

Having a Coronary Angiogram

Department of Cardiology

General Medicine

Scunthorpe General Hospital

This leaflet has been designed to give you important information about your condition / procedure, and to answer some common queries that you may have.

Introduction

This information booklet has been prepared for patients who will be having a procedure called a **coronary angiogram**, to explain what happens before, during and after this procedure, and outline the possible side-effects and risks.

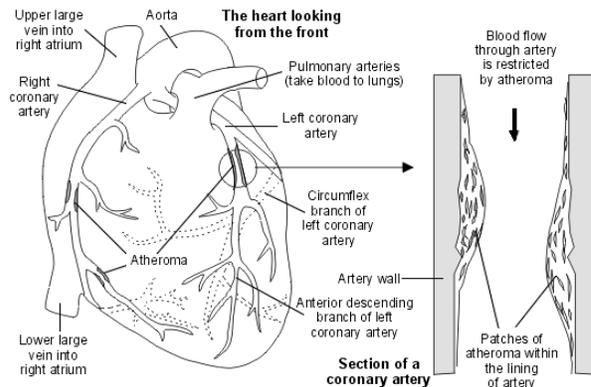
The Heart and How it Works

The heart is mainly made of special muscle and is about the size of a clenched fist. It consists of 4 chambers, 4 valves and various blood vessels (**arteries**) which supply oxygen and nutrients to the heart muscle. The heart needs these in order to function properly.

Coronary Heart Disease

Coronary Heart Disease is extremely common in western society, affecting millions of people each year. The narrowing of the arteries is caused by a gradual build up of a fatty substance (**cholesterol**) known as atherosclerotic plaques, within the artery wall (this is similar to water pipes which get "furred up" with scale). Over a number of years enough narrowing will develop in one or more of the arteries to cause symptoms of angina.

In order to make an adequate diagnosis of Coronary Heart Disease, your Doctor may decide that you need a coronary angiogram.



The risk factors for Coronary Heart Disease are:

- a family history of heart disease
- diabetes
- high blood pressure
- smoking
- high cholesterol
- stress
- being overweight
- lack of exercise

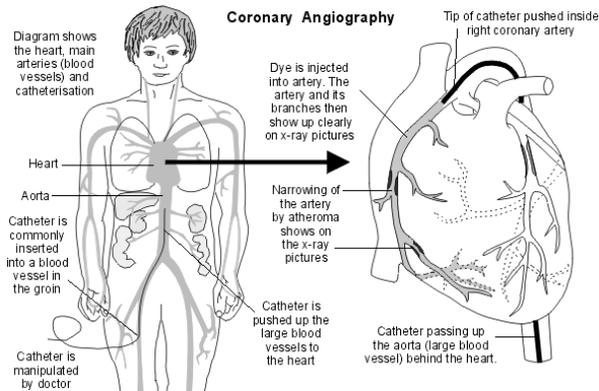
Whatever the result of your angiogram, now is a good time to think about your personal risk factors. The Specialist Nurse or Doctor will discuss your case with you and may even recommend lifestyle changes.

Coronary Angiogram Procedure

What is A Coronary Angiogram?

A coronary angiogram is a special type of x ray of the coronary arteries to evaluate certain types of heart disease. These arteries do not show up on ordinary x-rays, so a long flexible hollow plastic tube (called a '**catheter**') is inserted into a blood vessel either in the groin or wrist, and gently

advanced towards the heart. Special dye (called '**contrast medium**') is then injected into the arteries and their smaller branches can be clearly seen on the x-ray (it looks "like a road map").



Why Have A Coronary Angiogram?

One of the problems with many tests on the heart is that it is difficult to see well because it lies behind the ribcage. A coronary angiogram has the advantage that it can look inside the arteries and show exactly where there is any narrowing or blockage and show how severe this is. Depending on which ventricle is tested it is also possible to see how well the heart is pumping blood and if there are any leaking heart valves. All this information can help the Doctor decide on what treatment, if any, is most appropriate for you.

Pre-Assessment

Before you have your angiogram you will be asked to attend for a pre-assessment appointment at the Planned Investigations Unit (see attached map on Page 9). You will be seen by a Nurse who will go through a list of questions about you and your health, including any allergies you may have.

Routine blood and MRSA samples will be taken along with heart recordings (an '**ECG**'), and you will need to bring along a list of any medications you are taking.

You will be given a date for your angiogram at your pre-assessment. As you will not be able to drive home after the angiogram you will need to inform the Nurse if you require hospital transport, and she will advise you on the how to book this.

The angiogram is usually done as a day case. However you will need to let the Nurse know if you do not have a telephone at home, or if you live on your own and do not have anyone to stay with you on the night of your procedure, as arrangements will need to be made for you to stay in hospital overnight so that your condition can be monitored.

