

Angiography and angioplasty

Angiography is a test to show the blood supply to the kidneys. The usual way of doing this is to pass a tube up from an artery in the groin to the kidney, inject contrast material that shows up on X-rays, and outline the arteries to the kidneys.

If a narrowing (**stenosis**) in the main artery to the kidney is found, it is sometimes possible to widen it by blowing up a balloon on a tube passed into the artery - this is called **angioplasty**. Often a **stent** is inserted into the stretched segment of artery, to hold it open and slow down re-narrowing.

However not all narrowings should be treated. There are risks to treatment, and modern treatment with drugs and lifestyle alterations may be just as good or better.

How do you do an angiogram or angioplasty?

If you are definitely going to have one of these, you should read the more detailed information available from these pages:

- [More information about renal angiography](#)
- [More information about renal angioplasty](#)

The way of doing both is similar. In the X-ray department, the skin is cleaned, and an area over an artery in the groin is numbed with local anaesthetic. A tube is then pushed into the artery and up towards the arteries to the kidneys (the renal arteries). These are about half way up your abdomen. Liquid is then injected that will show up on X-ray, and X-ray pictures are taken as it flows along the artery into the kidneys.

For an angioplasty, a special tube is used that can carry a balloon to stretch the artery, or insert a stent, or use other ways to enlarge a narrowing. This will take longer than a simple angiogram.

Can there be any side effects from angiography or angioplasty?

Usually these are entirely safe and trouble-free. Occasionally there can be problems. Complications are more likely from an angioplasty, as this is more tricky, but they are still uncommon. In some people with badly diseased blood vessels, or some other diseases, the risk of complications is greater. For this

reason, it is important that you discuss your own circumstances with the doctors recommending or carrying out the test or treatment.

Risks to the artery are usually of bruising or bleeding. **Risks to the kidneys** come from blockage of the artery being investigated (it may be very narrow already), and from the effects of the injected contrast medium on kidney function - usually temporary but sometimes severe. **Risks to other arteries** may come from knocking off bits of the material that causes arterial narrowing. More information is available on our more detailed pages about angiography and angioplasty ([see above](#)).

Because of these risks, especially of angioplasty, it may sometimes be best to leave narrowed arteries alone and not do an angioplasty. Treatment of high cholesterol and blood pressure, and stopping smoking, may be enough to prevent further trouble.

Some of the things that can put you at increased risk from angiography and angioplasty are:

- Damaged kidneys
- Severe disease of the arteries to the kidneys or legs
- Diabetes

Is there a way of showing the arteries without putting a tube into them?

There are some ways of doing so-called 'non-invasive' angiography, and these are improving all the time.

Of course it is not possible to do the repair job of angioplasty without putting a tube into the artery.

Ultrasound scans, using machines that can do Doppler ultrasound, can sometimes suggest that there is a problem with the arteries to the kidney. Unfortunately this technique may be time consuming, and cannot always identify the problem. When it does, you will usually need an angiogram to prove it.

[More about ultrasound examination of the kidney.](#)

CT scanning CT scanners use X-rays to produce the pictures. Angiograms can be done on some CT scanners after injecting contrast medium into a vein. This does

not avoid the potential problems caused by the contrast medium that is injected, requires special machinery, and does not always give good pictures. Even the best pictures are not yet as good as those from an ordinary angiogram. But it avoids the need to go into an artery and can usually be done simply as an outpatient.

MR angiography Magnetic resonance imaging, **MRI**, uses a very powerful magnet and special techniques to take pictures that look a bit like CT scans. Angiograms can be done on some MR scanners after injection of something that will show up, usually a substance called **gadolinium**. Gadolinium can cause rare but serious side effects in people with kidney failure. Your doctor will balance the risks against your need for the procedure. MR angiography is improving, but is not available everywhere. These tests can usually be done simply as an outpatient.

Where can I get further information?

- [More information about renal angiography](#)
- [More information about renal angioplasty](#)

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