

Angiography

Consumer Information

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What is Angiography?

Angiography is the imaging of blood vessels after a contrast medium has been injected into the bloodstream that shows up on live X-ray pictures. A liquid contrast agent (sometimes called contrast medium – see [Iodine-containing contrast medium \(ICCM\)](#)) is injected into an artery or vein. This increases the density of the blood in the vessels and allows a clear X-ray image or picture.

Angiograms are a special kind of x-ray picture that shows what is happening inside the blood vessels. They help show blood vessel abnormalities such as stenosis (narrowing), occlusion (blockage), or bleeding.

Angiograms also may be performed to guide treatment. After inserting a tiny plastic tube into a blood vessel to make the angiogram pictures, this same tube can be used to place a tiny balloon into the artery, if it is too narrow, to widen it and allow normal blood flow. This procedure is called angioplasty. Occasionally a stent (a tiny piece of metal tubing) might be put inside the narrowed area along with the balloon to keep the blood vessel open.

How do I prepare for Angiography?

Preparations for an angiogram will depend on which part of the body is to be examined. However there are general preparations required as well.

General preparation for an Angiogram

1. Fast (go without food) for 4 hours prior to the angiogram. Fasting may avoid vomiting of food which can enter the lung in cases of reaction to contrast medium used during the angiogram.
2. Arrive at the hospital or radiology practice before the scheduled time for your angiogram so that staff can obtain your medical history and information about your current medical problem, and discuss your angiogram with you.
3. If you have a history of kidney disease, you have previously had an allergic reaction to contrast medium, you suffer from any other allergies or you have diabetes you must tell the medical staff when you make the appointment and when you attend for the

procedure to ensure that the contrast medium can be safely given.

4. If you are currently taking metformin, antiplatelet or blood thinning medications, you must inform staff both at the time of booking your angiogram and medical staff immediately before the angiogram.
5. Bring with you all your usual medication(s) or list of medications.
6. Bring with you if possible, any relevant films or CDs containing your previous imaging (this could be a previous angiogram, X-ray, CT scan, Ultrasound or MRI).

Make arrangements with a relative or friend to drive you home after the angiogram because you will usually have had anaesthetic so you are asleep for the angiogram or sedation to relax you.

What happens during Angiography?

During the procedure, you will be lying on an angiographic table in the angiography suite of a hospital or private radiology practice, which is a special operating theatre with X-Ray equipment. A specialist doctor will perform the procedure you are having under angiography, using X-ray pictures to find the abnormal blood vessel(s) and treat them.

Your heart beat, breathing, blood pressure, oxygen levels and other vital functions will be monitored during the procedure.

You may be given a mild sedative to make you relax. Before the catheter is inserted, you will be given local anaesthetic to numb the area where the catheter is inserted. This injection will sting but after that you should not feel anything. Some angiography procedures will require general anaesthetic so that you are asleep during the procedure.

A needle will be inserted into an artery usually in your groin. A soft catheter (thin plastic tube) will be inserted into the abnormal blood vessel through this artery and a small amount of contrast medium will then be injected into the blood vessel to make it visible on the x-ray images. A [medical imaging technologist](#) will take X-ray images during the injection of the contrast. The contrast medium will leave your body in your urine soon after the angiogram.

When X-ray pictures are being taken, you need to keep very still so the pictures are clear and you may be asked to hold your breath for a few seconds at a time.

The technologist performing the scan and the [radiologist](#) (specialist doctor) performing the procedure will explain to you what will happen during the particular angiogram you are having and what they want you to do and you can expect at various times during the whole procedure.

Are there any after effects of Angiography?

After the treatment you will usually be taken to a recovery room and be observed and monitored by medical staff, especially if you have had a general anaesthetic and been asleep during the procedure.

You may experience a brief hot flush or a burning sensation (lasting a few seconds) in the area being imaged.

There could be some bleeding (haematoma) from the puncture site where the catheter was inserted. To stop the bleeding either:

- a member of the medical staff will firmly press on the puncture site for about 10 minutes and you will then be moved to a bed where you will lie flat for about 4 hours;
- a staple or stitch will be used to close the puncture wound and you will then be moved to a bed where you will lie flat for about 2 hours.

You will be allowed to eat and drink after the angiogram.

Occasionally you may need to be admitted to hospital overnight. This is usually because of one or more of the following things:

- other health problems you may have that require longer observation following angiography,
- you live a long way from the hospital or clinic
- there are problems during or after the procedure that require treatment or observation in hospital.

How long does Angiography take?

Angiography will usually take less than an hour to perform. If it is combined with another procedure such as angioplasty or embolisation the procedure time will be longer.