If you have a history of renal problems, or have had a previous reaction to the x-ray dye, you may need to come into hospital the day before your angiogram and possibly stay in overnight following your procedure.

If you take **Warfarin** (a 'bleeding thinning' drug) you will need to stop taking this **4 days before** the angiogram.

If you are a **Diabetic** who takes **Insulin**, you will need to take $\frac{1}{2}$ your dose on the morning of your procedure. You will then be given the other $\frac{1}{2}$ after the angiogram with something to eat. Please **bring your Insulin with you on the day of your angiogram**.

If you are a **Diabetic** who takes **Metformin** tablets you need to **stop taking these the day before your angiogram**. This prevents any adverse reaction to the x ray dye. If you are worried about stopping this medication please check with your GP or discuss it with the Nurse at Pre Assessment.

Please use your Pre-Assessment appointment to ask any questions you may have.

go ahead with this. Please ask any questions you have

On the Day of the Procedure

- **Eating and Drinking.** If you are asked to report to the Planned Investigations Unit for **8.00 am** on the day of your angiogram, you can have a light breakfast (i.e. toast and a cup of tea/coffee) at 6.00 am, with nothing to eat or drink after 7.00 am
- If you are asked to report to the Planned Investigations Unit for **12 noon**, then be sure to have something light to eat and drink (i.e. soup, a roll and a cup of tea/coffee) at 11.00 am then nothing more
- Make sure someone is going to collect you from Hospital and stay with you overnight following your angiogram
- Do not wear make up, nail varnish or lots of jewellery. Valuables should be left at home as the Unit has no facilities for the safekeeping of such items
- Have a bath or shower the night before you come in
- Take all you morning tablets as usual before you come in, **with the exception of** Warfarin, Metformin and water tablets (Frusemide, Bumetanide, Amiloride, Frumil)
- Please bring in any medication you are taking at the time. This may be changed following the angiogram
- It may be necessary to do some additional blood tests upon arrival, and you will also be asked to sign a consent form to confirm that you understand the procedure you are to have and agree to

Where will the Angiogram Take Place?

The angiogram is carried out in a special screening room (called a 'Lab') within the Hospital's X Ray Department.

How Long Will The Coronary Angiogram Take?

An angiogram usually takes approximately 30 minutes, but you should not be alarmed if it takes longer than this.

How is the Angiogram Done?

Once in the Lab, you will be asked to lie on a special table that has a special x-ray machine mounted above. A Technician will attach some small stickers onto your leg and back to enable your heart rate and rhythm to be monitored throughout the procedure.

A Nurse will ask you to rest your arms on top of your chest whilst your groin/wrist (depending on where the catheter is to be inserted) is cleaned with a cold antiseptic solution. You will then be covered from your chin down to your feet with a blue sterile sheet/drape; it is important that you do not put your hands on top of this sheet.

The angiogram then begins with the Doctor injecting a local anaesthetic to numb the area where the catheter is to be inserted. This may cause a slight stinging or burning sensation which will only last for a few minutes before that area feels numb. A needle is then inserted into your artery along with a small flexible sheath. You may feel

some pressure at top of your leg/wrist whilst the Doctor is doing this, but it should not be painful. If the Doctor has decided to use your wrist he may inject some medication through the sheath which will make your hand feel very warm/hot, but this feeling will only last a few seconds.

The Doctor then gently guides the catheter up through the blood vessels towards the heart with the aid of the x-ray images. The tip of the catheter is gently manipulated into the correct position just inside a coronary artery and the dye is then injected and a series of x-rays taken; these show the vessels filling with blood and the sites of any narrowing or blockages can clearly be seen. You will not be able to feel the catheter moving around inside your chest, but you may be aware of the occasional 'missed' or 'extra' heartbeat.

It is important that throughout your angiogram you keep as still as possible. If you do need to move or are uncomfortable at any time please ask the Nurse who is with you in the Lab to help. Some people do get chest pain during the procedure; this does not mean anything is wrong but you should inform the Doctor immediately.

The final part of this procedure is when the catheter is passed into the last chamber of the heart so that the Doctor can evaluate the pumping function and see if the valves are working correctly. As the dye is injected during this part of the procedure you will have a warm flushed sensation, which some people find unpleasant. You may feel as though you have 'wet yourself' but you have not so please do not be embarrassed. This feeling only lasts for a few seconds, and the Doctor will warn you when this will happen. Once the procedure has been completed the

catheter will be removed, but the sheath in your groin/wrist will still be in place.

The Doctor may decide to put a plug (called an '**Angioseal**') in when removing the sheath to stop any bleeding before you are taken back to the Recovery Area. If an Angioseal is not put in then you will be carefully moved onto a trolley and taken to the Recovery Area where a Nurse will assess you and remove the sheath by applying a pressure device and monitor you for about 20 minutes before you are moved back to the Planned Investigations Unit.

