

Coarctation of the Aorta

What is congenital heart disease?

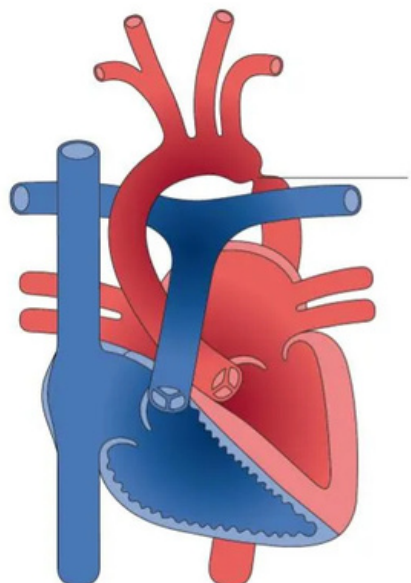
Congenital heart disease is the term used to describe a number of different problems that affect how well the heart works. The word “congenital” means the problem occurs while the fetus is being formed, meaning the condition is present at birth.

There are a large number of different defects, some are mild and don't need treatment, while some are life-threatening and need open heart surgery or other medical interventions. Sometimes the term congenital heart "defects" is used instead of "disease" – either way, the name is commonly shortened to CHD.

CHD is the most common congenital birth defect – affecting around 1 in every 100 babies – and around 3,000 surgeries or catheter procedures take place on babies under one year of age in the UK every year.

What is coarctation of the aorta?

The aorta is the main artery that sends oxygen-rich blood from the heart to the body except the lungs. The aorta arises from the left ventricle of the heart, curves on itself and descends to the lower body. Its appearance looks like a 'shepherds crook'. Coarctation of the Aorta is the narrowing of the distal aortic arch of this crook, so therefore less blood flows through it. Coarctation of the aorta accounts for around 10% of heart defects. It is a serious anomaly, but it can be treated.



Aortic Coarctation

The narrowing within the aorta affects blood flow to other arteries that branch from it which carry blood to the upper and lower parts of the body. It usually affects the lower parts of the body. It means that the left ventricle has to work much harder than normal to push the blood through the narrowed blood vessel. Because of this, the heart may enlarge and cause high blood pressure in the upper body, and low blood pressure in the lower body and legs.

If the narrowing is very severe, the ventricle will not be strong enough to perform this extra work and the baby's heart will fail.

There is a natural connection called the ductus arteriosus – usually called 'the duct' – between the pulmonary artery and the aorta which will allow blood to reach the lower parts of the body. This is open while the baby is in the womb but closes shortly after birth.

How can coarctation of the aorta be spotted?

Coarctation of the aorta is one of the most difficult cardiac defects to diagnose before birth, as in some cases features may only be evident in the third trimester, with some after delivery. Antenatal detection is of paramount importance as once diagnosed, care and treatment can begin as soon as they are born.

If a baby has severe Coarctation which is not detected during pregnancy, they will display symptoms within a few days of birth, or as soon as their 'duct' closes. These symptoms include breathlessness, low energy levels, pale skin, cold feet and legs and lack of feeding. [See Tiny Tickers' Think HEART for 5 signs of heart failure in babies.](#)

In some children the coarctation is not apparent early in life, but it gradually develops over time – sometimes in weeks, sometimes in years. It may only be found by chance, due to a heart murmur or high blood pressure. Occasionally coarctation is not detected until adulthood.

Diagnosis will be confirmed with an echocardiogram or ECHO (a non-invasive ultrasound scan of your baby's heart).

How can coarctation of the aorta be treated?

As outlined above, while the 'duct' is open, blood will continue to reach the lower parts of the body, keeping a baby alive. Therefore a baby with Coarctation of the Aorta will be given an injection of prostin as early as possible, which will keep the duct open until surgery can be performed.

Most babies will then have open heart surgery, under general anaesthetic. During the operation, the narrowed part of the aorta will be removed and the two ends reconnected (a procedure called anastomosis). Or, in some cases, the aorta is widened using a patch of special material.

For most children, this kind of surgery is low risk although your surgeon will discuss the risks that are relevant to your baby.

Overall, 99 in every 100 children with coarctation of the aorta survive surgery. Serious complications may arise after surgery, but they are rare.

Depending on the type of surgery used, your child will either have a scar in the left side of the chest and under their arm, or in the middle of the chest. Most babies will only need to stay in hospital for up to a week after surgery.

In some cases, a balloon angioplasty (or balloon dilatation) may be done instead of surgery but this is more often used for older children.

General advice & information for the future

Most babies will recover quickly after surgery, and will be well and gaining weight within a few days of surgery.

Your cardiologist will advise you about any restrictions on activity that you should be aware of as your baby grows up, but they should be able to live a full and active life.

Sometimes the coarctation reoccurs – this is more common after a balloon catheter than after surgery. Children therefore need regular follow-ups to make sure their condition is monitored closely. In addition, high blood pressure develops in some cases but it can be controlled with medication. For these reasons, your baby will need life-long cardiac check-ups.

How Tiny Tickers can help you

Finding out that your baby has CHD (congenital heart disease) is an incredibly difficult experience. Tiny Tickers is here to help – we provide information to parents-to-be and parents whose babies have been diagnosed, and signpost them to appropriate support services and groups.

Our website – www.tinytickers.org – has lots of information and experiences of other families. You can also order our family support pack through our website. We have a private Facebook group where heart parents can share their stories, concerns and support for each other at various stages of their baby or child's journey.

The ability to speak to others going through or who have been through a similar situation is often a very valuable source of support for a lot of heart parents of babies and children with CHD. Tiny Tickers offers free, virtual peer support sessions and groups for heart parents, parents-to-be and carers.

Please contact us via our website or info@tinytickers.org if you need further information or support.

*Heart illustration taken from <http://www.chd-diagrams.com> . Illustrations are licensed under Creative Commons NonCommercial NoDerivatives 4.0 International License by the New Media Center of the University of Basel.

Tiny Tickers is a charity supporting families affected by CHD. For more information about CHD and how we help, please visit www.tinytickers.org or contact us via info@tinytickers.org. Registered charity 1078114.