



**HeartKids**

# Childhood Heart Disease: The Facts

Information and key facts about childhood heart disease.



## What is childhood heart disease?

Childhood heart disease (CHD) is a general term for a range of conditions that affect the way the heart works.

These heart defects can be congenital or acquired during childhood. Congenital means they are present from birth. Acquired means they develop later in childhood.

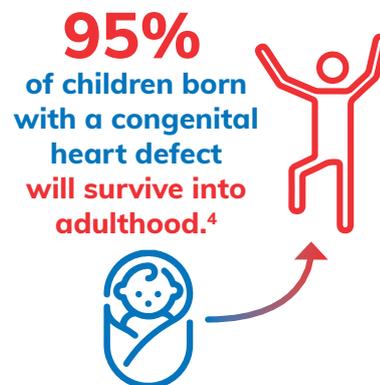
CHD is unique to other types of heart disease because it is a life-long condition.

There is no cure for CHD, but treatment options are improving. Most children with heart problems go on to live long and normal lives.



**8 BABIES**  
ARE BORN EACH  
DAY IN  
AUSTRALIA WITH  
CONGENITAL  
HEART DISEASE.<sup>1</sup>

Congenital heart defects are the most common type of birth defect. 1 in 100 babies are born with a heart defect.<sup>1</sup>

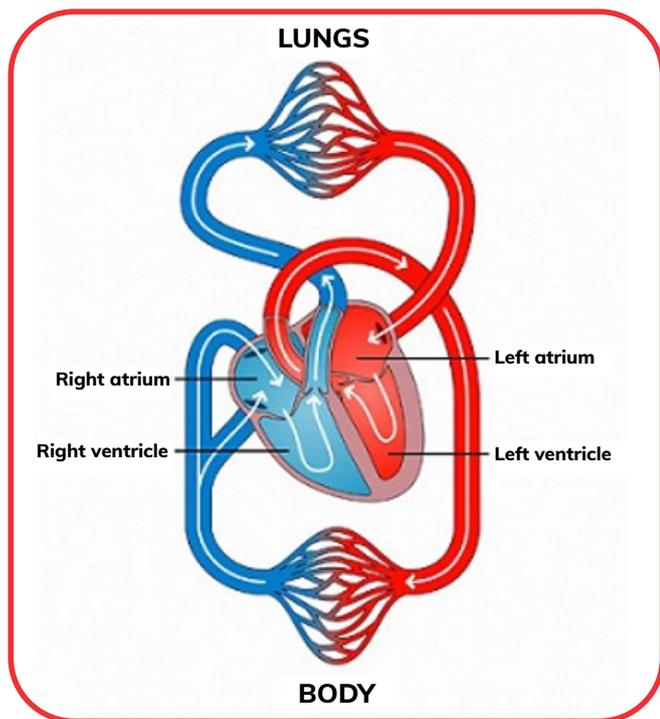


Today, there are over 65,000 Australian children and adults living with CHD.<sup>2</sup>

## How does the heart work?

The heart is a muscle. Its job is to pump blood throughout the body. Blood carries the oxygen and nutrients that body organs need to stay healthy and work properly.

The heart is divided into four chambers, two on the right and two on the left.



Source: The Royal Children's Hospital Melbourne

With each heartbeat, the heart sends blood throughout the body.

To do this, the left and right sides of the heart perform different tasks:

- **The right side** (coloured blue on the diagram) receives oxygen-poor blood from the body and pumps it into the lungs where it picks up oxygen
- **The left side** (coloured red) receives this oxygen-rich blood from the lungs and pumps it through the rest of the body

After delivering the oxygen, the blood returns to the heart and the cycle starts over again.

## What is a congenital heart defect?

Congenital means the heart defect is present at birth. Congenital defects occur when a child's heart doesn't develop properly during pregnancy. There are different types of defects and each can have different impacts.

The main categories of defects are:

- **Holes in the heart** allow oxygen-poor and oxygen-rich blood to mix together. This can mean that not enough oxygen is being carried to the body.  
**Examples:** Atrial septal defect, ventricular septal defect, atrioventricular septal defect
- **Obstructed blood flow** occurs when the blood vessels or heart valves are narrower than in a normal heart. This means that the heart must work harder to pump blood throughout the body.  
**Examples:** Pulmonary stenosis, aortic stenosis
- **Abnormal blood vessels** occur when blood vessels don't form correctly, or they form in incorrect positions. This affects the flow of oxygen-rich blood to the rest of the body.  
**Examples:** Transposition of the great vessels, coarctation of the aorta
- **Heart valve abnormalities** occur when heart valves don't open and close properly. This makes it harder for the heart to get enough oxygen-rich blood to the body.  
**Example:** Pulmonary atresia
- **An underdeveloped heart** occurs when a major part of the child's heart fails to develop properly during pregnancy.  
**Example:** Hypoplastic left heart syndrome
- **A combination of defects** can occur when a baby is born with more than one defect.  
**Example:** Tetralogy of Fallot

## What causes congenital heart disease?

In approximately 80% of cases of congenital heart disease, the cause is unknown.<sup>3</sup>

Some of the known causes and risk factors are genetics, an illness during pregnancy and other factors relating to a mother's health during pregnancy.

