

Angiogram, angioplasty and stenting



Who is this leaflet for?

This leaflet is for people who are having:

- an angiogram
- angioplasty (with or without a stent)

An angiogram (also called an arteriogram or angiography) is an investigation (test). It is often followed by angioplasty, which is a treatment for the problem.

This leaflet explains what each procedure is for, what it involves and any possible risks.

What is an angiogram?

An angiogram is a special X-ray examination of your arteries (blood vessels), which helps to find out what is happening inside them. Normally, arteries do not show up on X-rays. By injecting a special dye (called contrast medium) into an artery through a catheter (a fine plastic tube), and taking X-rays immediately afterwards, pictures of arteries and veins can be seen.

Why do I need it?

Your doctors feel that you may have a problem with part of your circulation. While other tests you may have can provide useful information, in your case it is felt the best way to look closely at your blood circulation is by having an angiogram.

The angiogram may show some stenosis (narrowing) or occlusion (blockage) in your legs or other parts of your body. It may be possible to treat the affected blood vessel by angioplasty (and possible stenting) on the same visit as your angiogram. If the radiologist thinks this may be possible it is important that you understand more about angioplasty; please read the angioplasty and stenting section later in this leaflet (see page 6).

Are there any alternatives?

This will depend on why you have been referred for the procedure. One alternative is an ultrasound examination, but this lacks the detail provided by an angiogram.

What will happen if I don't have the angiogram?

Your doctor may not be able to identify and possibly treat the cause of your symptoms. If you have any concerns, please feel free to discuss these with your doctor.

Who will be doing the procedure?

A specially trained doctor called a radiologist, who is skilled in using X-ray equipment and understanding the images produced.

Radiographers are staff trained to use all the X-ray equipment. They may assist the radiologist to find out what is happening to your blood vessels.

Where will the procedure take place?

This will be done in the Interventional Radiology Suite, in the specially designed angiography room. If you need an angioplasty, this may be carried out (with your consent) immediately following your angiogram by the same staff, in the same place.

How do I prepare for it?

In order that you receive the most suitable care it is important that you telephone (01872) 252285 if you:

- live alone
- take Warfarin or any medication to thin your blood
- take Metformin or Glucophage tablets to control your blood sugar level.

On the day of your procedure

You will usually come in to hospital on the day of your procedure. However, if angioplasty treatment is needed, you may need to stay in hospital overnight so please come prepared with an overnight bag.

When you arrive, the nurses will ask you some questions and admit you to the ward. You will have your blood pressure and pulse taken, and a cannula (small plastic tube) put into your arm. A blood sample may also be taken.

If you take any medication, please bring a list of them with you. If you have any allergies, please let the staff know. You will be asked to put on a hospital gown and taken to the Clinical Imaging department in your hospital bed.

In the Clinical Imaging department, a nurse or radiographer will check your details. The radiologist will explain the procedure to you, and answer any questions you may have.

You will be asked to sign a consent form on the day of your procedure. If you wish to discuss this further, please phone 01872 252285 to speak to a member of the radiology team.

If you need an angiogram as an emergency, then there may be less time for discussion, but you should have enough time and information to make up your mind before signing the consent form.

What does an angiogram involve?

- 1 You will lie on an X-ray table. You need to be quite flat for this (if you think that you will not be able to lie down with only one or two pillows please let the staff know).
- 2 A nurse will attach a blood pressure cuff to your arm, some sticky pads to your chest and a finger probe to monitor you during the procedure (this is painless).
- 3 When the radiologist is ready, the nurse will expose your groin (or possibly your arm) to allow this to be cleaned with antiseptic solution (this can feel cold for a few seconds). A sterile theatre sheet will then cover most of your body.
- 4 The radiologist will numb your skin over the groin area with local anaesthetic. A small incision (cut) is made into your groin and a needle inserted into your artery. A guide wire is then passed through the needle and into the artery.
- 5 You will see the X-ray equipment moving over your body. This will not touch you but may come close to your body. This is to make sure the guide wire is in the correct position. The X-ray table may be moved to allow for better positioning.

- 6 A catheter (small plastic tube) is placed over the wire once the needle is taken out.
- 7 Once the wire and catheter are in the correct position, the wire is removed. The contrast medium is injected through the catheter, and X-rays are taken.
- 8 Once all the X-ray pictures have been taken, the radiologist will explain the results to you, and either:
 - go ahead and treat the condition with angioplasty (with or without stenting - see page 6), or
 - stop the examination at this point.
- 9 At the end of the procedure, the catheter is removed and the radiologist will press quite firmly on your groin (or arm) where the cut in your artery was made for about 10 minutes. This is to stop any bleeding.

