

# Septal Defects

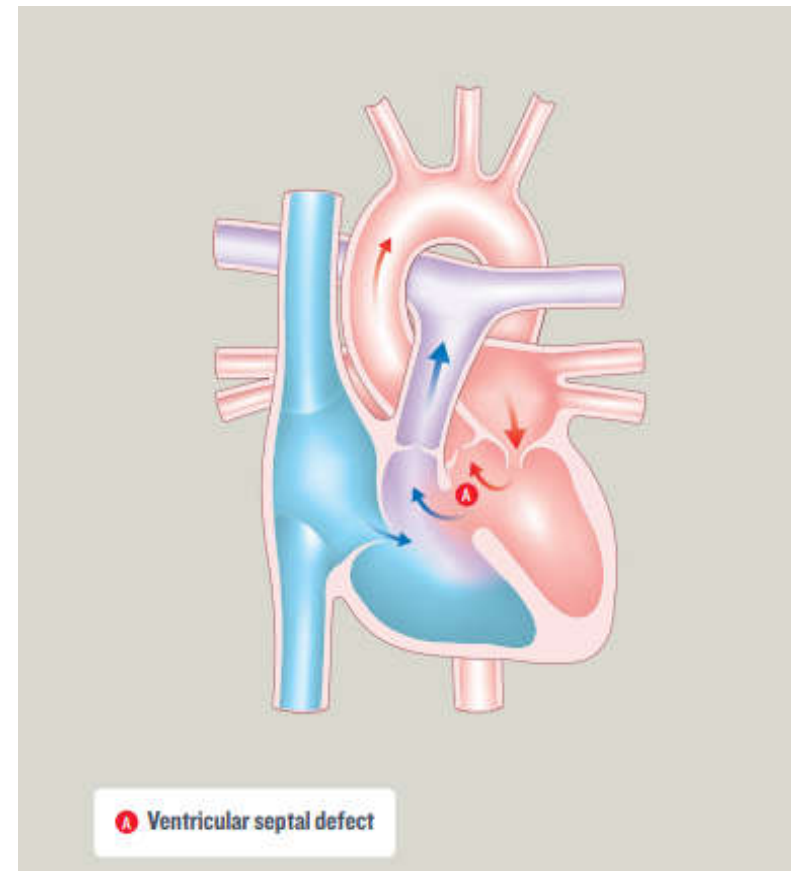
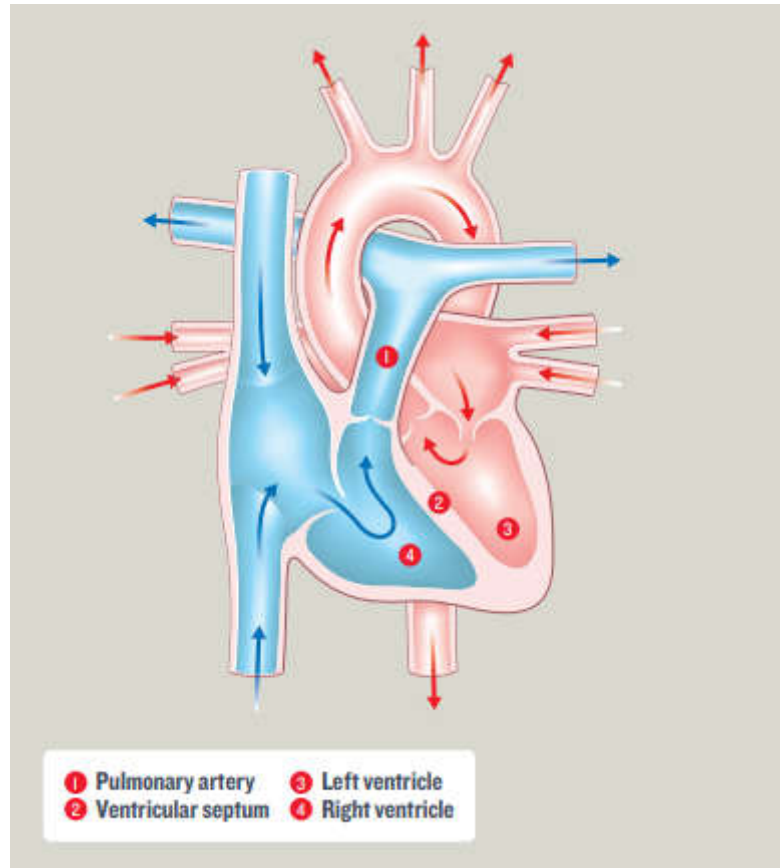
Debs Richardson

