



Aortic valve stenosis

This information sheet from Great Ormond Street Hospital explains the causes, symptoms and treatment of aortic valve stenosis and where to get help.

The aortic valve is a one-way valve between the left pumping chamber (ventricle) of the heart and the major blood vessel taking blood to the body (aorta).

Aortic stenosis (AS) describes a condition where the aortic valve is smaller or tighter than it should be. As a result, the valve moves less freely and the heart has to contract (squish) harder to push blood across the valve. This extra work can make the heart muscle thicken and become less efficient at pumping blood through.

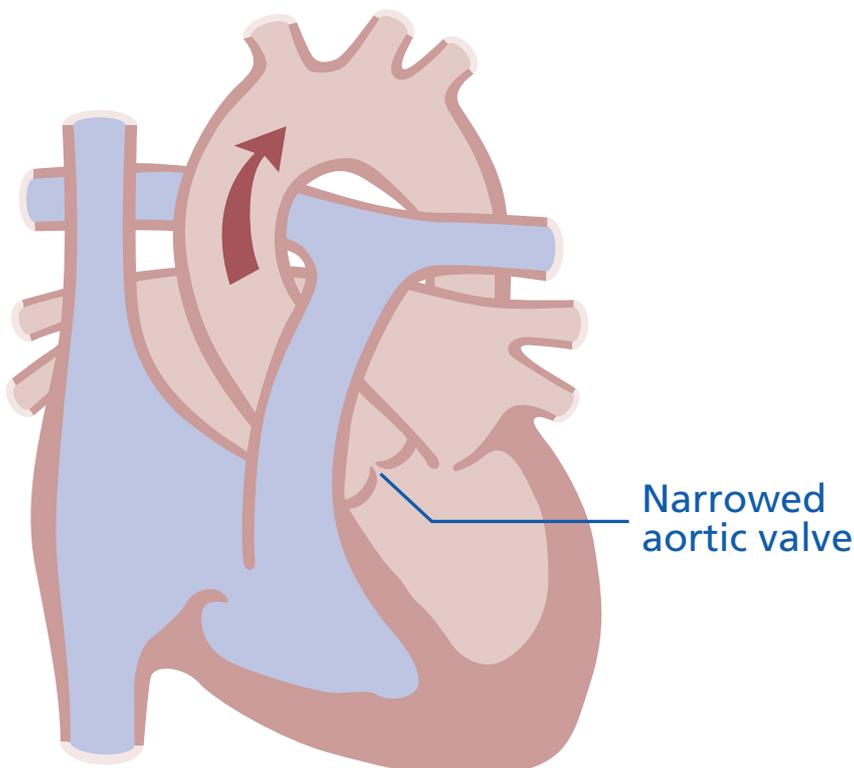
The tightness commonly occurs at the valve site itself (valvar aortic stenosis) but can also be above the valve, in the blood vessel itself (supravalvar stenosis) or below the valve (sub-valvar stenosis).

The valve structure itself is often abnormal and the valve leaflets (or doors) are thickened themselves or arranged in an unusual configuration with two leaflets rather than the usual three.

What causes aortic stenosis?

Aortic stenosis is a congenital heart defect (present when your child was born). The exact cause of congenital heart defects isn't often clear. Most heart problems in children are present from birth due to an anomaly in the way the heart forms during the very early stages of pregnancy.

The reasons for this may be due to a number of factors, such as genetics, environmental factors or infection. The likelihood that a heart problem will have been caused directly by anything you have done during pregnancy or early life is very rare.





What are the signs and symptoms of aortic stenosis?

Mild aortic stenosis is usually picked up at a routine postnatal or six-week check-up alongside a heart murmur (an additional heart sound). In severe cases, your child may experience breathlessness and not be feeding properly. These are both symptoms of heart failure (a term used to describe a state where the heart isn't working efficiently enough to meet the needs of the body).

Symptoms tend to be rare in older children and young people but again, aortic stenosis can be picked up alongside tests for a heart murmur. Chest pain or fainting and dizziness after exercise are also signs that the heart is being put under strain.

How is aortic stenosis diagnosed?

Your child will have an echocardiogram, a non-invasive, high frequency ultrasound scan of the heart. It allows doctors to see the structure of the valve, how blood is moving through the valve and the overall performance of the heart and circulatory system.

They will also have an electrocardiogram (ECG). This measures electrical activity in the heart to see how well it is working. Doctors will look to see whether the left ventricle (one of the lower pumping chambers) has thickened and is working harder than it should be.

How is aortic stenosis treated?

The treatment your child needs will depend on the severity of the stenosis.

If it is only mild, your child may require regular supervision in an outpatient clinic.

However, if it is severe enough to cause symptoms, treatment is likely to be needed.

This may be:

- Cardiac catheterisation and intervention is a keyhole procedure that uses a tiny tool on the end of a catheter to stretch the valve and allow the blood to flow through more freely. The procedure is performed under general anaesthetic but your child will be able to go on the same day as the procedure.
- Heart surgery to improve flow across the valve.

What happens next?

The long-term outlook for aortic stenosis is usually good. Many children only require one catheter or surgical procedure. The severity of the stenosis, the results of the initial surgery and any abnormalities in the structure of the valve itself will determine whether your child needs further surgery.

Your child will need regular check-ups to monitor their progress as they grow older, so their medical team can plan any further surgery for the most appropriate time.



Further information and support

Our Cardiorespiratory Unit regularly refer to information published by the British Heart Foundation (BHF) and the Children's Heart Federation when explaining aortic valve stenosis to our patients and their families.

- Visit the BHF website to download their aortic stenosis factsheet
- Read about aortic stenosis on the Children's Heart Federation website

Notes

Compiled by the Web team in collaboration with the Child and Family Information Group

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