## How is congenital heart disease treated?

Some congenital heart defects are mild and don't need treatment. Some can be complex and may need many surgeries over several years.

95% of children born with a congenital heart defect will survive into adulthood.<sup>4</sup>

Today, there are more adults than children living with congenital heart disease in Australia.



**More than half of all children with a congenital heart condition will need surgery or catheter-based treatment at some stage of their lives.<sup>5</sup>**



## What is acquired heart disease?

Acquired heart disease is a problem that develops after birth. Some children develop a heart defect due to an illness or infection during childhood.

The two major types of acquired heart disease in children are:

**Rheumatic heart disease** occurs when there is damage to the heart valves caused by one or more episodes of acute rheumatic fever (ARF). If rheumatic fever is not treated, it can lead to permanent heart damage. There is no cure for rheumatic heart disease (RHD), but the infection that causes it is preventable. Risk factors include poverty, overcrowding and reduced access to medical care. In Australia, RHD most commonly affects Aboriginal and Torres Strait Islander communities.



**Over 90% of the ARF reported in Australia is among Aboriginal and Torres Strait Islander people.<sup>6</sup>**

**Kawasaki disease** causes swelling of the blood vessels, including those that lead to the heart. It mostly affects children under the age of five years. The cause of Kawasaki disease is unproven. Some researchers think an abnormal immune system response to a common germ causes it. Most children diagnosed and treated early make a full recovery and will not have heart damage. Up to 10% of children with Kawasaki disease develop ongoing heart problems.<sup>7</sup>

**Other illnesses** that can lead to acquired heart disease in children include myocarditis (inflammation of the heart muscle) and cardiomyopathy (disease of the heart muscle). Children can also be born with or acquire a heart arrhythmia, which is an abnormal heart rhythm.

## References

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<sup>2</sup> CELERMAJER, D., STRANGE, G., CORDINA, R., SELBIE, L., SHOLLER, G., WINLAW, D., ALPHONSO, N., JUSTO, R., NICHOLAE, M., KASPARIAN, N., WEINTRAUB, R. G., CHEUNG, M., GRIGG, L. E., BRIZARD, C. P., WHEATON, G., DISNEY, P., STEWART, S., BULLOCK, A., RAMSAY, J., GENTLES, T. & D'UDEKEM, Y. (2016). "Congenital Heart Disease Requires a Lifetime Continuum of Care: A call for a Regional Registry." *Heart, Lung and Circulation*. 25(8): 750-754.

<sup>3</sup> BLUE, G. M., KIRK, E. P., SHOLLER, G. P., HARVEY, R. P. & WINLAW, D. S. (2012). "Winlaw DS. Congenital heart disease: current knowledge about causes and inheritance." *The Medical Journal of Australia* 197: 155- 159.

<sup>4</sup> LE GLOAN, L., MERCIER, L., DORE, A., MARCOTTE, F., IBRAHIM, R., MONGEON, F., ASGAR, A., MIRO, J., POIRIER, N. & KHAIRY, P. (2011). "Recent advances in adult congenital heart disease." *Circulation* 75: 2287-2295.

<sup>5</sup> AUSTRALIAN INSTITUTE OF HEALTH AND WELFARE (2019). "Congenital heart disease in Australia". Accessed March 2021. Available: [Online](#)

<sup>6</sup> AUSTRALIAN INSTITUTE OF HEALTH AND WELFARE (2018). "Acute rheumatic fever and rheumatic heart disease in Australia." Accessed March 2021. Available: [Online](#)

<sup>7</sup> THE ROYAL CHILDREN'S HOSPITAL MELBOURNE (2018). "Kawasaki disease". Accessed March 2021. Available: [Online](#)

This fact sheet was reviewed and updated by HeartKids in March 2021. It was endorsed by our Clinical Advisory Committee at the time of publication. Clinical information might change after this date. The information in this fact sheet is general. It is not a substitute for medical advice from your doctor. Always talk to your doctor about matters that affect your health.

## Where to find more information and support

### HeartKids

 [heartkids.org.au](http://heartkids.org.au)

Learn more about CHD and the support HeartKids can offer you.

 1800 432 785

Call the HeartKids Helpline for support, advice and guidance.

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### RHDAustralia

 [rhdaustralia.org.au](http://rhdaustralia.org.au)

### KD Foundation

 [kdfoundation.org.au](http://kdfoundation.org.au)