

## Medical Treatment

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Not all children with congenital heart defects require treatment. Some may only need to be observed and visit their cardiologist. In other case, surgery or cardiac catheterization may be needed to reduce the effects of and/or repair the defect. Whether babies need surgical or catheterization treatment, they can develop conditions in which the children may benefit from medical treatment.

Many medical treatments are available to help the heart work as best it can. Sometimes multiple conditions occur in the same child and each may require medication for treatment. Here is a list of common conditions that can develop in children with congenital heart defects and may need medical treatment:

### ***Congestive Heart Failure***

The purpose of the heart is to pump blood to the body in order to nourish it. Heart failure doesn't mean that the heart has *stopped* working, but that it just isn't able to pump enough blood to meet the needs of the body. This may happen when the heart muscle itself is weaker than normal or when there is a defect in the heart that prevents blood from getting out into the circulation. When the heart does not circulate blood normally, the kidneys receive less blood and filter less fluid out of the circulation into the urine. The extra fluid in the circulation builds up in the lungs, the liver, around the eyes, and sometimes in the legs. This is called fluid "congestion" and for this reason doctors call this "congestive heart failure".

Older children with congestive heart failure may be tired and have problems keeping up with their friends on the playground, while infants with congestive heart failure usually have symptoms during feeding including sweating, fast breathing and fatigue. In addition, these infants may not gain weight well. Fluid may also build up in the rest of the body, causing swelling of the feet, the legs or around the eyes.

Medicines called diuretics ("water pills"), e.g., furosemide (Lasix), help get rid of the extra fluid by increasing urination. To help the body rid itself of the extra fluid, a low-salt diet may sometimes be necessary. Blood vessel relaxing medications (captopril, enalapril) may sometimes be used to make it easier for the heart to pump. Another medication, digoxin, may help the heart contract with more force.

## ***Heart Rhythm Problems***

Normally, heart rate varies depending on the child's age and activity. The term “arrhythmia” refers to abnormally fast or slow heart rates and to irregular heart rhythms. Arrhythmias are usually diagnosed with an electrocardiogram (ECG).

A heart rate that's faster than normal is called tachycardia. A heart rate that's slower than normal is called bradycardia. Either tachycardia or bradycardia may reduce the heart's pumping ability and may require treatment. Sometimes tachycardia is due to an abnormality of the heart's electrical circuits, while other times it may be due to abnormally high adrenaline levels as seen, for example, after surgery.

Medications known as beta-blockers such as propranolol or atenolol are used to prevent the tachycardia or, at a minimum, slow down the heart rate to prevent symptoms or problems. Digoxin may also be used to prevent certain kinds of tachycardias.

Bradycardia may be associated with certain congenital heart defects or may develop by itself before birth or after heart surgery. In some more serious cases and/or if the heart rate is very slow, an artificial pacemaker may be needed.

Irregular beats or early (premature) heartbeats are often seen in normal infants and children. They may be related to a congenital heart defect or may occur after surgery. Irregular heartbeats without serious fast or slow rhythms usually don't need treatment.

## ***Pulmonary Hypertension***

Some children with congenital heart disease have high blood pressure in their lungs. This is called pulmonary hypertension. Many times after surgery is done to correct the congenital heart defect, the blood pressure in the lungs becomes normal. In other cases the pressure may remain higher than normal, making it harder for the heart to pump. In rare cases, the pressure may be high enough that surgery becomes too risky.

Oxygen or medications may be used to try to relax the blood vessels and reduce the blood pressure after surgery or if surgery is not possible.

## ***Interventional Cardiac Catheterizations***

In some types of congenital heart defects, an interventional cardiac catheterization can be a very effective treatment for the defect. The interventional pediatric cardiologist will use special types of catheters (thin plastic tubes) or closure devices that can be delivered to the heart by entering the blood vessels in the legs or the neck. These special catheters and devices allow the heart defect to be repaired without surgically opening the chest and heart. The types of repairs that can be performed include closing a hole in the wall that separates the heart's right and left sides, widening a narrowed vessel or stiff valve, and closing abnormal blood vessels. Read or print our online pamphlet on [interventional \(therapeutic\) catheterization in children with congenital heart disease](#).