

Fact Sheet

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Congenital Heart Defects

What are congenital heart defects?

Congenital heart defects are problems with a baby's heart that are present at birth. There are many types of congenital heart defects that can affect the different parts of the heart. These heart defects range from being life threatening at birth to creating no problems until a child is older.

How does the heart work?

The heart pumps oxygen-rich blood through the body. Once the oxygen in the blood has been used, the blood returns to the heart to be pumped to the lungs to collect more oxygen. The heart is divided into four sections or chambers. After the oxygen-low blood returns from the body, it enters the first of these chambers, the right atrium. The right atrium empties into the right ventricle, which pumps the oxygen-low blood to the lungs through the pulmonary artery. In the lungs, the blood collects oxygen and then returns to the heart where it enters the left atrium. From the left atrium the blood empties into the left ventricle, which pumps the oxygen-rich blood through the aorta to the body.

Is there more than one type of congenital heart defect?

There are many types of congenital heart defects. Below is a listing of some of the more common heart defects.

- **Patent ductus arteriosus:** Patent ductus arteriosus occurs when a temporary blood vessel between two major arteries of the heart does not close after birth. While the baby is growing in the mother, its blood is not sent to the lungs by the heart because the lungs are not yet fully formed. Instead, a special passage called the 'ductus arteriosus' transfers the blood from the aorta to the pulmonary artery and allows the baby to get oxygen from the mother. This passage should close shortly after birth to allow the normal flow of the blood to the lungs. In patent ductus arteriosus, the passage does not close, and therefore the blood does not flow normally. This heart problem is most common in premature infants.
- **Septal defects:** A septal defect is a hole in the wall between the two upper or two lower chambers of the heart. The middle wall between the four chambers of the heart is called a septum. The hole changes the normal flow of the blood by allowing oxygen-rich and oxygen-low blood to mix.
- **Coarctation of the aorta:** Coarctation of the aorta is a condition in which a part of the aorta is too narrow for the blood to flow evenly. The aorta is the large artery that pumps oxygen-rich blood from the heart to the rest of the body.
- **Tetralogy of Fallot:** Tetralogy of Fallot is a condition in which four heart defects occur together. This condition prevents the blood from reaching the lungs for oxygen.
- **Transposition of the great arteries:** Transposition of the great arteries occurs when the two major arteries that leave the heart are reversed from their normal position. The aorta, which normally pumps the oxygen-rich blood from the left side of the heart to the body, is instead attached to the right oxygen-low side of the heart. The pulmonary artery, which normally pumps the oxygen-low blood from the right side of the heart to the lungs, is instead attached to the left oxygen-rich side of

the heart. This reversal results in already oxygen-rich blood being returned to the lungs and oxygen-poor blood being pumped to the body.

What types of problems occur with congenital heart defects?

The heart's purpose is to pump blood to the lungs to pick up oxygen and then pump the oxygen-rich blood to the rest of the body's organs and tissues. Oxygen is needed for the organs and tissues to function properly. Certain types of heart defects can stop enough blood from reaching the organs and tissues of the body. This condition can cause what is known as congestive heart failure, noted by breathing problems or a rapid heart-beat. If the specific heart defect prevents the blood from getting enough oxygen, it can sometimes be noted by a bluish coloring of the skin (cyanosis). Insufficient oxygen in the blood can lead to shortness of breath, easy tiring, and fainting. Even after surgical repair, people with a heart defect remain at higher risk for an infection involving the heart. Between 20 to 45 percent of children with a congenital heart defect have other major birth defects

How common are congenital heart defects?

Each year more than 32,000 children are born with congenital heart defects. In Virginia, approximately 1200 babies are born yearly with a congenital heart defect.

What causes congenital heart defects?

It is believed that most congenital heart defects occur due to a combination of environmental and genetic factors. Environmental factors can include viruses, like rubella (German measles), use of cocaine or alcohol during pregnancy, and use of certain medications during pregnancy, such as Accutane (for treating serious acne) and some types of anti-seizure medications.

Most children with a congenital heart defect are born into families with no family history of a congenital heart defect. Some families may have more than one individual with congenital heart defects. However, heart defects do not occur in a specific pattern in most of these families. Parents of a child with a congenital heart defect have a higher chance of having another child with a congenital heart defect. This risk is estimated to be 1 to 3 in 100. The risk for families that have two children with congenital heart defects may be 5 to 10 in 100.

Congenital heart defects can be the only birth defect a child has, or they can occur with other birth defects as part of a syndrome or collection of findings. The way in which a syndrome is passed through the family is specific to the given syndrome. A genetic counselor or geneticist can help you to determine the risks for your family and situation.

How are congenital heart defects treated?

Some small or more common heart defects may repair themselves over time. Drug treatment can correct the problem in some cases. The majority of congenital heart defects are repaired through surgery. Treatment is specific to the type of heart defect present.

Where can I go for more information about congenital heart defects?

March of Dimes Birth Defects Foundation
www.modimes.org
1-888-MODIMES (1-888-663-4637)

PediHeart Organization
www.pediheart.org

American Heart Association
www.americanheart.org
1-800-242-8721

** This publication was supported by grant number U50/CCU321127-02 from the Centers for Disease Control (CDC). Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the CDC.*