Children's Cardiac Nurse Specialist

# VSD, ASD & AVSD

- Ventricular Septal Defect - communication between the Ventricles
- Atrial Septal Defect – Communication between the Atria
- AVSD – Communication between the ventricles and atria with valve involvement

# Ventricular Septal Defect



# Ventricular Septal Defect

- Most common type of congenital heart defect
- 20-30% of all CHD
- Varying degrees of size, placement and number of defects, which can effect the outcome
- Antenatal diagnosis – large defect
- Post natal diagnosis – baby becoming symptomatic

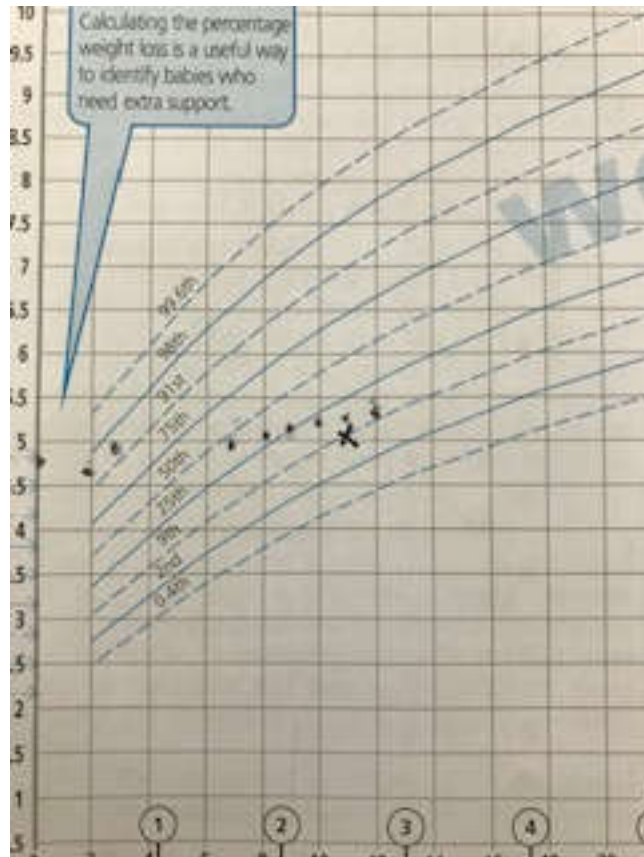
# Ventricular Septal Defect

- VSD's are acyanotic lesions that create left to right shunts.
- After birth as PVR falls and SVR rises, the higher left-sided pressure causes blood to flow from the left to the right side of the heart.
- Over-pulmonary circulation occurs
- RV pressure overload > pulmonary hypertension (Eisenmengers syndrome)

# Signs and symptoms

- Significant pulmonary oedema
- Breathlessness
- Sweaty
- Feeding difficulties
- Faltering growth
- Sleepy – tires easily
- Congestive heart failure

# Faltering Growth



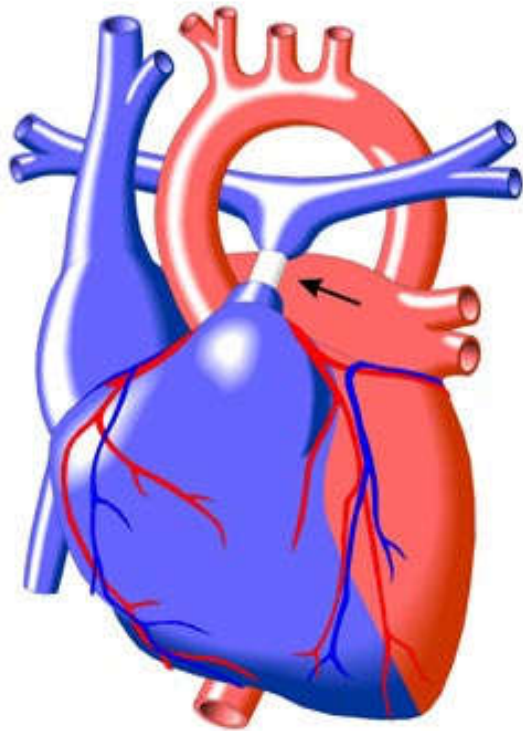
Date	Age	Wt (kg)	Wt (lb)	Other Measurements
1.5.19	13/7	4.56	10 lb	
7.5.19	19/7	4.62	10 lb 2 oz	
14.5.19	3 <sup>+</sup> /52	4.78	10 lb 7 oz	
7.6.19	7/52	4.96	10.15	
13.6.19	8	5.03	11.1 oz	
19.6.19	9/52	5.08	11.3	
26.6.19	10/52	5.14	11.4	
3.7.19	11/52	5.18	11.6 1/2	

