



Atrial Septal Defect (ASD)

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?

An ASD is an opening or hole (*defect*) in the wall (*septum*) between the heart's two upper chambers (*atria*).

What causes it?

Every child is born with an opening between the upper heart chambers. It's a normal fetal opening that allows blood to detour away from the lungs before birth. After birth, the opening is no longer needed and usually closes or becomes very small within several weeks or months.

Sometimes the opening is larger than normal and doesn't close after birth. In most children the cause isn't known. Some children can have other heart defects along with ASD.

How does it affect the heart?

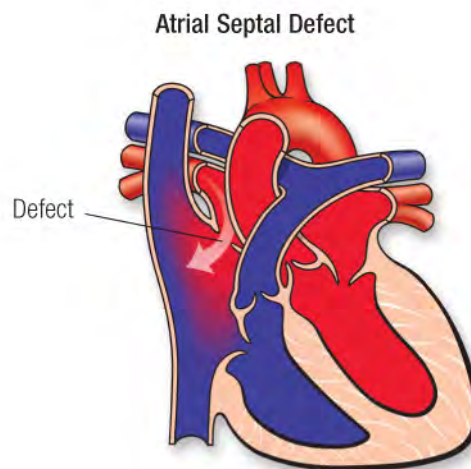
Normally, the left side of the heart only pumps blood to the body, and the right side of the heart only pumps blood to the lungs. In a child with ASD, blood can travel across the hole from the left upper heart chamber (left atrium) to the right upper chamber (right atrium) and out into the lung arteries.

If the ASD is large, the extra blood being pumped into the lung arteries makes the heart and lungs work harder and the lung arteries can become gradually damaged.

If the hole is small, it may not cause symptoms or problems. Many healthy adults still have a small leftover opening in the wall between the atria, sometimes called a Patent Foramen Ovale (PFO).

How does the ASD affect my child?

Children with an ASD often have no symptoms. If the opening is small, it won't cause symptoms because the heart and lungs don't have to work harder. If the opening is large, the only abnormal finding may be a murmur (noise heard with a stethoscope) and other abnormal heart sounds. In children with a large ASD, the main risk is to the blood vessels in the lungs because more blood than normal is being pumped there. Over time, usually many years, this may cause permanent damage to the lung blood vessels.





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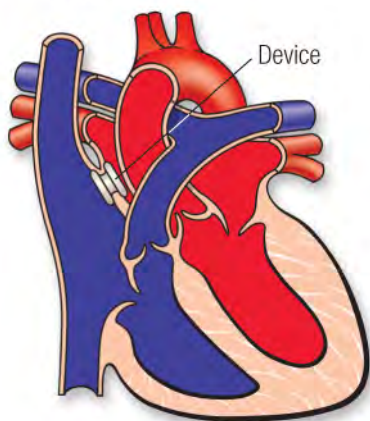
Can the ASD be repaired?

If the opening is small, it doesn't make the heart and lungs work harder. Surgery and other treatments may not be needed. Small ASDs that are discovered in infants often close or narrow on their own. There isn't any medicine that will make the ASD get smaller or close any faster than it might do naturally.

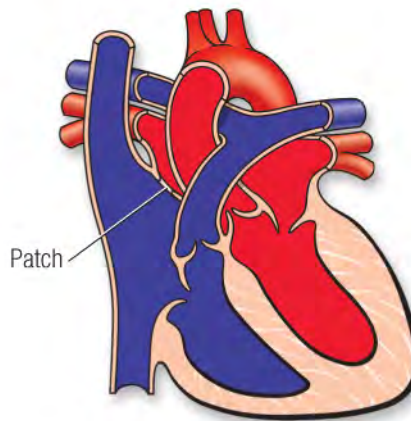
If the ASD is large, it can be closed with open-heart surgery, or by cardiac catheterization using a device inserted into the opening to plug it. Sometimes, if the ASD is an unusual position within the heart, or if there are other heart defects such as abnormal connections of the veins bringing blood from the lungs back to the heart (pulmonary veins), the ASD can't be closed with the catheter technique. Then surgery is needed.

Closing a large ASD by open-heart surgery usually is done in early childhood, even in patients with few symptoms, to prevent complications later. Many defects can be sewn closed without using a patch.

Closure by Device



Closure by Patch



What activities can my child do?

Your child may not need any special precautions and may be able to participate in normal activities without increased risk. After surgery or catheter closure, your child's pediatric cardiologist may advise some activity changes for a short time. But after successful healing from surgery or catheter closure, no restrictions are usually needed. Sometimes medicines to prevent blood clots and infection are used for a few months after ASD closure.

What will my child need in the future?

Depending on the type of ASD, your child's pediatric cardiologist may examine your child periodically to look for uncommon problems. For a short time after surgery to close an ASD, a pediatric cardiologist must regularly examine the child. The long-term outlook is excellent, and usually no medicines and no additional surgery or catheterization are needed.



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What about preventing endocarditis?

Most children with an ASD are not at increased risk for developing endocarditis. Your child's cardiologist may recommend that your child receive antibiotics before certain dental procedures for a period of time after ASD repair. See the section on [endocarditis](#) for more information.