NHS
West Suffolk
NHS Foundation Trust

Patient information

# Cardiac catheterisation and coronary angiography pre-admission information

## Introduction/procedure

Cardiac catheterisation is a special x-ray test that looks at your heart arteries (coronary arteries), heart pump and heart valves. It is used to determine the extent and severity of disease and provides detailed information, which enables your doctor to plan the best treatment for you.

The procedure is performed under local anaesthetic. If you are feeling anxious we can give you medication in the theatre to relax you.

Coronary angiography refers to the part of the procedure in which x-rays of the coronary arteries are taken. As coronary arteries do not show up on a plain x-ray, an x-ray dye (radiological contrast medium) is injected into them by using a thin flexible tube called a catheter. The catheter is inserted via the femoral artery (artery at the top of the leg) or the radial artery (artery in the wrist). The angiogram shows the exact site and severity of any narrowing of the coronary arteries.

Coronary artery disease is the most common reason for doing this test. Options for treatment of coronary artery narrowing's include:

- Medication only, e.g. in minor narrowing's.
- Percutaneous coronary intervention (PCI). This usually involves angioplasty (balloon stretch of the narrowing) and in most cases stenting (implantation of a wire mesh tube that acts like a skeleton to hold the artery open). This is a local anaesthetic procedure performed through catheters like coronary angiography, and is the most common method of fixing arteries.
- Coronary artery by-pass surgery (CABG). This is usually open-heart surgery and may be preferable if the anatomy of the arteries is not suitable for PCI.



Putting you first

When deciding upon the appropriate option for you, your clinical history, physical state, symptoms, severity of heart disease, risk of future heart problems and personal preferences are all taken into consideration, together with the risks and benefits of treatment, and the likelihood of treatment success.

## Risks, benefits and alternatives

### Benefits

- Diagnosis
- Planning of treatment

### Risks

This is a generally safe test with low risk, but as with any procedure, complications can occur:

### Potentially major risks

- Less than 1:1000 (0.1%) risk of heart attack, stroke or death.
- 1 in 500 (0.2%) risk of damage to the femoral artery of the leg. This can usually be repaired but may require surgery.
- In patients with impaired kidneys, contrast nephropathy (deterioration in kidney function due to x-ray dye) may occur. It is usually mild and reversible within seven days. Persistent severe deterioration occurs in less than 1%, mainly in people with pre-existing, significant kidney failure.
- Other major complications and serious allergic reactions are very rare.

### Minor risks

1 in 100 risk of minor side effects from the x-ray dye eg rash or itch, headache.
Mild groin bruising is common.

## Preparation

### How do I prepare for cardiac catheterisation/coronary angiogram?

You will receive a pre-admission phone call from a nurse. The aim of this is to prepare you for your angiogram.

You will need to have a blood test: a blood form has been sent with this information.

- **If you take anticoagulants:**
  - **Warfarin, phenindione or nicoumalone** (anticoagulant drugs), you will need to stop for three days before the test.
  - **Apixaban, dabigatran, edoxaban or rivaroxaban** (otherwise known as NOACs or DOACs) you will need to stop this for two days prior and on the day of procedure**.**

- **If you take insulin or drugs for diabetes,** these may need to be altered; further information will be given to you at your **pre-assessment clinic appointment.**
  - If you are on **metformin,** stop this on the day of the test and omit it for 48hours after, then restart at the usual dose.

- Take all other morning medications at their usual dose on the morning of the test, at or before breakfast.

- Have a light breakfast:
  - Before 6.00am, if your test is scheduled for the **morning**
  - Before 9.00am, if your test is scheduled for the **afternoon**

  You should have no further food until after the procedure but you can continue drinking water. If you are diabetic, the nurse will advise you at pre-assessment on when you can eat and take your medication. Diabetic patients are usually put on a morning list so that meals are not missed.

- If you may be pregnant you must tell the doctor who will be doing the test.

- The day prior to the procedure please could you shave both groins. If this is not possible the nurses on the cardiac ward will help you with this on the day of the procedure.

- One hour before the procedure, you will be asked to put your hospital gown on.

- You will at some point before the test be asked to sign a consent form to confirm that you understand the procedure, understand the possible complications and agree to the procedure being done.

- If you are anxious, please let the nurse know during your pre-admission phone call or on arrival at the day surgery unit. We can give you medication in the theatre to relax you.

- The test is usually done as a day case, as long as:

- There is a responsible adult for you to go home to (if this is not possible there is a risk that your angiogram may not be able to proceed)
- Transport is available (hospital transport can be arranged if necessary)
- You have a telephone at home in case of emergencies
- You have no significant complications
- You have no previous history of relevant problems with cardiac catheterisation

If you do not fulfil these criteria, please let the pre-admission nurse know in advance.

## How is cardiac catheterisation done?

You lie on the x-ray bed and the x-ray machine comes above and below you. It will move around you and come close to you but should not press on you or hurt you. The room is kept relatively cold to avoid equipment overheating.

During the procedure, your heartbeat is monitored by ECG, with electrodes placed on your limbs and sometimes also on your chest.

A sheath (short tube) is inserted under local anaesthetic into your wrist or groin, through a small cut in the skin and a special needle puncturing the artery or vein. You will be able to feel the doctor pressing on your wrist or leg, but it should not hurt. Catheters are pushed gently up the blood vessel to the heart, guided by low dose x-rays. You may be able to see the progress of the catheter on the x-ray monitor.

X-ray dye (contrast medium) is injected down the catheter into each artery to light it up on x-ray and x-ray films are taken from different angles. When larger amounts of dye are used to look at the heart pumping function or the aorta (the big pipe taking blood out of the heart to the rest of the body), you will feel a hot flush due to the dye. This lasts about half a minute, wears off by itself, often goes all over the body, and can make you feel like you have wet yourself but no one ever has.

