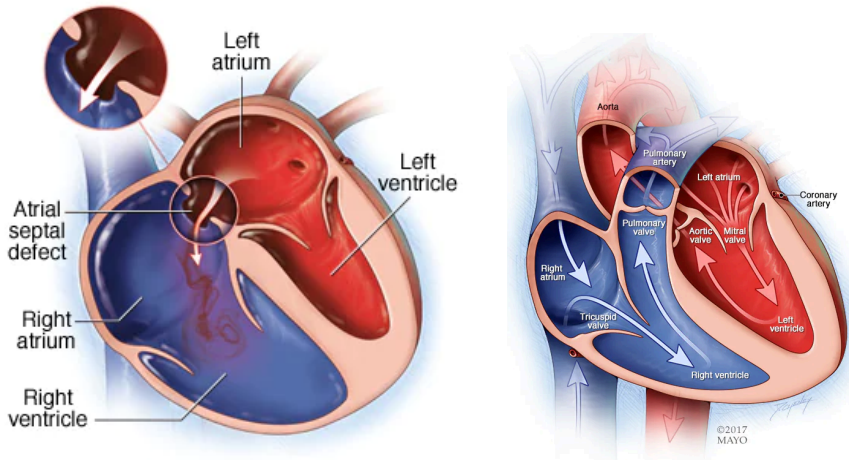
Understanding the Risks and Recommendations for Patients with ASD, PDA, VSD

Introduction: Congenital Heart defects are among the most common birth defects, affecting 40,000 individuals every year. Among these, Atrial Septal Defect (ASD), Ventricular Septal Defect (VSD) and Patent Ductus Arteriosus (PDA) are frequent ones. These conditions can be treated effectively, but sometimes they pose challenges. In this paper, we explore the risks associated with ASD, PDA, and VSD and provide recommendations for them to navigate these challenges.

Atrial Septal Defect (ASD): In this case, there is a hole in the septum (wall) that divides Atria (upper chambers) of the heart. This hole may close on its own, but if it stays like this or the hole increases in size, the hole increases the amount of blood flowing through the lungs and overtime it may cause damage to the blood vessels in lungs. In the image below you can see how a normal heart (left) works and how an ASD heart (Right) works.



Risks: The cause for this disease is not clear as it happens during pregnancy but it can be caused due to

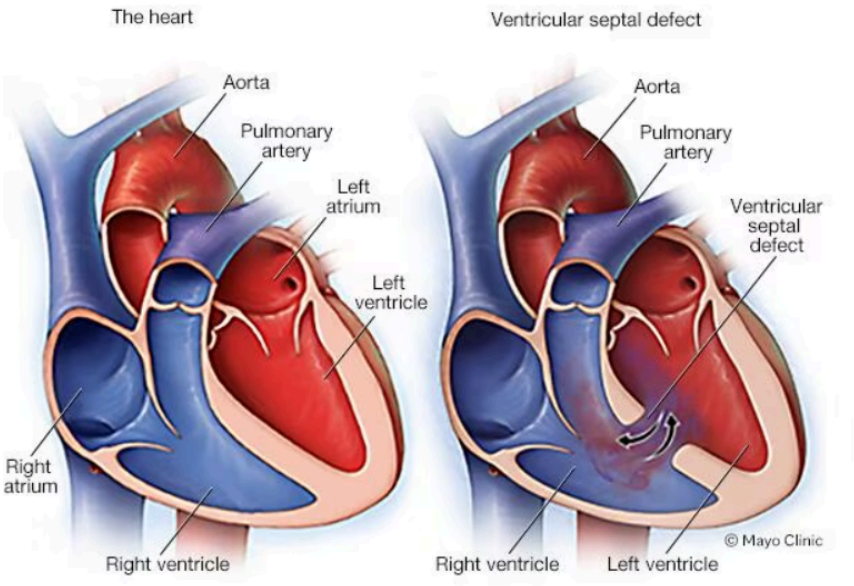
- Changes in their genes or chromosomes.
- Alcohol or tobacco use during pregnancy.
- Use of some medicines during pregnancy, including those to treat seizures and mood conditions.

