

Cardiology

Patient's guide to coronary angiogram, angioplasty and stent

The aim of this booklet is to provide you with information about your forthcoming procedure.

- This may be a coronary angiogram only
- or**
- The angiogram may be combined with an angioplasty, which would usually include having a stent fitted

We hope that this information will help prepare you for your hospital admission.

Angiogram

What is an angiogram?

An angiogram, also known as a cardiac catheterisation or angio, uses X-ray pictures to look at the function of your heart, the coronary arteries and heart valves.

Why do I need it?

The angiogram itself is not a treatment. It is a test that will provide information about your heart to help decide on the best treatment.



Before the procedure

Pre-admission Clinic

You will be asked to attend a pre-assessment clinic before your admission where we will take blood, carry out an MRSA swab, and an ECG if necessary. Your procedure will be discussed with you and any questions you may have will be answered.

Due to the Covid-19 pandemic you will also be asked to attend for a Covid swab test, this will be arranged by the booking office.

The Waiting List Coordinators will contact you after your pre-assessment appointment to book your procedure date. They can be contacted on 024 7696 5869 or 024 7696 5592.

What medication must I not take before my test?

Warfarin, dabigatran, rivaroxaban, apixaban, edoxaban:

You must **stop** taking the drugs listed above **4 days before** your test (**unless instructed otherwise**).

Metformin, Glucophage:

You must stop taking these **1 day** before your test, and then you can re-start your diabetic tablets **2 days** after your test.

Diuretics (water tablets):

Do not take them on the **morning** of your test.

Insulin:

If you have insulin dependent diabetes, you should take your insulin as normal with your breakfast.

All other tablets that you usually take in the morning must be taken with breakfast.

If you have any questions or queries, please contact:
Cardiology Day Unit on 024 7696 5661

Patient Information

When do I stop eating and drinking before the test?

It is not necessary to be nil by mouth for your procedure. You may eat and drink as normal.

What do I need to do before coming into hospital?

Transport

You will need to have someone to bring you to hospital and to take you home again.

At present, no visitors are allowed to stay with you during your admission. However you will need someone to drop you off and pick you up. Please note that **no children are allowed on the unit.**

Usually, patients having an angiogram go home on the same day. However, if you do not have your procedure until quite late on in the afternoon, it may be necessary to keep you in overnight.

Items to bring in

We advise you to bring an overnight bag, with toiletries and nightwear, just in case you need to stay overnight.

It is also essential that you bring **all your medication** in with you, as the nursing staff and doctors will need to see them.

If you wear nail varnish or false nails, please remove them before coming into hospital.

Please do not use any bath oil or moisturising body lotions or creams on the day of admission. These cause difficulty in sticking the ECG pads onto your skin to monitor your heart during the procedure.

Please remove all items of jewellery, with the exception of your wedding ring.

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Do not bring in any valuables or large amounts of money.

You **must not** undergo this test if you are pregnant, or you think there is a possibility of you being pregnant. Please speak to the nurse or doctor if you have any doubts.

What happens when I arrive at the hospital?

Please report to main reception on the ground floor. The receptionist will direct you to the appropriate Cardiology Unit/Ward and they will provide you with the necessary paperwork.

Take the East Wing lift to the 2nd floor and turn left. (If you use the stairs turn right). The Cardiology Unit/Ward is situated on Ward 21.

You will be met by a nurse or support worker who will be looking after you. They will assist you in preparing you for your test.

A doctor or specialist nurse will come and see you to explain the angiogram and the possibility of an angioplasty and stent. He/she will ask you to sign a consent form agreeing to have the procedure done if you have not already signed one when you attended the pre-admission clinic.

When it is time for your procedure, you will be asked to put on a hospital gown and disposable underwear or a disposable patient suit. A cannula (needle) may be inserted into the back of your hand or arm, as we may have to give you some medication during the test.

How long will I be in hospital for?

You need to be prepared to stay all day. A relative or friend may stay with you.

Unfortunately, the list order may change due to emergencies, and in some cases your procedure may need to be deferred.

How is the angiogram done?

- You will be taken by a nurse or support worker to the Cardiac Catheter Suite where the test is done.
- You will be met by a nurse who will introduce themselves and then take you into a special room called a Cath Lab. This room is kept at a cool temperature because of the hi-tech equipment, television screens and monitoring equipment.
- You will be asked to transfer on to the X-ray table, which is quite narrow. If you are unable to do so yourself, we will assist you. The cardiac physiologist will attach heart monitor leads to your shoulders and left leg.
- Your wrist or groin will be cleaned with an antiseptic lotion and then you will be covered by sterile drapes. A local anaesthetic will be injected to numb the area where the tube will be inserted. Once the injection has taken effect you should not feel any discomfort or pain at the wrist or groin.
If the procedure is done from the wrist you may feel a sensation of the catheter (narrow tube) passing up the arm, but usually this is not painful.
- Different catheters are used to look at the heart. Dye is then injected down the catheter and pictures are taken using X-rays. You will notice that the X-ray machine will move close to your chest and will also move towards your head and from side to side, this enables a complete picture of the heart, arteries, and valves to be taken.
- You may notice a hot flush feeling when the dye is injected. This feeling will last for about 30 seconds. You may feel extra heart beats (palpitations), but this is perfectly normal.
- You may have the sensation of having passed water, but you have not.
- The test will take around 30 minutes. At the end of the test, the tube will be removed and the small hole sealed.
- If your wrist was used for the angiogram, a wrist band will be applied for between 2 – 4 hours and then replaced with a small dressing
- If the groin is used, then the hole will usually be sealed with a special plug device (Angioseal). A small dressing will also be applied.

