

# Atrioventricular Septal Defect (AVSD)

## What is it?

An **atrioventricular septal defect** (pronounced EY-tree-oh-ven-TRIC-u-lar SEP-tuhl) is a congenital heart defect. **Congenital** means present at birth. An **atrioventricular septal defect (AVSD)** occurs when holes are present between the chambers of the heart and the valves between

them are not formed correctly. This condition is also called **atrioventricular canal (AV canal)** defect or **endocardial cushion defect**. Blood flows where it normally should not go when a person has AVSD. The blood may also have less oxygen than normal, which forces the heart and lungs to work harder than normal. When the heart cannot get enough of the oxygen-rich blood the body needs, congestive heart failure can occur. AVSD may occur with other heart defects or alone.

There are two general types of AVSD. They vary in the structures that are not formed correctly:

1. A **complete AVSD** means there is a large hole in the center of the heart. The two upper chambers of the heart are called **atria**, and the bottom chambers are called **ventricles**. The hole is present where the walls (**septa**) of the four chambers normally meet. There is also only one common valve in

RA. Right Atrium  
RV. Right Ventricle  
LA. Left Atrium  
LV. Left Ventricle  
SVC. Superior Vena Cava  
IVC. Inferior Vena Cava  
MPA. Main Pulmonary Artery  
Ao. Aorta  
CAVV. Common Atrioventricular Valve  
PV. Pulmonary Valve  
AoV. Aortic Valve

the center of the heart, called an **atrioventricular valve**. The common valve often has flaps that may not be formed or work correctly. This allows blood to flow between all four chambers of the heart.

2. A **partial or incomplete AVSD** is when the heart has some, but not all, of the defects of a complete AVSD. A hole in the wall of either the upper or lower chambers of the heart is usually present. Both valves are usually present, but one valve may not close completely, allowing blood to leak backwards in the heart.



Image courtesy of the Centers for Disease Control and Prevention,  
National Center on Birth Defects and Developmental Disabilities



Indiana State  
Department of Health



## How common is it?

About 2,000 babies are born each year with AVSD in the United States. AVSD is common in babies with Down syndrome, a genetic condition in which there is an extra chromosome 21. Down syndrome is also called trisomy 21.

## What causes it?

The causes of AVSD for most babies are unknown. There may be many factors that cause AVSD, but more research is needed to determine the causes of AVSD.

## How is it diagnosed?

An AVSD may be diagnosed during pregnancy or after birth. Screening tests during pregnancy can check for birth defects. An **echocardiogram** is a special test to view the heart, and it may be performed to confirm diagnosis of AVSD.

## How is it treated?

Treatment of both complete and partial AVSDs usually requires surgery. Patches are used to close the holes. If there is a valve that does not close completely, it is repaired or replaced. If there is a common valve, it is separated into two distinct valves. The age at which surgery is done depends on other factors, and your doctor should explain when surgery will be completed. Medication also can be used to treat congestive heart failure. Your child's doctor should discuss treatment options with you.

It is important to note that surgery does not cure AVSD. An infant with AVSD repairs may have lifelong complications. The most common is a leaky mitral valve, which happens when the mitral valve does not close all the way and blood flows backwards. This causes the heart to work harder than normal to get blood to the rest of the body. A child with an AVSD will need regular visits to a **cardiologist**, a doctor who specializes in the heart. The cardiologist will monitor the child's heart for other conditions. With proper treatment and regular follow-up, most babies with AVSD grow up to lead healthy, productive lives.

### For more information:

#### American Heart Association

[http://www.heart.org/HEARTORG/Conditions/CongenitalHeartDefects/AboutCongenitalHeartDefects/About-Congenital-Heart-Defects\\_UCM\\_001217\\_Article.jsp#.Wv2YtPnwbcs](http://www.heart.org/HEARTORG/Conditions/CongenitalHeartDefects/AboutCongenitalHeartDefects/About-Congenital-Heart-Defects_UCM_001217_Article.jsp#.Wv2YtPnwbcs)

#### Centers for Disease Control and Prevention

<https://www.cdc.gov/ncbddd/heartdefects/avsd.html>

#### National Heart, Lung, and Blood Institute

<https://www.nhlbi.nih.gov/health-topics/congenital-heart-defects>