Will I have any pain or discomfort?

When the local anaesthetic is injected, it will feel like a bee sting to begin with, but this soon wears off. After a few minutes the area should feel numb. If you do feel any discomfort, let the nurse know and it may be possible to have some painkillers through the cannula in your arm.

When the contrast medium is injected, you may feel this as a warm flush in your body and you might also get the feeling that you have passed urine. Don't worry; this is a very common feeling, but you won't actually have passed urine.

How long will it take?

Every patient is different. For example, if you are having an angiogram of your legs, it may take less than an hour. If you are having an angiogram looking at smaller blood vessels, it may be more complex and take longer. As a guide, expect to be in the department for about an hour and a half.

What happens afterwards?

You will be taken back to the ward on your bed. The nurses on the ward will continue to monitor your pulse and blood pressure and will check your groin or arm for signs of bleeding.

You will need to lie flat for one and a half to two hours after the procedure, followed by a further one and a half to two hours sitting in your bed before being allowed to walk around the ward or go home.

You will probably go home the same day, although you should be prepared to stay in hospital overnight if necessary.

Are there any risks or complications?

Angiography is a very safe procedure, but as with all procedures there are some possible risks and complications. There may be a haematoma (bruise) around the site where the cut in your artery was made; this is quite normal. The bruise may become large and uncomfortable, but this does not happen very often. If a large bruise does develop, it may become infected and need treating with antibiotics.

Very rarely, the catheter or wire may damage your artery, which would then need treating by surgery or another procedure by your radiologist.

If you are concerned about any of the above and would like further information about the possible risks, please ask the radiologist.

What is an angioplasty?

An angioplasty is a way of opening up an occlusion (blockage) or stenosis (narrowing) in your blood vessel without having an operation. This is done with a small balloon attached to a catheter. When the balloon catheter is moved into position inside the artery, it is inflated so that the area of narrowing or blockage is pushed open to allow more blood to flow through it.

What is stenting?

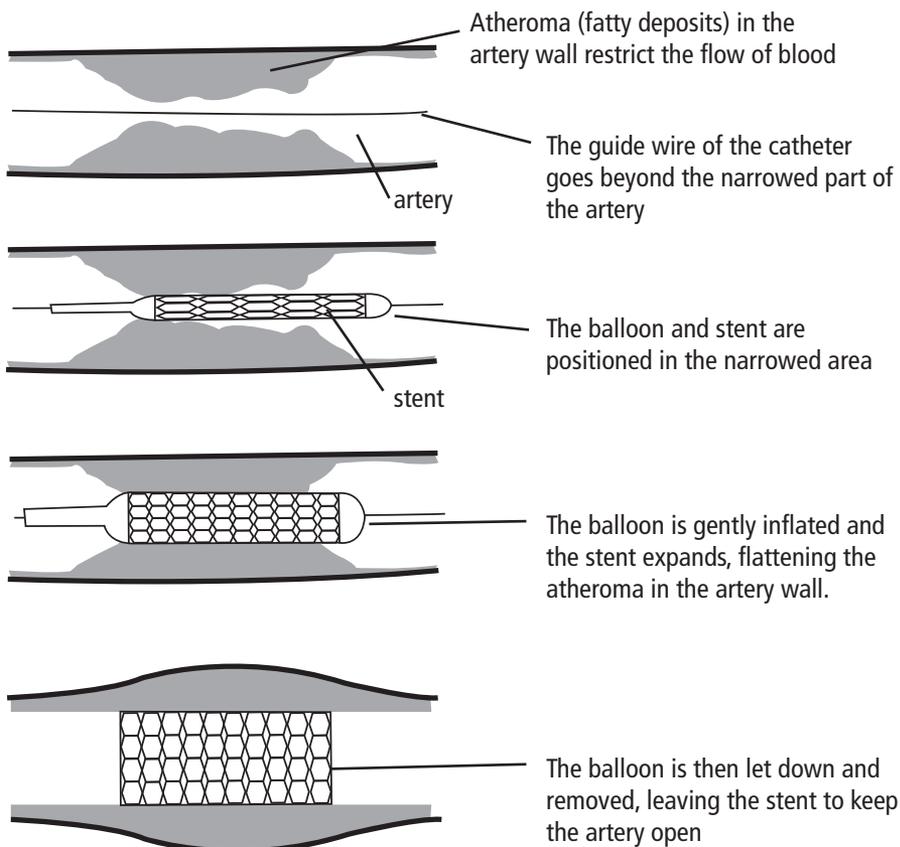
The radiologist may decide that the best way to keep your blood vessel unblocked is to insert a stent (a metal tube) into the problem area. The stent is made of fine metal mesh and is passed across the blockage to the correct place, where it is opened up. A stent helps to hold open the artery and remains inside your artery when the balloon, catheter and guide wire are removed.