Are there any risks in having an angiogram?

As with all procedures or operations, there is an element of risk. In most cases, this is very small. These risks include:

- There is a slight risk of a heart attack, stroke, or death. The doctor who explains the procedure will be able to give you a more precise estimate of risk in your case.
- Emergency heart surgery is very occasionally required during or soon after the procedure if serious problems are found or develop. Surgeons are available to perform the surgery if this is required.
- Bruising and a small lump in the arm or leg are quite common, but these will resolve in a few weeks.
- There is a small risk of damage to the artery in the arm or leg and this may require surgical repair.
- Allergic reaction. The dye we use to look at the coronary arteries is called contrast and it contains traces of iodine - some individuals can be sensitive or have an allergy to iodine. **Please let staff know if you have an allergy to iodine. Also please let staff know if you have a latex allergy.**

Radiation risk

We use radiation in the form of X-rays to look at the coronary arteries. X-rays can carry a risk of damaging the body's cells, potentially causing cancer. Generally, the radiation exposure is as low as possible, and the benefits of these tests far outweigh the risks.

Risk in pregnancy

We ask all women of childbearing age (10 to 60 years old) the date of their last menstrual period (LMP). This is to check if there is any possibility of pregnancy as X-rays can cause damage to an unborn baby's rapidly growing cells. This damage can cause birth defects and certain childhood cancers like leukaemia or in extreme cases, death.

What happens after the test?

The doctor will examine the pictures that have been taken of your coronary arteries. They will discuss the results with you. If angioplasty and stenting is required, then it may be offered at the same time as the angiogram.

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If not, you will return to the ward, where:

- You may need to remain in bed for between 30 minutes and 4 hours, but in some cases, you may be able to get up and about immediately
- Your blood pressure and pulse will be taken. The nurse will check the pulse in your wrist or feet depending on where the test was performed, and the wound site will be checked
- If the test was done at the groin, it is important that you keep your leg straight to reduce the chance of bleeding or bruising
- If the test was done from the wrist, you should be able to mobilise more quickly, but you will need to take care not to disturb the wrist band
- The doctor or nurse will discuss the results of your test with you before you go home

What advice will I be given before going home?

You'll be given advice by the nurse and an information sheet about what you can do when you return home.

- A relative or friend must take you home.
- You need to rest for 48 hours after the test before returning to work. If you need a sick note, please let the ward staff know as soon as possible
- Remove the dressing after 24 hours - you don't require a further dressing on the insertion site. You may notice some bruising or discolouration at the site, this is not unusual.
- Keep the insertion site clean and dry. Avoid using talcum powder and lotions.
- Take painkillers if you feel that you require them
- If you've had an **Angioseal**, carry the Angioseal card with you for 90 days (3 months)
- Avoid driving for the first 48 hours - you may put pressure on the groin or wrist
- Let your car insurance company know you've had the procedure – if you don't, you may not be covered in the event of an accident
- **Do not fly for 7 days** after your procedure. **Remember to check with your travel insurance company and flight provider if you're covered for your heart condition.** Also let your airline know in case there are any travel restrictions

Angioplasty

What is an angioplasty?

An angioplasty is a treatment to improve blood supply to the heart, by stretching the artery and reducing the narrowing with a balloon.

Why do I need an angioplasty?

The coronary arteries supply the heart muscle with blood and oxygen. Over time, fatty materials settle into the inner lining of the artery, narrowing or blocking the vessel. This narrowing or blockage can reduce blood flow to the muscle of the heart leading to 'angina-type' pain.

What is a stent?

A stent is a small metal tube, which is inserted into the once narrowed artery. It acts as a support or scaffolding to the blood vessel.

There are two basic types of stents called:

- bare metal
- drug eluting

On occasion a dissolvable stent called a bioabsorbable vascular scaffold (BVS) may be used.

The doctor performing the procedure will decide which type of stent is required, depending on your condition and pattern of narrowing in your arteries. Drug eluting stents tend to reduce the chance of further narrowing developing within the stent.

Before the procedure

Pre-Admission Clinic

You will be asked to attend a pre-assessment clinic before your admission where we will take blood and carry out an MRSA swab. (This is only if you do not have any up to date blood tests and MRSA swabs). Your procedure will be discussed with you and any questions you may have will be answered.

Patient Information

Due to the Covid-19 pandemic you will also be asked to attend for a Covid swab test, this will be arranged by the booking office.

The Waiting List Coordinators will contact you after your pre-assessment appointment to book your procedure date. They can be contacted on 024 7696 5869 or 024 7696 5592.

How is the angioplasty and stent implantation done?