You cannot feel the catheter inside the blood vessels. You may feel an occasional “missed” or “extra” heartbeat during the procedure, this is normal and of no concern.

The whole procedure takes about 20 minutes in straightforward cases and can sometimes take up to 45 minutes for more complex procedures eg in patients with heart valve disease or previous bypass grafts.

## What happens afterwards?

### Wrist (radial):

If the wrist is used, the catheter (tube) will be removed before you leave the lab and you will return to the ward with a TR (trans radial) band which is a special type of plastic bracelet, underneath which is a small balloon. The balloon will press hard on the artery to stop the bleeding. The bracelet will be taken off before you go home.

Please note: do not wear any jewellery including watches on that wrist for 5 - 7 days.

No blood pressures or blood samples should be taken from this arm for 36 hours.

### Groin (femoral): Depending on the anatomy of the femoral artery the wound will be sealed either by:

1. The nurse will remove the tube in your groin once you return to the ward area. Pressure will then be applied to your groin to ensure there is no bleeding from the artery. You will remain on bed rest for a period of time following the removal of the tube from your groin. This is to prevent any bleeding occurring when you start walking. You must lie flat for at least one to two hours after removal of the tube and it is important that you keep your leg straight at all times during the period of bed rest.

2. A device called an **angioseal is** sometimes used to seal the artery and avoid pressing to ensure no bleeding. This is a small collagen plug. In this case the tube will be removed in the lab and the **angioseal** will be placed in the artery before you leave the lab. It dissolves within 3 months. The collagen plug can sometimes be felt as a small pea sized lump in your groin; this is normal and will slowly reduce as it dissolves.

During the 3 months whilst the collagen plug is being absorbed you will be asked to carry a card informing any doctor who may wish to treat you, that it is there. Having an **angioseal** may reduce the length of time in hospital after the procedure although they are not appropriate for use in every patient.

### In all cases:

A nurse will check your pulse and blood pressure and check the wound site at regular intervals to ensure all are well. You must inform a nurse if you feel unwell or peculiar after the investigation. You will be allowed out of bed once the nursing staff are satisfied the wound is stable.

It is very important that you drink plenty of fluids to “flush” the dye out of your body afterwards. Light refreshments will be offered following the procedure.

The doctor will see you before discharge, to give you the results and discuss the next steps in your care. You will be given a preliminary discharge summary letter to take with you, and given instructions for any changes in medications, aftercare, etc before you leave. A full formal letter will be sent to your GP subsequently.

We aim to discharge you after you have been satisfactorily mobilising for approximately 3 - 4 hours.

## Aftercare of your catheter site

Before leaving the angiogram recovery bay, the nursing staff will talk to you about how to care for your wound, how to recognise and treat any problems and what to expect. You will also be given an advice sheet.

You have had a procedure under local anaesthetic and are fit to go home under adult supervision.

**After care/discharge advice, cardiac catheterisation via radial route (wrist)**

Avoid heavy lifting for 48 hours; this includes children, pets, shopping, saucepans, etc.

Do not drive for 48 hours.

You may remove the plaster tomorrow. From then on you may have a bath or shower as normal, but avoid applying powder or lotion for one week.

You should expect some bruising. This is normal so long as the area stays soft. If you have concerns contact your GP.

Minor aching can be relieved by pain relief medication (such as paracetamol) but pain should be reported to your GP immediately.

Any redness, inflammation or oozing from the wound is not normal. You must contact your GP immediately.

A pea–sized lump may develop at the incision site, anything larger than this should be seen by your GP.

In the event of a bleed, **try not to panic.** Sit down and apply firm pressure to your wound and keep your arm raised above your chest. Ask someone to telephone 999 for medical assistance.

**After care/discharge advice, cardiac catheterisation via femoral route (groin)**

Sometimes there is numbness down the front or inside of the thigh after the local anaesthetic as the nerve runs near the artery. This is generally transient and wears off after a few hours.

Bruising in the groin where the catheter was inserted is fairly common, and bruising may extend down towards the knee. Bruising in itself is not serious, but the catheter site may occasionally be a little sore when the anaesthetic wears off. Painkillers such as paracetamol will help to ease the soreness.

Bigger bruises may be associated with a small lump in the groin, although these are usually dissipated by pressure on the groin while you are still on the ward.

A small pea-sized lump can be felt in the groin if an Angioseal device is used to seal the femoral artery after the procedure, and this persists for up to 90 days. The lump is the special substance, collagen, used to seal the artery.

No lump should develop, or existing lump grow in size or tenderness after discharge. The wound should not become red and sore, and you should not have leg pain. Such problems should be reported to your GP, or in an emergency, you will need to come to hospital to be assessed.

You should not drive for 24 hours. You can resume normal gentle activities the next day, including bathing when you feel comfortable, but you should refrain from taking strenuous activity for at least 48 hours.

**Drug Information post procedure:**

If you take **Metformin do not** take for 48 hours following your angiogram.

If you take Warfarin**, Apixaban, Dabigatran, Edoxaban or Rivaroxaban** you may restart it on the evening following your angiogram unless the doctor has instructed otherwise.

## Contacts

**For clinical advice, please contact:**

West Suffolk Cardiac Care Unit (CCU) 01284 713332

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| West Suffolk Hospital switchboard: | 01284 713000 |
| Cardiac day unit receptionist | 01284 712759 |
| Cardiology Diagnostics | 01284 712536 |

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*https://www.accessable.co.uk/organisations/west-suffolk-nhs-foundation-trust*

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