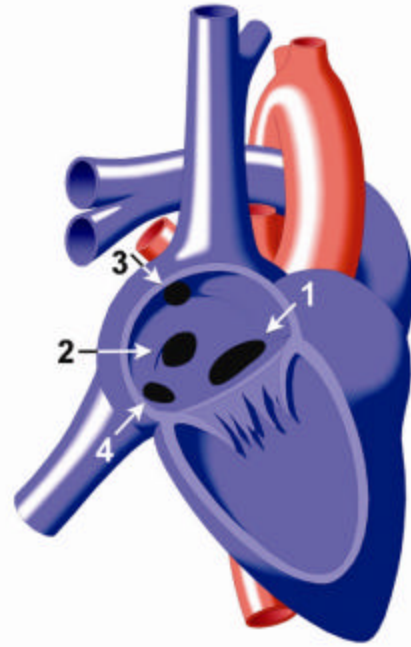


# Atrial Septal Defect

An Atrial Septal Defect (ASD) is a hole in the atrial septum, or muscle wall, that separates the right and left atria (singular = atrium), or upper chambers of the heart. Because of the lower pressure in the right atrium, this hole allows oxygenated blood from the lungs to move, or shunt, from the left into the right atrium. This blood proceeds into the right ventricle, which pumps it back to the lungs rather than to the body.

ASDs vary in size and in the severity of symptoms they may cause. They account for between 5 and 10 per cent of all cases of congenital heart disease and are twice as prevalent among girls as boys.

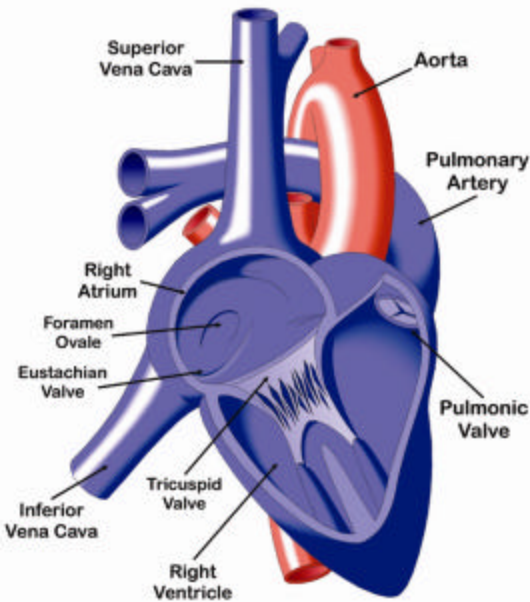
Atrial Septal Defects are divided into three different types on the basis of the position of the hole (or holes) in the atrial septum. The first type of ASD is known as ostium primum defect, or simply, primum. In this kind of defect, the hole is located in the lower part of the atrial septum, near the tricuspid valve, which opens into the right ventricle.



**Above:** Atrial Septal Defects

1. Primum
2. Secundum
3. Superior Sinus Venosus
4. Inferior Sinus Venosus

**Left:** Normal Heart



The most common type of ASD (accounting for 50-70% of all cases) is known as ostium secundum defect, or simply, secundum. In this case, the hole is located near the center of the atrial septum.

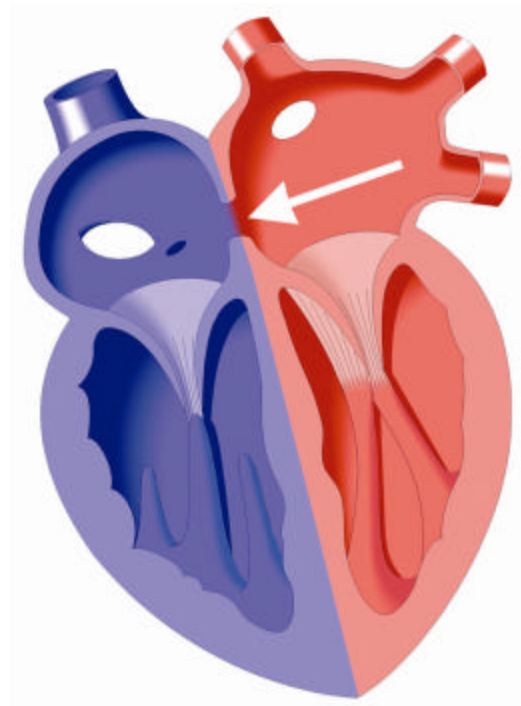
The third type of ASD is known as the sinus venosus defect, in which the hole is located near one of the two places where the vena cava (the vein that carries blood from the body to the heart) enters the right atrium. The two kinds of sinus venosus defect are distinguished by whether the hole is near the entry point of the superior vena cava (SVC) (superior vena caval type) or of the inferior vena cava (IVC) (inferior vena caval type).

Children with large ASDs are characteristically slender of build and have a heart murmur. The murmur is caused by the extra blood flow across the pulmonary valve. Some children may experience shortness of breath or heart palpitations. However, they are normally active and show no other outward symptoms. There are no exercise restrictions for these children.

The larger the defect, the more likely children will have symptoms. Infants with a large ASD may develop congestive heart failure. However, if the defect is small (less than 2 millimeters), there is a very high probability that it will close on its own. Surgery is not usually performed in these cases.

Larger ASDs, which are more likely to remain open, cause an excessive flow of blood into the right atrium, right ventricle and pulmonary artery (see illustrations). This enlarges the right atrium and right ventricle (dilation) and causes high pressures in the pulmonary artery that will eventually distort its shape and may also damage the blood vessels in the lungs.

The enlargement of the right atrium can result in abnormal heart rhythms. These effects are not reversed by closing the ASD after the damage has been done. Heart failure is likely when a person with an untreated ASD reaches young adulthood.



**Below:** Normal Heart

