

Congenital heart diseases

Congenital heart diseases – disorders of the heart and major blood vessels that are present at birth – account for around one third of all congenital problems. They can involve the abnormal development of the heart, the heart valves, major arteries or a combination of these.

It is not known how many Australians have congenital heart diseases. However, about 1 in 185 Australian babies is born with a heart defect, and they are one of the biggest killers of babies below one year of age.

What causes congenital heart diseases?

A congenital heart defect is usually the result of problems occurring in the heart's development during the first few weeks of pregnancy.

In most causes, the cause is unknown. Some of the known risk factors include genetic factors, viral infections such as German measles (rubella), the use of alcohol, illicit drugs or some medicines during pregnancy, and other maternal health factors such as poorly controlled diabetes and poor nutrition.

How are congenital heart diseases diagnosed?

A child may have obvious symptoms of a heart problem, or a doctor might pick up signs of a heart defect during a routine check. In either case, the child is likely to be referred to a heart specialist who will ask about the child's medical history, do a physical examination and often arrange for tests such as:

- An electrocardiogram (ECG) – small patches ('electrodes') are placed on the child's arms, legs and chest and connected to a machine that records the tiny electrical signals that occur with each heart beat.
- A chest x-ray – Like any other X-ray, this test gives doctors a useful picture of the heart size and shape, and the appearance of the lungs.
- An echocardiogram – this test uses ultrasound to give a picture of the inside of the heart, and can also show how well the heart is working as it beats.

Most serious congenital heart defects are diagnosed during infancy but sometimes signs and symptoms, which can vary depending on the particular defect, may appear at a later time.

How are congenital heart diseases treated and managed?

Treatment depends on the type of defect, how serious it is and its impact on the child's daily activities. Some children may be treated with medicines, and some will require a procedure or surgery to repair the defect. In other cases, no treatment may be required – but the problem will usually be monitored in case treatment is needed at a later stage.

Common congenital heart defects in Australia

Septal defects

Atrial septal defects and ventricular septal defects refer to holes in the internal wall of the heart, between either the two upper chambers (the atria) or the two lower chambers (the ventricles).

Patent ductus arteriosus

This is a defect in which the 'shunt' that allows the baby's blood to bypass the lungs before it is born fails to shut off at birth.

Obstruction defects

These are conditions which block the flow of blood through the heart valves, arteries or veins.

Transposition of the great arteries

In this defect the two main arteries leading to the lungs and the rest of the body are 'swapped' in the way they are connected to the heart.

Tetralogy of Fallot

This condition comprises four separate defects, including pulmonary stenosis (an obstruction defect) and ventricular septal defect (described above). The main artery leading from the heart (the aorta) is also abnormally positioned, and the lower right chamber of the heart is thicker than normal.

Hypoplastic left heart syndrome

In this condition structures associated with the left side of the heart (the aorta, aortic valve, left ventricle and mitral valve) are underdeveloped.

For more information, call us on 1300 36 27 87 or email heartline@heartfoundation.org.au. Ask for a copy of our booklet *Children with heart problems*.