You may be required to stay for 4 hours after the test. If a staple or stitch was used to close the puncture wound where the catheter was inserted, a shorter recovery time is required.

The majority of angiography is performed as a day procedure.

What are the risks of Angiography?

X-ray imaging

X-ray imaging does have risks because it is a form of radiation and must be used carefully by trained professionals to decrease the risks involved (see [Radiation Risk of Medical Imaging for Adults and Children](#)). The doses of radiation are small and the risk must be balanced against the benefits to the individual patient from having angiography.

Contrast medium

Iodine contrast medium is required and there is a very small risk of allergic reaction. This ranges from itchiness to a rash, to breathing difficulty and, rarely, to death. It is very important to tell the

medical team if you have had an allergic reaction to contrast medium in the past or have allergies to any foods or substances before having the angiogram (see [Iodine-containing contrast medium \(ICCM\)](#)).

Bleeding or bruising

Bleeding (haematoma) occurs in less than 5% of angiograms. This is usually seen as a raised bruise at the site, usually the right groin, where the catheter is inserted. In most cases this is not serious and will disappear after a few weeks. 1 in 100 people having angiograms will require observation in the hospital overnight and less than 1 in 500 to 1000 will require another procedure, surgery or blood transfusion due to bleeding.

If you discover a rapidly enlarging bruise where the plastic tube was inserted into the artery (usually in your groin) while you are resting in hospital immediately after the procedure, push on the area firmly and notify the medical or nursing staff. This is very unlikely to happen after leaving the hospital or radiology practice where you had the procedure. If you have left the facility and think this is occurring, push firmly on the area and contact either staff from the practice or hospital where you have had the angiogram, or your local doctor. If it is night time or a weekend, you may need to contact your local emergency department for advice about what to do.

In less than 1% of cases the procedure may damage the blood vessel, either through damaging the lining of the vessel causing blockage (dissection), or from blood clot or other type of blockage, e.g. plaque forming in the vessel (thromboembolism). This will be noticed by the doctor at the time of angiogram and may require a further procedure to fix the problem. You will be told about this at the time of the angiogram. Frequently no further action is required.

What are the benefits of Angiography?

Angiography is a test used to determine if the blood vessels are a cause of your specific medical problem. It can help in diagnosing the cause of the problem and provide information for your doctor or specialist to decide what would be the best treatment for you.

Commonly, the angiogram (with the aid of additional steps, ie balloon angioplasty for example) is used as the first step an interventional treatment of the medical problem.

The exact benefits will vary for each individual person and their medical problem.

Who does Angiography?

A specially trained team will carry out the angiogram in a specially designed room called an angiography suite. The team will be made up of trained medical staff including a [radiologist](#) (specialist doctor) who will perform the procedure, nursing staff and [radiographers](#) (medical imaging technologists) who operate the X-ray machine used to produce images or pictures that are used to guide the angiography procedure. If the angiogram is being done as the first step of an interventional treatment, a vascular

specialist doctor who may be a surgeon rather than a radiologist could be the person doing the procedure.

Where is Angiography done?

Angiography is performed in a specifically designed room called an angiography suite. This room is similar to an operating theatre and is also a sterile (germ free) environment. A purpose built X-ray machine is used to perform and record the angiogram whilst you lie on a special table. There are also machines present to record your blood pressure, pulse rate and other vital signs.

When can I expect the results of my Angiography?

The angiographic pictures are seen by the radiologist at the time of performing the procedure and these may be explained to you during or at the end of the procedure.

The time that it takes your doctor to receive a written report on the test or procedure you have had will vary, depending on:

- the urgency with which the result is needed
- the complexity of the examination
- whether more information is needed from your doctor before the examination can be interpreted by the radiologist
- whether you have had previous X-rays or other medical imaging that needs to be compared with this new test or procedure (this is commonly the case if you have a disease or condition that is being followed to assess your progress)
- how the report is conveyed from the practice or hospital to your doctor (in other words, email, fax or mail)

Please feel free to ask the private practice, clinic, or hospital where you are having your test or procedure when your doctor is likely to have the written report.

It is important that you discuss the results with the doctor who referred you, either in person or on the telephone, so that they can explain what the results mean for you.

Useful websites about Angiography:

- Society of Interventional Radiology
<http://www.sirweb.org/patients/angiography/>

Please note:

This information is of a general nature only and is not intended as a substitute for medical advice. It is designed to support, not replace, the relationship that exists between a patient and his/her doctor. It is recommended that any specific questions regarding your procedure be discussed with your family doctor or medical specialist.

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