

Radiology

Renal angiography (including angioplasty, stenting and embolisation)

You have been advised by your hospital consultant that you need to have a renal angiogram. This may also include a renal angioplasty, stent insertion or embolisation treatment. This leaflet explains all these procedures, what is involved, and what the possible risks are.

If you have any queries, please do not hesitate to ask the radiology ward staff when you are admitted. You can also contact us on 024 7696 7161.

If you feel unhappy with any part of your care within the X-ray Department, please ask to speak to a senior member of staff.

Please read this leaflet carefully to ensure you are well prepared for the examination.

Contact the X-ray department if your weight is equal to or more than 205kg (32 stone) as you may require an alternative examination.

Points to remember

- Please bring any sprays or inhalers that you are using to your appointment.
- Please leave any valuable possessions at home.
- If you are taking aspirin, warfarin or other blood thinning medicines, please inform the radiology staff, as this medication may need to be stopped a few days before your procedure.



What is a renal angiogram?

A renal angiogram is a special examination where images are taken with X-rays to show the blood vessels to the kidney.

A catheter (small plastic tube) is inserted into an artery, usually in your groin, the catheter follows the blood vessels to reach the arteries supplying the kidney.

Contrast medium (X-ray dye) is injected into the artery so that X-ray images can be taken to show the blood flow in the kidney.

The examination will be performed by a radiologist (a specialised X-ray doctor) who will be assisted by a radiographer and a radiology nurse. It is not easy to tell how long the procedure will take. As a guide, expect to be in the Radiology department for at least 1 hour.

If it is required and appropriate, the radiologist may go on to do an angioplasty, stent insertion or embolisation on the day of your appointment. However, it may be necessary to arrange this at a later date. The radiologist will discuss this with you at the time to make the best decision for you.

What is an angioplasty or stent insertion?

An angioplasty is a procedure where a small balloon on the end of a catheter is inserted into the blood vessel. The balloon is inflated to re-open a narrowed or blocked artery that has been identified during the angiogram. This technique means that surgery may be avoided in many cases.

A stent is a special device shaped like a small tubular metal cage. The stent expands in your artery to keep the blood vessel open, which improves blood flow through the narrowed vessel. If this is necessary, the radiologist will discuss this with you at the time.

To perform an angioplasty, a slightly larger catheter is used, which slightly increases the risk of bleeding afterwards. You may feel the doctor

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changing and moving catheters in and out of your groin artery. Although this is sometimes slightly uncomfortable, it should not be painful.

Why do I need an angioplasty done or a stent inserted?

An angioplasty or stent is needed when the angiogram shows that there is a narrowing or blockage in one or more of your arteries. This is usually caused by atherosclerosis (hardening of the arteries).

Arteries carry blood containing oxygen away from the heart, to feed the organs and tissues around the body. Atherosclerosis, or hardening of the arteries, is caused by a build-up of fatty deposits on the inside of the arteries. This narrows the size of the artery, which leaves less space for blood to flow through it. This means there is less blood passing through that section of artery than usual.

The angiogram will show the location and amount of the atherosclerosis in your artery. The angioplasty should re-open the narrowing in your artery. However, a stent may be necessary to keep the artery open.

What is renal embolisation?

A renal embolisation is when the blood supply to one of your kidneys is purposely stopped.

Once the radiologist has located your renal artery from the angiogram, small metal coils are inserted down the catheter and left in the artery. Over time blood clots will form around these coils blocking the blood supply to your kidney.

Why do I need a renal embolisation?

The procedure is usually done before surgery to reduce the risk of bleeding and of complications during surgery.

Referral and consent

If you are having a renal angiogram, angioplasty or embolisation as a planned procedure, then you should have plenty of time to discuss your situation with your consultant and the radiologist who will be performing the

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procedure. **You should have had a full explanation before you sign the consent form.**

If after discussion with your hospital doctor or radiologist you do not want the procedure carried out, then you can decide against it.

If the radiologist feels that your condition has changed or that your symptoms do not show a need for this procedure, they will explain this to you. They will communicate their reasons with the referring clinician and ask that you return to your referring clinician or ward for review. The radiologist and referring clinician will always be acting in your best interests.

Before the test

- Please bring all your usual medication into hospital with you.
- Please remember to take any sprays or inhalers with you when you have the procedure.
- It is important that you understand the procedure fully, including the risks and benefits. If you have any questions, please ask your doctor.
- You will be asked to sign a pink consent form confirming that you understand the procedure and are aware of the risks and benefits it entails. This will be done either on the ward before you have the procedure done, or in the Radiology department.

We will want you to be as relaxed as possible for the procedure. Take all your medication as normal. If you are taking water tablets or diuretics, you may stop this on the day of the procedure.

Please tell the doctor if:

- You have had any allergies or bad reactions to drugs or other tests
- You have asthma, hay fever, diabetes, or any heart or kidney problems
- If you are taking **metformin**, please inform the ward staff as this may have to be stopped for 48 hours after the procedure

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Preparation

You will have had some blood tests to check your blood clotting ability and kidney function.

Unless you have planned surgery on the same day, there is no need for you to stop eating and drinking before the procedure.

It is important that you drink plenty. **We advise one pint (500mls) of water or squash above your normal fluid intake.** If your surgery is on the same day, the ward will advise on when you should stop eating and drinking.