The procedure will take approximately 30 minutes to 2 hours, depending on the number of narrowings in the artery or if more than one artery requires treatment.

A fine wire is passed through the guiding catheter and through the narrowing in the artery. A balloon is then passed over the fine wire and into the narrowing. Once in position, the balloon is inflated for a few seconds. This causes the fatty material to be compressed against the wall of the artery. In most cases, a stent will also be inserted. The scaffold is inserted on a balloon which is then expanded to hold the artery open. Further balloons may be inflated to ensure that the stent is adequately fixed in place.

During the procedure you may experience angina-type pain when the balloon is being inflated, similar to what you have been experiencing at home. This is due to the balloon temporarily blocking the flow of blood through the artery. In most cases the pain is mild, but if you feel uncomfortable, please let the doctor or nurse know so that they can give you pain relief.

When the required result has been achieved, the balloon, wire and guiding catheter will be removed.

As with an angiogram, the hole will be closed with a wrist band or collagen plug (ANGIOSEAL)

Are there any risks in having an angioplasty and stent implantation?

- As with all procedures or operations there is an element of risk there is a slight risk of a heart attack, stroke, or death, but the doctor who explains the procedure will be able to give you a more precise estimate of the risk in your case
- Emergency heart surgery is very occasionally required during or soon after the procedure if serious problems are found or develop. Surgeons are available to perform the surgery if this is required
- If the procedure is performed from the groin, bruising and a small lump in the leg are quite common, and these usually resolve in a few weeks. However, there is a small risk of damage to the artery in the leg that may require surgical repair

Allergic reaction

The dye we use to look at the coronary arteries is called contrast and it contains traces of iodine; some individuals can be sensitive or have an allergy to iodine. **Please let staff know if you have an allergy to iodine. Also please let staff know if you have a latex allergy**

Radiation risk

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Risk in pregnancy

We ask all women of childbearing age (10 – 60 years old) the date of their last menstrual period (LMP). This is to check if there is any possibility of pregnancy as X-rays can cause damage to an unborn baby's rapidly growing cells. This damage can cause birth defects and certain childhood cancers like leukaemia or in extreme cases, death.

What happens after the procedure?

- You may need to stay in bed for between 30 minutes to 4 hours, but in some cases you may be able to get up and about immediately
- Your blood pressure and pulse will be taken. The nurse will check the pulse in your feet or wrist depending on where the test was performed, and the wound site will be checked
- If the procedure was done at the groin, it is important that you keep your leg straight to reduce the chance of bleeding or bruising
- If you want to cough or sneeze place your hand at the groin to provide pressure to prevent the risk of bleeding
- If the procedure was done from the wrist, it is important that you do not use the arm for two hours, to prevent bleeding or bruising
- You will be able to have something to eat and drink straight after your procedure

Following insertion of the stent, a thin film of cells grows over and lines the stent surface. Until this happens, there is a small risk of blood sticking to the stent which could then result in the artery blocking. To prevent this, you will be started on a drug called **clopidogrel**, which will significantly reduce the risk of a clot forming on the metal struts of the stent.

It is essential that you do not stop taking your clopidogrel for 12 months following your procedure.

If any doctor asks you to stop taking clopidogrel before 12 months, please ask them to contact your cardiologist to discuss their reasons.

You will be given a card stating that you are taking **clopidogrel** for 12 months. This card should always be carried with you.

The doctor or nurse will discuss the results of your angioplasty and stent implantation with you before you go home.

What advice will I be given before going home?

You will be given advice by the nurse and an information sheet about what you can do when you return home

- A relative or friend must take you home
- You should avoid strenuous activity for **7 days** and will usually be able to return to work after this. However more specific advice on the timing of your return to work will depend on the nature of your job and the exact procedure which was performed
- Please remove the dressing after 24 hours. You should not require a further dressing on the insertion site. You may notice some bruising or discolouration at the site, this is not unusual
- You are advised to keep the insertion site clean and dry. Please avoid using talcum powder and lotions
- Avoid any heavy lifting and manual work for 1 week
- Do take pain killers if you feel that you require them
- If you have had an **Angioseal**, please carry the angioseal card with you for 90 days (3 months)
- The DLVA states you should not drive for 1 week
- It is advisable to let your car insurance company know that you have had the procedure – if you don't, you may not be covered in the event of an accident
- It is also advisable that you **do not fly for at least 7 days** after your procedure. Please remember to check with your travel insurance company and flight provider that you are covered for your heart condition
- Also let your airline know in case there are any travel restrictions

Please contact us on the number provided if you have any concerns or need further advice.

Patient Information

If you have any undue swelling in the groin or wrist area, or a lot of oozing from the insertion site, please contact either:

Cardiology Unit

Tel: 024 7696 5661 or 024 7696 5765

Ward 21

Tel: 024 7696 8232 or 024 7696 5780

If bleeding occurs from the catheter insertion site, apply direct pressure to the groin or wrist and call an ambulance immediately.

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The Trust has access to interpreting and translation services. If you need this information in another language or format, please contact 024 7696 5767 or 024 7696 5592 and we will do our best to meet your needs.

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