Patient information from BMJ

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Abdominal aortic aneurysm

If you have an abdominal aortic aneurysm, the wall of your aorta (a major blood vessel) has weakened and is ballooning outwards. If the wall of the aorta gets very weak it can burst. This is very dangerous, but it usually happens only after an aneurysm has reached a certain size.

Here, we look at how aneurysms are found and monitored, and what treatments can help if there is a risk that an aneurysm will burst.

What is an abdominal aortic aneurysm?

Your aorta is the main artery that supplies blood to your body. It is about the width of a garden hose and runs from your heart down through your chest and abdomen before branching off into smaller blood vessels.

As you get older, the wall of your aorta can weaken, causing a section in your abdomen to balloon outwards and form a bulge.

The bulge is called an abdominal aortic aneurysm. You might also hear it called **AAA** or triple A.

AAAs tend to get larger over time. Most grow slowly but some get bigger quite suddenly. If an aneurysm is small when it is detected, it may never grow big enough to cause problems. But large aneurysms can be dangerous.

If the wall of the aorta gets very weak it might burst (rupture), causing massive internal bleeding. This is fatal for about 90 in every 100 people.

We don’t know exactly what causes the wall of the aorta to weaken, leading to an AAA. But certain things can make it more likely. Here are some of the most important.

- Being a man. Men are four to six times more likely than women to get an AAA.
- Getting older. These aneurysms are not common in people under age 55. But your chance of having one increases as you age. Up to 10 in every 100 men age 65 to 79 have an AAA.
- Smoking. The chance of having an AAA increases the longer you have smoked.

- Having one or more close family members (such as parents or siblings) with an AAA.

What are the symptoms?

You will probably not notice any symptoms if you have an AAA. Most people don't feel any pain or notice anything different.

But some people get pain in their abdomen, groin, or back, which can be a sign that an aneurysm may soon rupture.

Since AAAs usually don't cause symptoms, most people find out they have an aneurysm in one of two ways.

- **As an accidental finding**. AAAs are sometimes found through tests done for other reasons, such as an X-ray for another problem. They are also sometimes spotted during a routine physical examination when a doctor feels a bulge in the abdomen.

  But this usually happens only if a patient is thin and the aneurysm is large. If your doctor thinks you have an aneurysm, you will have an ultrasound scan to find out for sure.
- **Through screening**. Since older men are particularly likely to get an AAA, doctors often recommend that men aged 65 and older have an ultrasound scan to check their aorta. This is called screening.

  Women and younger men are also sometimes offered screening if doctors think they have an increased chance of having an aneurysm (for example, if they have close family members with an aneurysm).

If you are diagnosed with an AAA, your doctor will measure how large it is during your ultrasound scan. Doctors in different countries sometimes define large aneurysms in different ways. But aneurysms are often considered large if they are:

- at least 5.5 centimetres wide for men, or
- at least 5 centimetres wide for women.

What treatments work?

The main treatment for an AAA is surgery to repair it. But not everyone with an aneurysm will need surgery. This is because the benefits of having an aneurysm repaired don't always outweigh the risks of surgery.

- If your aneurysm is small and not causing any symptoms, it is not likely to rupture. So your doctor will probably recommend that you have **surveillance** instead of surgery, at least for now.

  Surveillance means having regular ultrasound scans to check on your aneurysm. Your doctor may also recommend surveillance if you have a large aneurysm but you have other health problems that would make fixing it more risky.
- If your aneurysm is large or is causing symptoms, your doctor will probably recommend having **surgery**. Your doctor will also probably recommend surgery if surveillance shows that your aneurysm is growing quickly.

Surveillance

If you have surveillance, you have regular ultrasound scans to check on the size of your aneurysm and how quickly it is growing.

How often you have a scan will probably be based on the size of your aneurysm. For example, if your aneurysm is very small, you may need an ultrasound only every two to three years. But if it is larger, your doctor may recommend having an ultrasound every six to 12 months.

During surveillance, your doctor may also recommend doing other things to help slow the growth of your aneurysm.

- Stopping smoking: Smoking is linked to faster aneurysm growth. Giving up smoking may help slow this growth. Your doctor can recommend treatments to help.
- Taking medicines. These may include medicines called beta-blockers to lower your blood pressure, and medicines called statins to lower the cholesterol in your blood.

Aneurysm repair

Repairs for AAAs aim to strengthen the section of your aorta that is bulging, to help prevent it from rupturing. There are two types of repairs and both can work well.

- **Endovascular repair**: This operation places an artificial piece of artery, called a graft, inside your aneurysm.

  Endovascular' means the surgery is done through your blood vessels, with the help of tiny tools and cameras. A surgeon makes small cuts in your groin at the top of your legs to reach large blood vessels.

  The surgeon then attaches the graft to a thin tube. He or she uses X-rays to guide the graft through the blood vessels and into the aneurysm. When the graft is in the right place, your surgeon fastens it with small hooks or pins.
- **Open repair**: In an open aneurysm repair, a surgeon makes a large cut into your abdomen to reach your aorta directly. The surgeon then cuts open the aneurysm and stitches a graft inside. The aneurysm is then closed with the graft inside.

Endovascular repair is a newer type of surgery. But it is becoming more common, as it is a smaller operation, with a faster recovery.

Sometimes, though, the graft moves or leaks after an endovascular repair, which means you will need more surgery. So doctors recommend having regular scans – such as ultrasound or CT scans – to check on these repairs.

This usually means having a scan one month and 12 months after the repair, and then every five years. Regular scans aren't usually needed after an open repair.

Both endovascular and open repairs can sometimes cause serious problems (called complications), such as heart and blood flow problems, bleeding, and infection.

To help prevent heart and blood flow problems, your doctor may recommend taking a beta-blocker in the days leading up to your surgery. You will also probably be given antibiotics during and after your surgery to prevent infection.

What will happen?

Many people never have problems from their AAA.

But if an aneurysm does rupture, the chances of survival are small. That's why it is so important to detect these aneurysms early, and to monitor them if they are small and not causing symptoms, or to have them repaired if a rupture seems more likely.

Your doctor will help you decide on the right approach for you.