Important information for patients on a fluid restricted allowance: If you are under the care of a renal specialist and/or have to follow a fluid restricted diet, you should include this preparation as part of your fluid allowance.

- If you have severe kidney problems, you will be put on intravenous fluids (a drip) for 6 hours, starting the hour before the procedure.
- If you are taking **metformin**, please inform the ward staff as this may have to be stopped for 48 hours after the procedure.
- Some painkillers (non-steroid anti-inflammatory drugs) may have to be stopped on the day of the examination for 24 hours. Please discuss this with the nurses on the ward. Paracetamol may be used instead.

Before the examination, a cannula will be inserted into a vein in your arm.

You will need to wear a hospital gown. The porters will collect you from the ward and take you to the X-ray Department on your bed for the procedure.

Safety

The X-ray dye contains iodine and is excreted by the kidneys in your urine.

Please inform the radiologist or radiographer if:

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- You are allergic to iodine, have any other allergies, or suffer from asthma.
- You have reacted previously to the injection used for kidney X-rays or CT scanning.
- You have known kidney problems.

X-rays are a type of radiation. We are all exposed to natural background radiation every day of our lives. This comes from the sun, the food we eat, and the ground. Exposure to X-rays carries a small risk, but your doctor feels that this risk is outweighed by the benefits of having the test. We will take all precautions to minimise the X-rays you receive during the procedure.

Patients aged 12 to 55 years: the risks of radiation are higher for your unborn child. You will be asked to confirm that you are not pregnant before the examination can proceed.

During your examination

The procedure will be again explained to you by the radiologist, and you will be able to ask any further questions that you may have.

You will be taken into the X-ray room where you will be asked to lie down on your back on the X-ray table.

Your blood pressure will be monitored by a radiology nurse who will stay with you throughout the procedure.

The interventional radiologist (specialised X-ray doctor) will inject a local anaesthetic into the skin of your groin to freeze the area. You may still feel some pressure sensation, but if you feel any pain during the procedure, inform the radiologist. You will be asked to lie as still as you can.

The catheter is then inserted into the artery at the groin, using X-rays to help the radiologist move the catheter into the correct position. X-ray pictures are taken whilst the dye is injected down the catheter into the arteries. Sometimes the injection may cause a hot feeling for a short while, or the feeling that you have passed urine. This is normal.

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At this point the angioplasty, stent insertion, or embolisation treatment will be performed if needed.

At the end of the procedure, the catheter is removed. The radiologist will press firmly on the skin entry point for several minutes to prevent any bleeding. Alternatively, the radiologist may insert a small stitch (arterial closure device) into the puncture site to prevent bleeding.

Risks and benefits of the procedure

As with any procedure or operation, complications are possible. We have included the most common risks and complications in this leaflet.

The probability of these complications occurring will vary for each patient, and the possibility of these complications happening to you will be discussed with you before you sign the pink consent form.

- There can be bleeding after the procedure. The ward nurses will monitor you closely for 4 to 6 hours after the procedure. Rarely, the bleeding can be so severe that serious complications can arise. The doctor will discuss these with you when you sign the consent form.
- Rarely, the X-ray dye used for angiograms can cause a decline in kidney function. Usually, this is only temporary but occasionally it can be more long term. This is of particular concern for people who already have impaired kidney function. You will have a blood test to assess your kidney function prior to the procedure.
- Rarely, allergic reactions can occur with the X-ray dye. These only very rarely require any treatment. You will be asked about allergies by the radiologist at the time.

Despite these possible complications, the procedure is usually very safe. At all times during and after the procedure, the staff will be monitoring your responses to this treatment. This is to minimise the effects of any complications.

After your examination

You should be offered a drink in the Radiology department following your procedure if you are not going for surgery on the same day.

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You will be taken back to the ward for observations for 4 hours following the procedure.

- If a stitch was used to close the artery, then you must lay flat for the first 45 minutes. You may then sit up after 90 minutes and following this you will be allowed to move around gently.
- If a stitch was not used, then you will be asked to remain lying flat for 4 hours, so that your groin does not start to bleed. It is important that you do not try to sit up or get out of bed. You can then sit up gradually after 4 hours.

Please ensure you have drunk at least 1 pint (1/2 litre) of water on the ward within the 2 hours following the procedure.

Important information for patients with renal impairment: You will be kept on intravenous fluids for the remainder of the 6 hours. You should have a further kidney function test before you are discharged home from the ward. You may require special monitoring and referral to a renal specialist if your kidney function has decreased by 10%.

If you have any problems after the procedure, please speak to staff on the ward.

Other sources of information:

For general information about radiology departments visit the Royal College of Radiologists website: www.goingfora.com

For information about the effects of X-rays read the NRPB publication: "X-rays how safe are they?" on the Health Protection Agency website: www.hpa.org.uk

Please note that the views expressed in these websites do not necessarily reflect the views of UHCW NHS Trust or the NHS.

To speak to a member of staff, you can contact the Radiology Department via telephone on 024 7696 6300.

Patient Information

The Trust has access to interpreting and translation services. If you need this information in another language or format, please contact the number on your appointment letter and we will do our best to meet your needs.

The Trust operates a smoke free policy.

Did we get it right?

We would like you to tell us what you think about our services. This helps us to make further improvements and to recognise members of staff who provide a good service.

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www.uhcw.nhs.uk/feedback



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