

# Renal artery stenosis

## What is renal artery stenosis?

It is narrowing of the artery that supplies blood to the kidneys. That might result in restriction of blood flow to the kidneys and may lead to [high blood pressure](#) (hypertension) and reduced kidney function (kidney failure).

## What causes renal artery stenosis?

In most cases it is caused by build up of cholesterol and lipid on the lining of arteries (atherosclerosis). This is the same disease that causes heart attack and angina when it affects arteries of the heart. Occasionally other things are responsible:

- In **fibromuscular dysplasia** an abnormality of the artery causes progressive narrowing of the renal artery during growth. Patients diagnosed with this condition are usually young.
- Rarely other things may be responsible. For instance damage caused by trauma to the kidneys or radiotherapy, or rare causes of inflammation such as Takayasu's disease.

## When is renal artery stenosis suspected?

Renal artery stenosis usually has no symptoms. However the diagnosis is considered when there are clues such as:

- Blood pressure is unusually difficult to control, or new, or severe in a young person.
- There is a kidney damage without evidence of kidney inflammation, but in the presence of diseased arteries elsewhere, especially in the legs (e.g. intermittent claudication, which often causes pain in the calves on walking). Signs of disease in the arteries can include a bruit (a sound with a stethoscope suggesting a narrowed artery), which may be heard over the abdomen in the case of renal artery stenosis.
- Kidneys are asymmetrical (one side shrunken, other side normal) on ultrasound or other kind of investigation. [More about ultrasound examination of the kidney.](#) Kidney asymmetry can have other causes too

though, such as [reflux nephropathy](#).

## How is the diagnosis made?

The most accurate test is renal arteriography, but it requires injection of contrast medium ('dye') directly into an artery. The dye can have side-effects, and arteriography has some risks too. [More information about renal angiography](#).

Techniques for showing the arteries to the kidney without going into arteries ('non-invasive' tests) are improving very rapidly. These include

- MRA (magnetic resonance angiography)
- CT angiography [More information](#)

## What are the treatment options?

The best treatment depends on a number of factors:

1. your overall health
2. the severity of your high blood pressure
3. your kidney function
4. the severity of the narrowing and the risks of treating it (see below)

You will need to discuss your personal circumstances with your medical team.

**Angioplasty** is stretching an artery to widen a narrowed part of it. It may be recommended but is not usually necessary.