Challenges:

- Right-sided heart failure.
- Irregular heartbeats, called arrhythmias.
- Stroke.
- Early death.
- High blood pressure in the lung arteries, called pulmonary hypertension

Treatments: Treatments for ASD depends on several cases like symptoms, size of the hole and presence of any other conditions. Generally, the expert decides to monitor the child to see if the hole closes on its own, otherwise the closure can be done by Open Heart Surgery.

Ventricular Septal Defect (VSD): In this condition, there is a hole in the septum (wall) that separates the ventricles (lower chambers) of the heart. Similar to ASD, this hole can sometimes close on its own, but if it persists or enlarges, it can lead to increased blood flow between the ventricles. This increased flow can strain the heart and lungs over time, potentially causing damage to the blood vessels in the lungs. The diagram below illustrates the functioning of a normal heart (left) compared to a heart with VSD (right).



Risks: Risk factors for ventricular septal defect include:

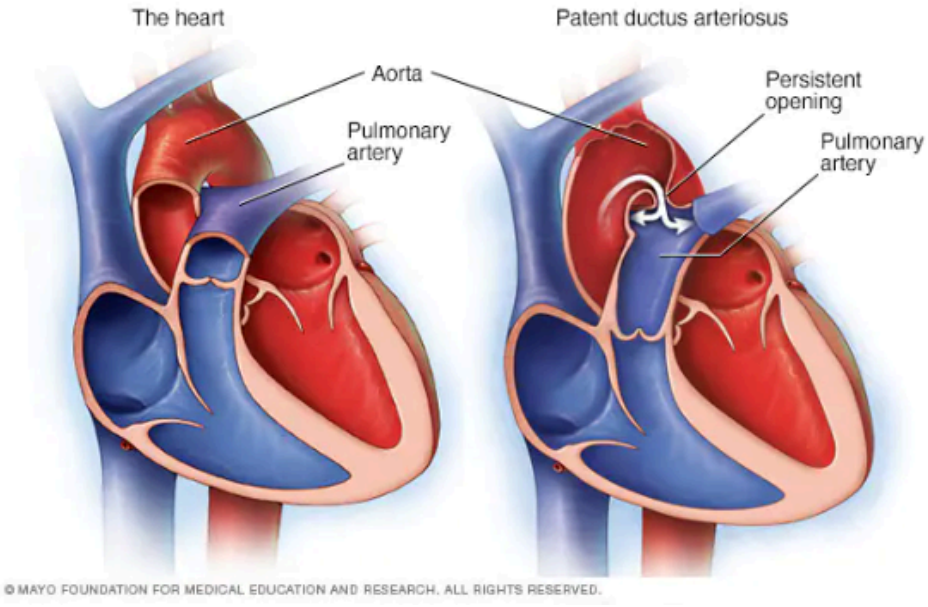
- Premature birth
- Down syndrome and other genetic conditions
- Family history of heart problems present at birth (congenital heart defects)

A baby born with ventricular septal defect may have other heart problems, such as:

- Atrial septal defect
- Coarctation of the aorta
- Double outlet syndrome
- Patent ductus arteriosus
- Tetralogy of Fallot

Treatments: Treatments for VSD a cardiac (heart) surgeon will operate and patch or close the hole. Depending on the size and location of the hole, it may be as simple as stitching the hole shut. In other cases, it might involve a patch made of a synthetic material or a graft of your own tissue.

Patent Ductus Arteriosus (PDA): is an opening between the two major blood vessels leading from the heart.



Risks: Risk factors for patent ductus arteriosus (PDA) include,

- Premature Birth
- Genetic Conditions
- German Measles during pregnancy
- Being Born in high altitude
- Being Female

Treatments: Treatment options for a patent ductus arteriosus include regular health checkups, medicines, and a procedure or surgery to close the opening.

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