

# Congenital Heart Disease

## What is congenital heart disease?

Congenital heart disease is a heart problem that a child is born with. It means that the heart did not develop normally before birth.

The heart has 4 sections, or chambers. There are two upper chambers each called atria, and the two lower chambers are called ventricles. The heart muscle squeezes to push blood through these 4 chambers, to the lungs, and to the rest of the body. Blood flows from the right atrium into the right ventricle, and the right ventricle pumps it to the lungs. As it passes through the lungs, the blood picks up oxygen and leaves behind carbon dioxide. Then the blood flows back to the heart and into the left atrium, and from there into the left ventricle. The left ventricle pumps the blood out to the rest of the body, with a small amount going to the heart muscle itself. The heart pushes blood out through the arteries and blood returns to the heart through the veins.

The heart has 4 valves, one between each chamber, one between the right lower chamber and the lungs, and one between the left lower chamber and the rest of the body. The valves open and close with each heartbeat to keep the blood flowing in one direction.

An electrical signal in the heart starts each heartbeat, causing the heart muscle to squeeze (pump). Normally, this signal starts in the right atrium. The signal then follows normal pathways to the upper left atrium and to the ventricles.

Congenital heart disease can affect the chambers, the valves, the blood vessels, or the electrical pathways. The heart rhythm may be abnormal or the blood flow may be blocked or going to the wrong place.

Mild congenital heart problems may not be noticed until adulthood. Some heart problems can put a strain on the heart muscle and cause symptoms soon after birth.

## What is the cause?

Most of the time the cause of congenital heart disease is not known.

Some conditions that increase the risk of being born with a heart problem include:

- Other family members have congenital heart disease.
- The mother has diabetes.
- The mother has an infection during pregnancy, such as rubella (German measles).
- The baby has a known genetic disorder, such as Down syndrome or Turner syndrome.

Some medicines or drugs taken by the mother during pregnancy or even a month or 2 before pregnancy may increase the risk that a baby will be born with a heart defect.

## What are the symptoms?

If the defect is mild, there may be no symptoms. Many defects cause a whooshing sound, called a murmur, as blood moves through the heart. Healthcare providers may hear the murmur with a stethoscope.

Symptoms of a heart defect in a baby or child may include:

- Not feeding well
- Being weak
- Having a fast or irregular heartbeat
- Having trouble gaining weight
- Being short of breath or breathing fast
- Sweating when they feed or cry
- Turning blue around the lips or fingers

As symptoms get worse, a baby may have cold, pale, or blotchy skin. The baby may stop urinating and have a very weak pulse. Babies can die if they are not treated.

## How is it diagnosed?

Your healthcare provider will ask about your child's symptoms and medical history and examine your child.

Tests may include:

- Oxygen monitor to see if the oxygen level in the blood is low
- Echocardiogram, which uses sound waves (ultrasound) to see how well the heart muscle is pumping
- Chest X-ray
- An ECG (also called an EKG or electrocardiogram), which measures and records the heartbeat
- Angiogram, which is a series of X-rays taken after the healthcare provider injects a special dye into the blood vessels to look at the structure of the heart
- MRI, which uses a strong magnetic field and radio waves to show detailed pictures of the heart and blood vessels
- CT scan, which uses X-rays and a computer to show detailed pictures of the heart and blood vessels

## How is it treated?

The defect may be small and not need treatment. Sometimes it will get better without treatment. If the congenital heart defect is serious, it may need repair. Depending on the type of defect, the repair may be done during:

- Heart catheterization (coronary angiogram), which uses a small tube called a catheter inserted into a blood vessel, dye, and X-rays to look at the blood vessels and heart. The healthcare provider will use tools put through the catheter to repair the defect.

- Open heart surgery

## **How can I take care of my child?**

Follow your child's healthcare provider's instructions. Ask your child's healthcare provider:

- How and when you will hear your child's test results
- How long it will take for your child to recover
- If there are activities your child should avoid and when your child can return to normal activities
- How to take care of your child at home
- If your child should take antibiotics to prevent infection before having dental work or procedures that involve the rectum, bladder, or vagina.
- What symptoms or problems you should watch for and what to do if your child has them

Make sure you know when your child should come back for a checkup. Keep all appointments for provider visits or tests.

