

Having a diagnostic catheter angiogram

This information leaflet will explain what an angiogram is and why you have been sent for one. Please read this leaflet carefully. If you have any questions or concerns not answered by this leaflet, please contact the Interventional Radiology (IR) department (details at the end of this leaflet).

What is a catheter angiogram?

An angiogram is a high resolution picture of your arteries, performed using a colourless dye and an x-ray machine. Arteries carry blood away from your heart to the rest of your body. Many diseases can affect arteries, leading to narrowings or blockages. These narrowings can cause symptoms and sometimes be fatal, depending on the artery involved. By clearly identifying where and how severe the blockages are, your doctor will be able to advise you on what treatment may be necessary.

Arteries run all around the body. By injecting an x-ray dye, called contrast, the arteries can be clearly seen in x-rays. Today, most angiograms are performed in the CT or MRI scanners after injecting the x-ray contrast. However, in some cases the arteries are not clearly seen (eg due to metal implants). A catheter angiogram is a minor invasive procedure to get good quality angiogram images.

Catheter angiograms are invasive diagnostic procedures performed in the Interventional Radiology (IR) Department, using a catheter (special plastic tube) inserted into the artery of interest. The IR doctor can steer the catheter inside the arteries, so that they can reach any artery in the body via the groin, or occasionally via the arm.

Who are Interventional Radiology?

Interventional radiologists are specialised doctors who perform procedures all over the body. Interventional radiologists use different imaging machines, such as x-ray or fluoroscopic guidance to show them exactly where to go inside the body. Using x-ray or fluoroscopy avoids the need for large surgical incisions. It is also very safe, as important structures can be clearly seen in real time.

IR doctors work in a team along with specialist IR nurses and radiographers. The whole team will look after you during your angiogram and recovery.

What are the benefits of having a catheter angiogram?

A catheter angiogram will allow your arteries to be clearly visualised. This will help your doctor to decide which, if any, treatments will be best for you.

What are the risks?

Catheter angiograms are very safe procedures, performed on a regular basis by IR. Occasionally, some patients have an allergic reaction to the x-ray contrast. This reaction is usually minor, for example a skin rash, which will clear up on its own. Occasionally, it can be a more serious allergy to the dye, which can be treated by the doctor. It is important to tell the IR doctor or nurse if you have had a previous allergic reaction to iodine or if you have any other allergies. If you are allergic to x-ray contrast, other options are available.

The iodine in the x-ray contrast can affect renal (kidney) function in people whose kidneys are already damaged. A routine blood test will be performed before your angiogram to check your renal function, and if your kidneys are damaged, then the IR doctor may prescribe you some hydration into the vein before and after your procedure, or use a harmless gas as the x-ray dye.

Significant complications are very rare. A catheter angiogram is a short, day case procedure. Most patients do not need to stay in hospital for this procedure, unless there are other reasons, and are observed for four hours after their angiogram before being discharged to go home.

The IR doctor needs to make a tiny cut in your artery, usually at the groin. This cut will be controlled either by external pressure or by using a specially made closure device (like a “plug” for the hole) at the end of the procedure. A small bruise at the entry site is usually the only sign. Occasionally, the artery will continue to bleed, and if this happens then you will require further treatment to stop the bleeding. This is usually performed by the interventional radiologist. Exceptionally, surgery may be needed.

Are there any alternatives?

Sometimes an angiogram can be performed without the need for cutting into the artery by using CT (computerised tomography) or MRI (magnetic resonance imaging). This is called CTA or MRA. However, these scans are not suitable for all patients. Catheter angiogram is the best option if non-invasive tests like CT, MRI or ultrasound have identified a potential problem or their results are unclear.

Before your procedure

We will arrange for you to have some simple blood tests. The IR doctor needs to see a list of all of your medications (tablets, inhalers, creams), so please bring a copy of your current prescriptions with you.

Sometimes, certain medicines need to be stopped before your procedure. The IR doctor or nurse will be able to advise you whether you need to stop any medicines. These medicines can be restarted after your angiogram – but the IR doctor or nurse will advise you on this.

What happens on the day of the procedure?

- Do not eat or drink anything (except non-fizzy water) for six hours before the procedure. You can drink water up to two hours before the procedure. Eating and drinking before your appointment will cause delays to your procedure.

- Please arrive 45 minutes before your appointment time to allow sufficient time for preparation. You will need to get changed into a hospital gown and the IR doctor will go through your medications again with you.
- You will be asked to sign a hospital consent form, agreeing to have the procedure. You can ask any questions that you have.
- At least one family member or friend (maximum of two please) should accompany you to the hospital and they should be able to keep an eye on you for 24 hours afterwards.
- If you come to hospital with family or friends, they can wait with you before and after the procedure. No family or friends can be with you for the biopsy procedure, but you will be with an IR nurse or doctor at all times.

Consent – asking for your consent

We want to involve you in decisions about your care and treatment. If you decide to go ahead, you will be asked to sign a consent form. This states that you agree to have the treatment and you understand what it involves. The risks, benefits and alternatives will be clearly explained, and you will be given the opportunity to ask any questions that you have.

