

Patient information from BMJ

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Aortic stenosis

If you have aortic stenosis it means that one of your heart valves is damaged and isn't working properly. It is a serious condition but it can be treated, usually by replacing the damaged valve.

You can use our information to talk with your doctor about what treatments are right for you.

What is aortic stenosis?

The heart has four valves that regulate the flow of blood around the body. They work just like the valves in a mechanical pump. The **aortic valve** controls the flow of blood from the heart around the rest of the body.

If this valve becomes too narrow for blood to flow properly through it, the reduced blood flow is called aortic stenosis. Without treatment it can be life threatening.

Aortic stenosis is usually caused by thickening of the walls of the valve. This thickening is called **aortic sclerosis**. This happens when calcium in the blood builds up on the inside of the valve.

Over time, this build-up can lead to aortic stenosis. Both of these conditions are more common in older people.

About 25 in 100 people over the age of 65 have **aortic sclerosis**. And 2 or 3 in every 100 people over 75 have **aortic stenosis**.

Aortic sclerosis can sometimes be genetic. This means that it happens because of the genes you were born with.

But other things that make it more likely to happen are:

- being male
- being older
- smoking
- having high blood pressure

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- having diabetes
- having high LDL cholesterol (sometimes called 'bad' cholesterol)
- having chronic kidney disease.

What are the symptoms?

Many people with aortic stenosis have no symptoms, even if they have severe stenosis. But many people have symptoms, including:

- suddenly being more tired than usual after exercising
- shortness of breath after any physical exertion
- chest pain
- dizziness
- bruising easily.

If you have any of these symptoms, you should see your doctor straight away.

Even if you don't have symptoms, doctors can spot the signs of possible aortic stenosis if they hear a 'heart murmur' when listening to your heart with a stethoscope: for example, during a medical exam or check-up.

A heart murmur is the name for any unusual sound in the heart. It is often a whooshing sound, a little like when you hold a seashell to your ear. Sounds like this are a sign that blood is not flowing through your heart in a smooth, regular way.

If your doctor thinks you might have aortic stenosis, or any other heart problem, he or she will want you to have a test called an electrocardiogram, or ECG for short.

In this test, electrodes are attached to your chest with sticky pads. These electrodes can detect any unusual rhythm or abnormal electrical activity in your heart. It helps to tell what kind (if any) of heart problem you have.

Your doctor might also suggest other tests, including:

- echocardiography. This is done in a similar way to an ECG. It is the most accurate test for aortic stenosis
- exercise stress testing. This means testing how easily you become tired after physical activity.

What treatments work?

If you have stenosis that is not severe, you and your doctor might decide to do nothing for the moment. You will have tests every few months or years, depending on your symptoms, to see whether you need more treatment.

The main treatment for more severe aortic stenosis is surgery to replace the damaged heart valve. There are two types of operation. The treatment your doctor recommends will depend on things such as:

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- your age
- your general health, and
- how severe your stenosis is.

Surgical aortic valve replacement

With this operation your damaged heart valve is completely removed and replaced with one of two types of valve.

Prosthetic valves are entirely mechanical. These are more likely to be used in younger people with aortic stenosis, as they last longer.

If you have this type of valve fitted you will need to take a type of medicine called an anticoagulant for the rest of your life. This medicine stops your blood from clotting too much and helps it flow easily through the valve.

Bioprosthetic valves are partly mechanical and partly made from pig tissue. Pig tissue is used because it is very similar to human tissue.

If you have this type of valve fitted you won't need to take anticoagulant medicine. But it is more likely than a prosthetic valve to wear out over time and need replacing.

This type of valve tends to be used in older people and in people who cannot safely take anticoagulants. It is the type most commonly used.

Your doctor should discuss the advantages of the different types of valve with you. But the final decisions about your treatment, including what type of valve to use, are yours.

You'll need to stay in hospital for about a week after this operation. But it will be a few months before you recover completely. Most people need to take between 6 weeks and 3 months off work, and you shouldn't drive for at least 6 weeks.

Transcatheter aortic valve replacement (TAVR)

With this operation a new mechanical valve is placed inside your existing heart valve.

It is a simpler operation than a complete valve replacement. This means it is more suitable for people who are not well enough to have a complete aortic valve replacement.

You will need to stay in hospital for 3 to 5 days after this operation. And it will be a few weeks before you are back to normal.

Balloon aortic valvuloplasty

If surgical treatments are not suitable for you, you might be able to have a treatment called **balloon aortic valvuloplasty**. In this procedure a surgeon inflates a small balloon inside your damaged heart valve to help the blood flow more easily.

This treatment doesn't help much in the long term. But it is often used to help improve blood flow enough for someone to have surgery.

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What will happen?

Without treatment, most people with severe aortic stenosis will die within 2 or 3 years.

But treatments can work well. Having a successful complete valve replacement usually results in normal life expectancy.

All surgery has risks, however. An aortic valve replacement is a major operation. Between 2 and 3 in every 100 people will not survive surgery for aortic stenosis.

Long-term results with TAVR are not quite as good as with complete valve replacement. But this may be because people who have TAVR are generally older and not as healthy.

If you have either type of heart valve surgery you will have regular check-ups and tests to see how you are doing. There are also a few things to remember if you have had heart valve replacement surgery.

- Seek medical help immediately if your symptoms come back
- Tell any doctor or dentist that you visit about your surgery. This is because you might need antibiotics to protect your heart against infection during some medical or dental treatments.

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