

Pulmonary Stenosis in children

Information for parents and carers



leeds children's
hospital

caring about children

This leaflet provides information for parents and carers about pulmonary stenosis in children and the management and treatment of this condition.

Pulmonary Stenosis

In this condition the valve letting blood flow from the heart to the arteries in the lungs is narrowed. In most cases it is not a serious problem.

In the normal heart, blood passes from the main pumping chamber on the right side of the heart (the right ventricle) to the artery feeding the lungs with blood (the pulmonary artery). When the valve letting blood out of the right ventricle (the pulmonary valve) is narrow the muscle of the right ventricle has to work harder than normal and the muscle gets thickened, just like other muscles in the body if they are worked hard. If the pulmonary valve is only mildly narrowed the heart copes very well, but if the narrowing is very severe the heart cannot pump normally, and this can limit how much exercise the child can manage and very rarely can even cause death if it is not treated.

Many children have mild pulmonary stenosis and do not need any treatment at all, but the valve can become narrower as the child grows, so check-ups in the outpatient clinic will be necessary even if the child appears perfectly well.

Image of a normal heart

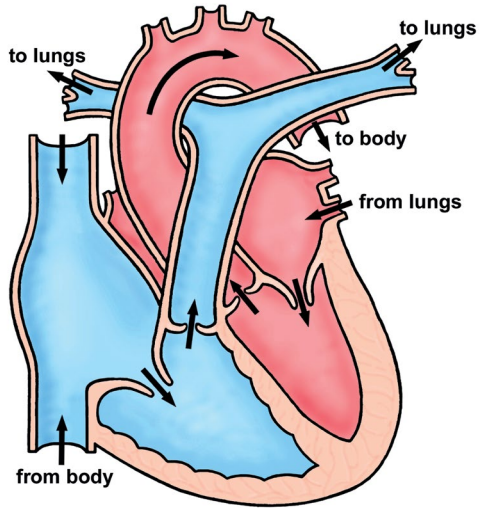
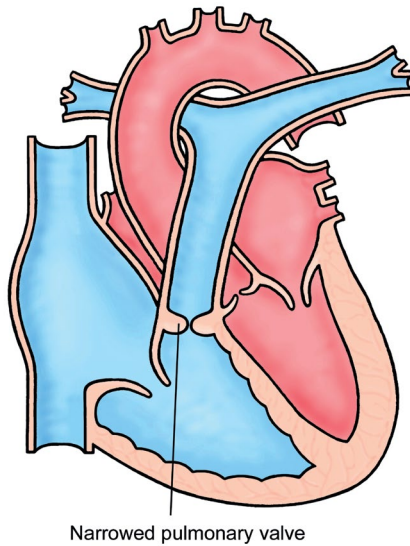


Image of a heart with Pulmonary Stenosis



Here's a video of how Pulmonary Stenosis affects the heart circulation

Pulmonary Stenosis - YouTube

<https://www.youtube.com/watch?v=ye9glzqqWfA>



Tests

An ultrasound scan of the heart (“echocardiogram”) is required to look at the heart valve.

Treatment

If the valve is severely narrowed treatment will be needed. It is very rare to need open heart surgery.

Keyhole treatment

Most cases can be treated by stretching the narrow valve open with a balloon (called “balloon valvuloplasty”). This is done under general anaesthetic and involves passing a long tube with a collapsed balloon on the end of it (a balloon catheter) into the vein at the top of the leg and feeding it up into the heart and across the narrow valve. Using Xray pictures, the balloon is positioned in the narrow valve and is blown up, stretching the valve open.

The cardiologist will discuss the risks and potential complications of the procedure in clinic with you.

This is often performed as a day case or sometimes a one night's stay in hospital is necessary. Sometimes if the narrowing is only partly relieved by the balloon the procedure may be repeated later.

Because the thickened heart muscle (due to the narrow valve) itself can cause some narrowing, it is not always possible to tell straight after the procedure exactly how successful it has been - sometimes we have to wait for a few weeks for the thickened heart muscle to return to normal.

In a small proportion of patients, the thickened heart muscle doesn't return to normal and if this causes important narrowing inside the heart, surgery is needed to remove some of the muscle.

Surgical treatment

Sometimes the pulmonary valve cannot be stretched open using a balloon and open-heart surgery will be needed. If this is necessary, the surgeon will discuss the operation with you in detail including the risk and potential complications.

After the operation the child usually stays in hospital for about 5 days.

The long-term future

Children who have not needed any treatment by the time they are fully grown usually don't ever need treatment for their pulmonary stenosis, but in rare cases the valve can become narrower in later adult life.

Children who have a good result from balloon stretching of the valve or surgery usually do not need any further treatment. However, after any kind of treatment for pulmonary stenosis, the pulmonary valve never works completely normally, and will leak to some extent (some of the blood pumped out of the heart to the lungs flows back into the heart through the valve). There is a small chance that some children might need surgery to replace or repair the valve in later life.

Here's a video with an explanation of pulmonary incompetence (or pulmonary regurgitation) and its treatment by pulmonary valve replacement

**Pulmonary Incompetence &
Pulmonary Valve Replacement - YouTube**

<https://www.youtube.com/watch?v=d07J6TAMteo>



General advice for the future

Most children with pulmonary stenosis, whether they have had treatment or not, lead completely normal lives and can exercise normally too.

Patients with pulmonary stenosis will be at a small risk of infection in the heart (called endocarditis), both before and after treatment. Such infections may be caused by infections of the teeth or gums. It is important to look after your child's teeth and visit the dentist regularly (every 6-12 months). Ear or body piercing and tattooing are best avoided as they also carry a small risk of infection which may spread to the heart. For more information about endocarditis please see the link below:

**Infective endocarditis ... what to do to avoid it -
Leeds Teaching Hospitals NHS Trust (leedsth.nhs.uk)**

[https://www.leedsth.nhs.uk/patients/
resources/infective-endocarditis
-what-to-do-to-avoid-it/](https://www.leedsth.nhs.uk/patients/resources/infective-endocarditis-what-to-do-to-avoid-it/)



Contact us

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Scan the QR code or visit bit.ly/nhsleedsfft

Your views matter



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