

Understanding Atrioventricular Septal Defect (AVSD)

**Endocardial Cushion Defect:
Surgical Repair and Long-Term Follow-Up**

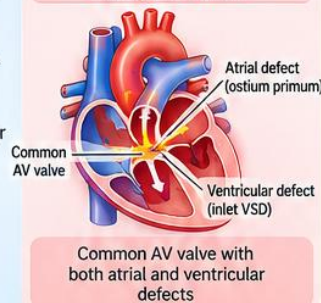
A treatable congenital heart defect
with excellent long-term outcomes
with appropriate care



What is AVSD?

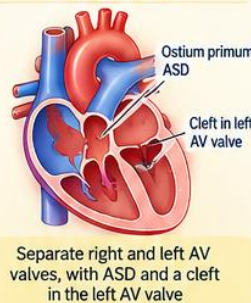
- A congenital heart defect caused by abnormal development of the heart's atrioventricular septum and valves (endocardial cushions).
- Involves openings between the upper and lower chambers and abnormalities of the atrioventricular (AV) valves.
- Accounts for about 4–5% of congenital heart defects.
- Strongly associated with Down syndrome (trisomy 21).

Complete AVSD

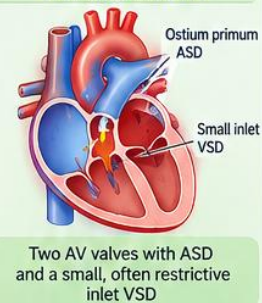


Types of AVSD

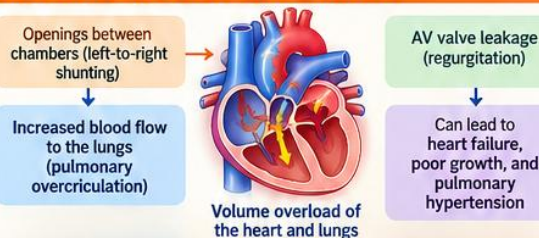
Partial AVSD



Transitional AVSD



How does AVSD affect the heart?



Common Signs and Symptoms



In Infants
(usually with complete AVSD)

- Fast breathing and increased work of breathing
- Feeding difficulties
- Poor weight gain
- Sweating with feeds
- Recurrent respiratory infections
- Signs of heart failure



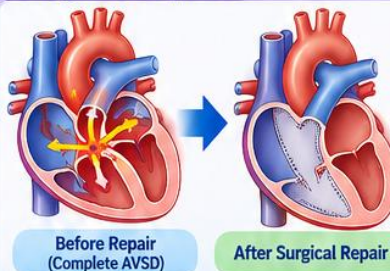
In Older Children
(usually with partial AVSD)

- Often no symptoms early on
- Heart murmur
- Poor exercise tolerance
- Fatigue
- Enlarged right side of the heart
- Left AV valve leakage

How is AVSD Diagnosed?

	Echocardiogram	Main test to define the type of AVSD, valve anatomy, heart size and function, and associated abnormalities.
	Electrocardiogram (ECG)	May show characteristic changes and enlarged heart chambers.
	Chest X-ray	May show an enlarged heart and increased lung blood flow.
	Cardiac MRI or CT	Used when additional detail is needed.
	Cardiac catheterization	Selected cases to assess pulmonary pressures and complex anatomy.

Surgical Repair



Goals of Surgery

- ✓ Close the atrial and ventricular defects
- ✓ Reconstruct competent AV valves
- ✓ Preserve normal blood flow in and out of the heart
- ✓ Protect the heart's conduction system

When is Surgery Recommended?

	Complete AVSD (balanced ventricles)	Usually at 3–6 months of age (often before 6 months)
	Severe heart failure	Earlier surgery when needed
	Partial AVSD	Usually during early childhood (around 2–5 years)
	Transitional AVSD	Individualized based on anatomy and symptoms
	Unbalanced AVSD	Individualized approach, may require staged procedures

Long-Term Follow-Up

Lifelong congenital cardiology follow-up is essential, even after a successful repair.

- ♥ **Regular clinical evaluations** – symptoms, growth, blood pressure, exercise tolerance
- 👁️ **Echocardiogram** – AV valve function, heart function, residual defects
- 📶 **ECG and rhythm monitoring** – detect conduction problems and arrhythmias
- 🏃 **Exercise testing** – assess functional capacity when appropriate
- 🧠 **Cardiac MRI** – detailed evaluation when needed
- 👤 **Transition to adult congenital heart disease care** during adolescence

Potential Long-Term Issues

- Left AV valve leakage (most common reason for reoperation)
- Left ventricular outflow tract obstruction
- Conduction abnormalities (including late heart block)
- Residual shunts
- Pulmonary hypertension (especially if repair is delayed)
- Arrhythmias

Prognosis

- 📈 Excellent long-term survival after surgical repair.
- ✓ Most children can grow, be active, and live a normal life.
- ✓ Some patients may require additional interventions later in life.

Safety Pearls

- Early repair prevents heart failure and pulmonary vascular disease.
- Ongoing follow-up is essential to monitor AV valve function, heart function, and rhythm.
- Seek medical attention for increasing fatigue, shortness of breath, new palpitations, or poor growth.
- Maintain good dental hygiene. Antibiotic prophylaxis may be needed in selected situations.



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