



## Ventricular Septal Defect (VSD)

Note: before reading the specific defect information and the image(s) that are associated with them, it will be helpful to review [normal heart function](#).

### What is it?

A VSD is an opening or hole (defect) in the wall (septum) between the heart's two pumping chambers (ventricles).

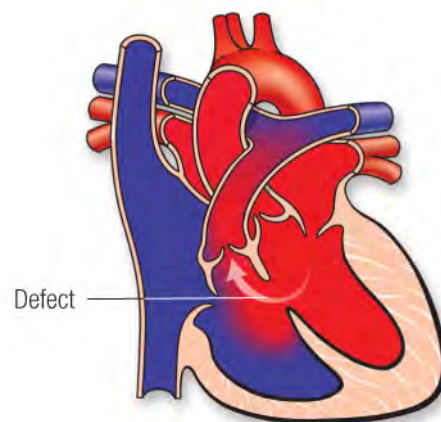
### What causes it?

In most children, the cause isn't known. It's a very common type of heart defect. Some children can have other heart defects along with VSD.

### How does it affect the heart?

Normally, the left side of the heart only pumps blood to the body, and the heart's right side only pumps blood to the lungs. In a child with VSD, blood can travel across the hole from the left pumping chamber (left ventricle) to the right pumping chamber (right ventricle) and out into the lung arteries. If the VSD is large, the extra blood being pumped into the lung arteries makes the heart and lungs work harder and the lungs can become congested.

Ventricular Septal Defect



### How does the VSD affect my child?

If the opening is small, it won't cause symptoms because the heart and lungs don't have to work harder. The only abnormal finding is a loud murmur (noise heard with a stethoscope).

If the opening is large, the child may breathe faster and harder than normal. Infants may have trouble feeding and growing at a normal rate. Symptoms may not occur until several weeks after birth. High pressure may occur in the blood vessels in the lungs because more blood than normal is being pumped there. Over time this may cause permanent damage to the lung blood vessels.

### What can be done about the VSD?

If the opening is small, it won't make the heart and lungs work harder. Surgery and other treatments may not be needed. Small VSDs often close on their own. There isn't any medicine or other treatment that will make the VSD get smaller or close any faster than it might do naturally.

If the opening is large, open-heart surgery may be needed to close it and prevent serious problems. Babies with VSD may develop severe symptoms and early repair, within the first few months, is often necessary. The repair may be delayed in other babies. Medicines may be used temporarily to help with symptoms, but they don't cure the VSD or prevent permanent damage to the lung arteries.



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Closing a large VSD by open-heart surgery usually is done in infancy or childhood even in patients with few symptoms, to prevent complications later. Usually a patch of fabric or pericardium (the normal lining around the outside of the heart) is sewn over the VSD to close it completely. Later this patch is covered by the normal heart lining tissue and becomes a permanent part of the heart. Some defects can be sewn closed without a patch. It may be possible to close some VSDs in the cath lab.

If an infant is very ill, or has more than one VSD or a VSD in an unusual location, a temporary operation to relieve symptoms and high pressure in the lungs may be needed. This procedure (pulmonary artery banding) narrows the pulmonary artery to reduce the blood flow to the lungs. When the child is older, an operation is done to remove the band and fix the VSD with open-heart surgery.

### What activities can my child do?

If the VSD is small, or if the VSD has been closed with surgery, your child may not need any special precautions regarding physical activity and can participate in normal activities without increased risk.

### What will my child need in the future?

Depending on the location of the VSD, your child's pediatric cardiologist will examine your child periodically to look for uncommon problems, such as a leak in the aortic valve. Rarely, older children with small VSDs may require surgery if they develop a leak in this heart valve. After surgery to close a VSD, a pediatric cardiologist will examine your child regularly. The cardiologist will make sure that the heart is working normally. The long-term outlook is good and usually no medicines or additional surgery are needed.

### What about preventing endocarditis?

Ask about your child's risk of endocarditis. Your child's cardiologist may recommend that your child receive antibiotics before certain dental procedures for a period of time after VSD repair. See the section on [endocarditis](#) for more information.

Closure by Patch