If you would like more information about our consent process, please speak to a member of staff caring for you.

Will I feel any pain?

An angiogram is performed under local anaesthetic only (ie you are awake, but will not feel any pain). The local anaesthetic is injected into the groin at the start of the procedure. It will sting for a few seconds, then go numb. The procedure should be pain free, though occasionally you may feel the radiologist pressing on your groin, particularly at the end of the procedure.

If you feel any discomfort, please tell the nurse so that you can be given pain relief. You may have a warm sensation when the dye is being injected into your artery, but this is not painful and wears off fairly quickly.

What happens during the angiogram procedure?

- You will be taken into the sterile IR catheter lab by the nurse. This is a special operating theatre with a large x-ray machine over the table. The x-ray machine (called a “C-arm”) will move around, but will not touch you. It is strange to be awake in an operating theatre, but the staff will be there to support you. At least two nurses, a radiographer and one or two interventional radiologists will be with you at all times.
- The angiogram procedure is usually performed under local anaesthetic only (ie you are awake). However, you will feel minimal pain or discomfort. Stronger pain killers into the vein can be provided, if required.
- You need to lie flat on your back for the procedure. The nurses will check your blood pressure and pulse throughout the procedure and make sure that you are comfortable.
- Your groin will be cleaned with an antiseptic solution and covered with sterile drape. Local anaesthetic will be injected to numb the area and stop you feeling pain. When the skin is numb, the interventional radiologist will locate the artery in your groin using ultrasound and insert a small plastic tube. The plastic catheter used to inject the dye can then be moved painlessly through the arteries all over the body, using x-ray guidance.

- Dye is then injected into the catheter and will show up on the x-ray monitor. At intervals you will be asked to stay still or sometimes to hold your breath for a few seconds whilst the pictures are being taken. This is to stop the images blurring. The interventional radiologist can show you your angiograms so that you can understand what is causing the problem in your arteries.
- Once the procedure is complete, the radiologist removes the catheter and will press firmly on the entry site for at least 10 minutes to prevent bleeding. Sometimes a special closure device (“plug”) will be used instead.
- You will get a small dressing over the puncture site afterwards. No stitches are required.
- The procedure is very quick, but the whole procedure will take around 40 – 60 minutes.

What happens after your angiogram procedure?

- You will need to rest in the Interventional Radiology Department for usually four hours after your procedure. This is to make sure that there are no problems. The IR nurse will let you know when you can eat, drink and mobilise after your procedure. If all your checks are normal, then you can go home.
- You will need a responsible adult to take you home by car or taxi. We do not recommend using public transport, in case you feel unwell. If you need to arrange hospital transport, please call **020 7188 2888**.
- We recommend that you have an adult stay with you overnight.
- Do not drive for at least 24 hours after the procedure, and not until you feel safe to do so.
- Avoid any strenuous exercise or lifting for 48 hours after the procedure.
- Simple painkillers (like paracetamol) might be useful for any post angiogram discomfort.
- Continue with your normal medication as usual, but if you take any diabetes medications containing **metformin**, please do not take them for the next **two days**.

When will I get the angiogram results?

The interventional radiology doctor will usually let you know briefly what the angiograms show at the end of your procedure. However, a formal clinic appointment will be arranged for you to discuss the results and any subsequent treatment plan with your referring doctor.

Contact us

If you have any questions or concerns about having an angiogram, please contact the Interventional Radiology Department at Guy's Hospital on 020 7188 5576
St Thomas' Hospital on 020 7188 5479, Monday to Friday, 9am to 5pm.

For more information leaflets on conditions, procedures, treatments and services offered at our hospitals, please visit www.guysandstthomas.nhs.uk/leaflets

If you have any questions or concerns before or after you leave hospital, you can also contact the Vascular Nurse Specialist on 020 7188 0056 (Monday to Friday, 9am to 5pm).

Outside of these hours, contact Luke Ward on 020 7188 3566, your GP, or if it is urgent, go to your nearest Emergency Department (A&E).

Pharmacy Medicines Helpline

If you have any questions or concerns about your medicines, please speak to the staff caring for you or call our helpline.

t: 020 7188 8748 9am to 5pm, Monday to Friday

Your comments and concerns

For advice, support or to raise a concern, contact our Patient Advice and Liaison Service (PALS). To make a complaint, contact the complaints department.

t: 020 7188 8801 (PALS) **e:** pals@gstt.nhs.uk

t: 020 7188 3514 (complaints) **e:** complaints2@gstt.nhs.uk

Knowledge & Information Centre (KIC)

For more information about health conditions, support groups and local services, or to search the internet and send emails, please visit the KIC on the Ground Floor, North Wing, St Thomas' Hospital.

t: 020 7188 3416

Language and accessible support services

If you need an interpreter or information about your care in a different language or format, please get in touch:

t: 020 7188 8815 **e:** languagesupport@gstt.nhs.uk

NHS Direct

Offers health information and advice from specially trained nurses over the phone 24 hours a day.

t: 0845 4647 **w:** www.nhsdirect.nhs.uk

NHS Choices

Provides online information and guidance on all aspects of health and healthcare, to help you make choices about your health.

w: www.nhs.uk

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