If the catheter was put into your wrist then the sheath will be removed before you leave the Lab and a '**TR**' **Band** (which looks like a large wrist watch) will be put on your wrist. You will then be taken through to the Recovery Area for about 20 minutes before you are moved back to the Planned Investigations Unit. Some people do feel a bit tired for a few hours after the angiogram.

After the Angiogram

If the catheter was inserted in your groin, you must lay flat for at least one hour after you have had the angiogram to reduce the risk of bleeding. You will be offered something to eat once you are able to sit up.

If you have the angiogram done via your wrist then you will be able to sit up in your bed/chair straight away and have something to eat and drink.

Regular checks will be made on your blood pressure, pulse and the puncture site (where the needle and sheath were inserted).

You will be encouraged to drink as soon as possible after the angiogram, as this helps flush the dye from your body.

If the angiogram shows that:

- everything is normal or only mildly diseased then nothing **may** need to be done
- there is a narrowing or blockage of the coronary arteries, then a coronary angioplasty or a bypass operation may be recommended to treat this problem
- there is damage to the heart valves, then heart valve surgery may be recommended

The Doctor will usually inform you of the results of your angiogram whilst you are in the Recovery Area and discuss the course of treatment, if any, that is required. A letter will also be sent to your GP with a detailed report.

Discharge Advice

You must have transport (not public) home and there must be a responsible adult to stay with you overnight. During this time you should rest.

DO NOT DRIVE for 24-48 hours; if you were to have to do an emergency stop this may cause bleeding/a rupture at the puncture site.

You can eat and drink as normal.

It is common to get some bruising around the puncture site (which may spread down the front of the thigh, if your angiogram was done via the groin). This is not serious but it may look quite obvious for a week or so. If this area is sore for a few days then it is recommended that you take simple painkillers, such as **Paracetamol**. You should inform your GP if the area becomes red and tender as you may require a short course of antibiotics.

If your angiogram was done via the wrist you can remove the wound dressing after 24 hours, but you are advised to keep your arm in a sling for the next 48-72 hours. This is to remind you not to use your arm or drive for the next 2-3 days.

It is usual for a small lump to appear (about the size of a pea) at the puncture site. This is nothing to worry about. It should go down after a few days but if you have any concerns you should contact your GP.

Always keep the puncture site clean and dry.

Flat shoes should be worn for the next 2-3 days.

You can shower the day after your angiogram using warm water only (**not hot**). Do not rub the puncture site, dry it carefully and do not apply any creams or powder. If required you can put a plaster over the puncture site to prevent your clothes rubbing it. If you only have a bath then use warm water and do not sit in it for too long.

You should avoid any physical work for 2-3 days. If this means you require time off work you should seek advice from your GP.

You should not lift anything heavy, such as shopping bags, a vacuum cleaner, garage doors, etc, for at least 3 days. Lifting can cause sudden bleeding from the puncture site.

If your angiogram was done via your groin, then for a day or two after your procedure, when bending and getting in and out of a chair, bed or bath - or even when coughing or laughing - it is advisable to support your puncture site by applying firm pressure with your hand.

If you experience coldness, blueness, numbness or pain in the leg on which the angiogram was performed then come into A&E as a matter of urgency.

There can occasionally be slight oozing of blood through the dressing. This is nothing to worry about. If the dressing does become soaked with blood but the bleeding is not excessive then contact NHS Direct on 0845 4647.

If you have any excess bleeding (gushing/squirting) from the wound site lay down flat, and get whoever is staying with you to apply firm downward pressure to that area and ring 999 for an ambulance explaining that you are bleeding from an artery.

You may resume sexual relations after 2-3 days if it is comfortable for you.

If after discharge you experience any problems, or have any questions regarding your recovery, please contact your own GP or NHS Direct on 0845 4647 for further advice. You can also contact the Interventional Cardiology Clinical Nurse Specialist at Scunthorpe General Hospital between the hours of 8.00 am and 5.00 pm on (01724) 282282, Bleep 2012.

Restarting Medication after an Angiogram

You can take your usual medication, unless specifically told not to.

Warfarin therapy can usually be restarted 1-2 days after your procedure, providing there have been no problems with bleeding or large surface bruising around the puncture site. The Doctor/Nurse will discuss this with you prior to discharge.

Diabetics on Insulin can take this as normal. If you take **Metformin** you will need to have a blood test 48 hours after the angiogram before you can restart these tablets. You will be given a blood request form upon discharge; you can come to the Hospital to have the blood test done or go to your GP's Nurse, whichever is most convenient for you. You must then contact the Diabetic Centre on (01724) 290104 to get these blood results and advice on when to re-start your Metformin.

