol can clog up your blood vessels, which can lead to heart attacks or strokes.

### **Coronary angiography**

An examination of the coronary arteries. Coronary angiography identifies the presence, extent and location of coronary artery stenoses. Refer page 4.

### **Coronary artery stenosis**

The narrowing of the coronary artery. Slow build-up of fatty plaque within the artery wall can cause the artery to narrow, reducing blood flow. Refer page 4.

### **Drug-eluting stent**

A stent coated with a medication to prevent or substantially reduce the chance of re-narrowing and the need for repeat treatment. Refer page 8.

### **Femoral access**

Access through the artery in the groin.

### **Hematoma**

Where blood forms a hard, sometimes painful lump under the skin, larger than a 10 cent coin. Most commonly, hematomas are caused by an injury to the wall of a blood vessel, prompting blood to seep out of the blood vessel into the surrounding tissues. Refer page 11 and 12.

### **Interventional cardiologist**

A registered, experienced cardiologist who can treat the blockages of the heart arteries.

### Percutaneous coronary intervention (PCI)

If a narrowing of the coronary arteries suitable for stenting is found during a coronary angiogram, the interventional cardiologist may then insert a stent. This procedure is referred to as Percutaneous Coronary Intervention (PCI). Refer page 7.

### Plaque

Plaque is made up of cholesterol deposits. Slow build-up of fatty plaque within the artery wall can cause the artery to narrow, reducing blood flow. Refer page 4.

### Radial access

Access through the artery in the wrist.

### X-ray contrast

Special dye visible on x-ray imaging injected into the coronary arteries. Video images are recorded on the computer system.

## Discharge summary

Please ✓, ✗ or N/A all fields Procedure date: \_\_\_\_\_

Cardiologist: \_\_\_\_\_ Ph: \_\_\_\_\_

Interventional cardiologist: \_\_\_\_\_ Ph: \_\_\_\_\_

Procedure:  Angiography  PCI Number of stents: \_\_\_\_\_

Access:  Radial (wrist) L / R  Femoral (groin) L / R

### Medication instructions

Please read the 'After your procedure' section on page 9.

Please phone your cardiologist if you have any questions regarding your medication.

Clopidogrel (Plavix). Please take one tablet daily as prescribed by your doctor for at least \_\_\_\_\_ months. Please pick up your clopidogrel from the pharmacy before you go home if required. The only person who can tell you to stop taking these is your cardiologist.

Please take aspirin daily  Y  N

**The above medication is important, do not stop taking them without contacting your cardiologist.**

### Site care

Please read the 'Site Care' information on page 10 – 12

Radial (wrist) site care  Femoral (groin) site care

If you have any concerns about your procedure phone 09 630 1961 (office hours) or ph 027 482 0763 (after hours).

### Follow up instructions

It is usual to have a follow-up appointment with your cardiologist.

The date of your appointment will depend on the outcome of your procedure. Please contact your cardiologist to book an appointment, unless your appointment is already confirmed.

Please phone your cardiologist if you have any questions.

If you have minor concerns prior to your follow up appointment, please arrange to see your general practitioner (GP).

### Other instructions

\_\_\_\_\_  
\_\_\_\_\_

Intra staff name: \_\_\_\_\_ Signature: \_\_\_\_\_

# Notes

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E: [admin@intracare.co.nz](mailto:admin@intracare.co.nz)

W: [intracare.co.nz](http://intracare.co.nz)

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P: +64 27 482 0763 (after hours)