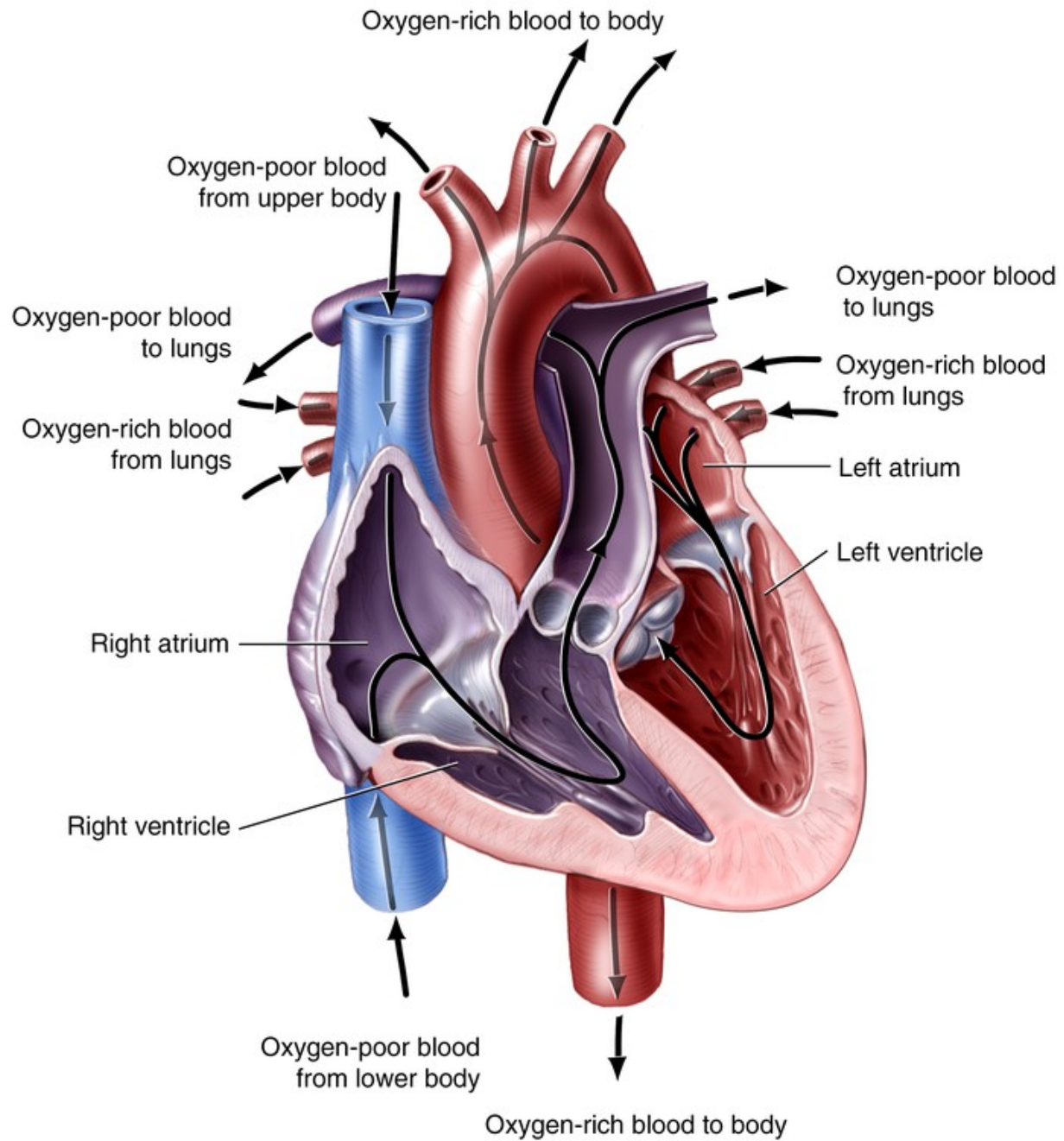
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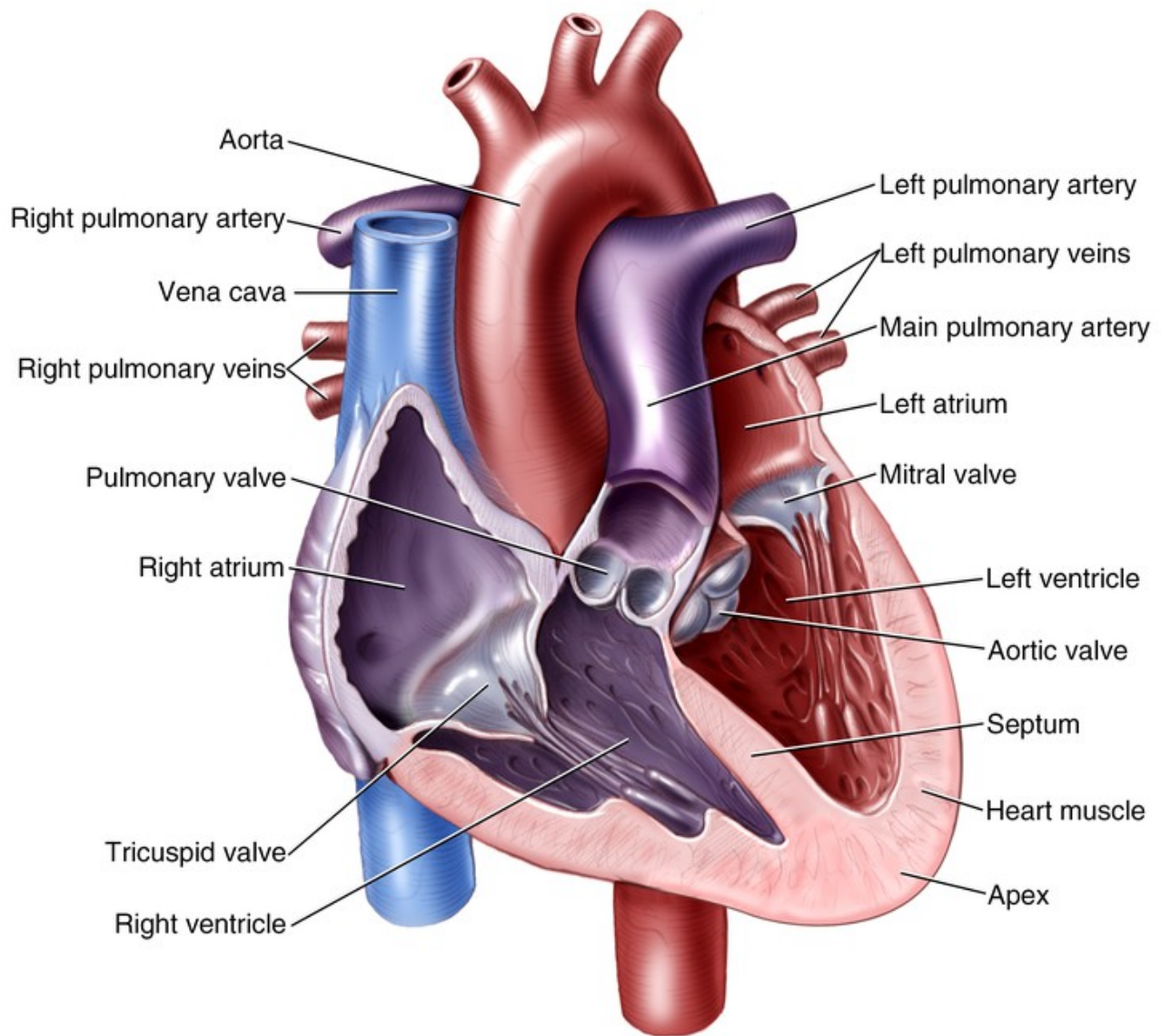
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# Blood Flow in Heart



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## Heart: Interior View



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