What are the Side Effects or Risks?

Despite the possible risks, the angiogram is normally very safe and is carried out with no significant side effects.

The most common side-effects of an angiogram are:

- Bruising forming under the skin where the catheter was inserted
- A small risk of clotting in the veins of the legs ('**Thrombosis**') with clots passing to the lungs ('**Embolism**'). The Nurses will monitor your condition for any signs of this
- Bleeding or swelling ('**Haematoma**') where the catheter was inserted. The Nurses will monitor your condition for any signs of this
- Some people can have an allergic reaction (usually very mild) to the x ray dye, which develops in the form of a rash or chesty cough. The Nurses will be able to treat this should it occur

Serious complications are very rare, but it would be wrong to give the impression that investigations such as this can be carried out on patients without any risk at all.

The Doctor responsible for your care will be satisfied that the benefits of you having this angiogram far outweigh the risk of you having a serious complication during the procedure (such as damage to the coronary artery – less than 1 in 1000 cases – or a heart attack, stroke or in very extreme cases death - 1 in every 700 cases). The level of risk will vary depending on your overall health and your individual heart condition, but mainly relates to those patients who are in their older years (i.e. over 70 years of age) and those who already have serious heart disease.

What are the Alternatives?

If you decide you do not wish to have an angiogram you will continue to be treated by your GP/Hospital Doctor. However, should you decide at a later date that you do want to have this procedure you should inform your GP/Hospital Doctor (if you are still under his care).

Contact Details

Planned Investigations Unit, Scunthorpe General Hospital – (01724) 387969

Interventional Cardiology Clinical Nurse Specialist – (01724) 282282 Ext: 5798 / Bleep 2012

Patient Flow Co-Ordinator (Cardiology) – (01724) 282282 Ext: 3436 / Bleep 2231

NHS Direct – 0845 4647

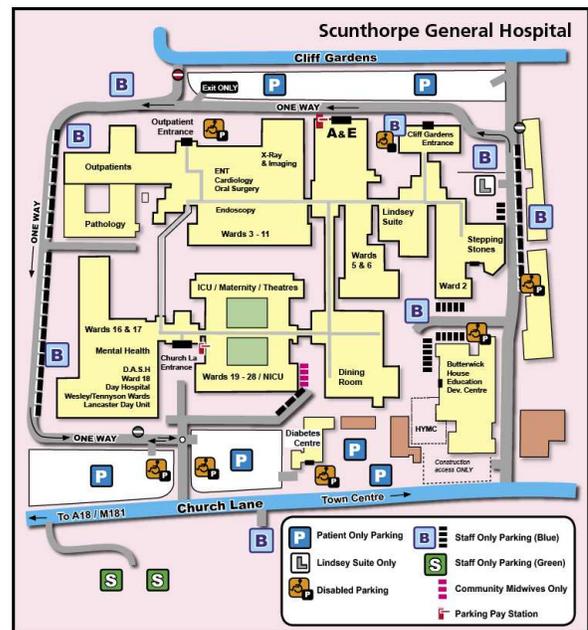
How to Find the Planned Investigations Unit

The Planned Investigations Unit is located on **Level D, above the A&E Department** on the

Cliff Garden’s side of the Scunthorpe General Hospital site.

Please **DO NOT** go through A&E. There is the Cliff Gardens Entrance just before that which should be used, and from this entrance you will need to go to the lifts/stairway between A&E and the X-Ray/Imaging Department. Then go up to Level D. Once on the main corridor, turn left and the Planned Investigations Unit is the first Unit you come to on the right hand side.

If you are not able to park at Cliff Gardens side of the Hospital, come in via the Church Lane entrance and follow the signs for A&E, then refer to the directions above.



References

Diagrams on pages 2 & 3 - (c)EMIS 2010, as distributed at <http://www.patient.co.uk/health/Coronary-Angiography.htm>, used with permission.

Concerns and Queries

If you have any concerns / queries about any of the services offered by the Trust, in the first instance, please speak to the person providing your care.

For Diana, Princess of Wales Hospital

Alternatively you can contact the Patient Advice and Liaison Service (PALS) on (01472) 875403 or at the PALS office which is situated near the main entrance.

For Scunthorpe General Hospital

Alternatively you can contact the Patient Advice and Liaison Service (PALS) on (01724) 290132 or at the PALS office which is situated on C Floor.

Alternatively you can email:

nlq-tr.PALS@nhs.net

Northern Lincolnshire and Goole Hospitals NHS Foundation Trust

Scunthorpe General Hospital

Cliff Gardens

Scunthorpe

01724 282282

www.nlg.nhs.uk

Date of issue: August 2012

Review Period: August 2015

Author: Cardiology Flow Co-Ordinator, SGH

IFP-600

© NLGHFT 2012