Why do I need an angioplasty/stent?

You may have previously had other examinations such as ultrasound or an angiogram, which have found you have a narrowing or blockage in one or more of your arteries. In order to widen (or unblock) your blood vessel, your doctors have suggested that you might benefit from an angioplasty. You may also benefit from having a stent; if this is the case, your radiologist will discuss this with you.

How do I prepare for an angioplasty/stenting?

An angioplasty is always carried out immediately following an angiogram. (If you are given an appointment for an angioplasty, you will always have an angiogram first.) This is because the angiogram allows the radiologist to look at the blood vessel to be treated and see the most up to date information.



This means that for both angiogram and angioplasty:

- the preparation is the same
- the same staff will be involved
- both procedures will be carried out in the same place.

Please refer to the earlier sections on angiogram for more information.

What does angioplasty/stenting involve?

- 1 As with an angiogram, a guide wire and catheter are passed along the affected blood vessel through an incision (cut) in your groin, and contrast medium is then injected to see where the blockage is.
- 2 A small balloon attached to a catheter is carefully positioned in the problem area.
- 3 The radiologist then inflates the balloon to open up the blockage or narrowing, allowing more blood to flow through your artery. The balloon may be left inflated for a minute or two so that the blockage is pushed open.
- 4 If a stent is used, it will be positioned carefully within the blockage and then expanded to the correct size using the balloon.
- 5 The guide wire and balloon are removed.
- 6 A further angiogram is performed to compare the difference in the level of blood flow through the previously blocked area ('before' and 'after').
- 7 The catheter is then removed and the radiologist will press quite firmly on your cut for about 10 minutes to stop any bleeding.

Will I have any pain or discomfort?

When the local anaesthetic is injected, it will feel like a bee sting to begin with, but this soon wears off. After a few minutes the area should feel numb. If you do feel any discomfort, let the nurse know and it may be possible to have some painkillers through the cannula in your arm.

You may feel the balloon inflating in your artery. This can feel like bad cramp, but will soon pass once the balloon is let down after a minute or two.

How long will it take?

Every patient is different. For example, if you are having an angioplasty/stenting of your legs, it may take about one and a half hours. If you are having an angioplasty/stenting of smaller blood vessels, it may be more complex and take longer. As a guide, expect to be in the department for about two hours.

What happens afterwards?

You will be taken back to the ward on your bed. The nurses on the ward will continue to monitor your pulse and blood pressure and will check your groin for signs of bleeding.

You will need to lie flat for between 1 and 4 hours. After that you will need to stay in bed for between 1 1/2 and 8 hours depending upon what you have had done. Most patients go home the same day but some will be required to stay overnight.

Are there any risks or complications?

Angioplasty and stenting are very safe procedures, but as with any procedure there are some possible risks and complications. There may be a haematoma (bruise) around the site where the cut in your artery was made; this is quite normal. The bruise may become large and uncomfortable, but this does not happen very often. If a large bruise does develop, it may become infected and need treating with antibiotics.

Very rarely, the catheter or wire may damage your artery, which would then need treating by surgery or another procedure by your radiologist.

Sometimes it is not possible to move the guide wire through an area of blocked artery. In this case the radiologist will inform you of this and discuss with you any alternatives that may be possible.

If you are concerned about any of the above and would like to know further information about the possible risks, please ask the radiologist.

When can I resume normal activities?

You should be able to return to your usual activities within two days unless you experience any pain or discomfort. If you have any questions or concerns please contact your doctor.

Further information

If you have any questions, please contact us on 01872 252285.

Remember to let us know if you:

- live alone
- take Warfarin or any medication to thin your blood
- take Metformin or Glucophage tablets to control your blood sugar level.

Finally...

This leaflet should answer some of your questions, but remember this is only a starting point for discussion about your treatment with the doctors looking after you. Please make sure that you have received enough information about your procedure before you sign the consent form.

Angiogram, angioplasty and stenting are considered to be very safe procedures. They are designed to improve your medical condition and save you from having a major operation. As with all procedures, there are some slight risks and possible complications. However, these are usually minor and do not happen very often.

If you would like this leaflet in large print, braille, audio version or in another language, please contact the General Office on 01872 252690