# Management

- Diuretic therapy
- High energy milk
- Naso-gastric tube feeding
- Weight monitoring
- Aim for operation before 6 months
- If symptomatic and not gaining weight indication for early operation.



# Pulmonary Artery Banding

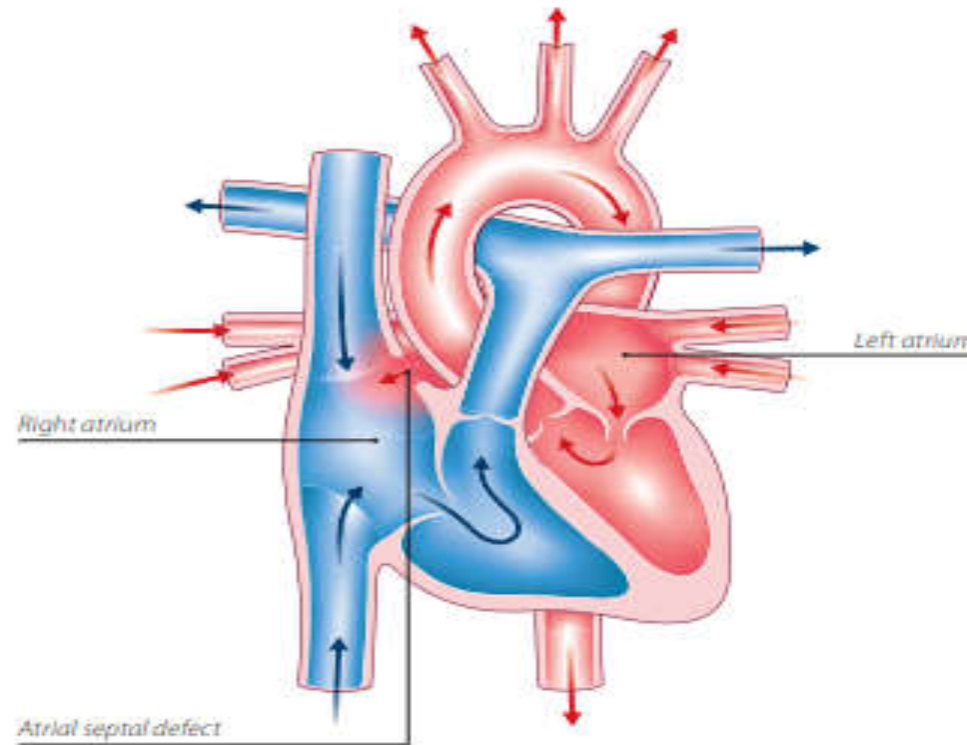


- Multiple VSD's with appearance of Swiss cheese
- Low birth weight

# Outcome

- Surgical closure (usually before 6 months)
- VSD patch repair
- 1 week hospital stay
- Good outcome
- Follow up for a number of years
- Less likely to have further intervention

# Atrial Septal Defect



# Atrial Septal Defect

- This defect is a hole or communication with the atria septum that accounts for 5 -10% of all congenital heart defects.
- There are several different types of ASD and depends on where the communication is. Primum – (30%), Secundum (50-60%) Sinus Venosus (10%) and the rare coronary sinus

# Signs and Symptoms

**Most ASD's do not produce symptoms in childhood.**

- Asymptomatic murmur
- Right atrial dilatation
- Child is pink (unless coronary sinus ASD is present)
- History of chest infections
- Shortness of breath on exertion
- Slight fatigue
- Arrhythmias if left untreated
- Pulmonary hypertension in later life

# Management

- Large ASD & symptomatic  
Surgical closure in the first few years
- Large ASD & asymptomatic  
Surgical closure before an adult
- Some smaller ASD's can be closed with a device once the child is over 20kg

# Outcome

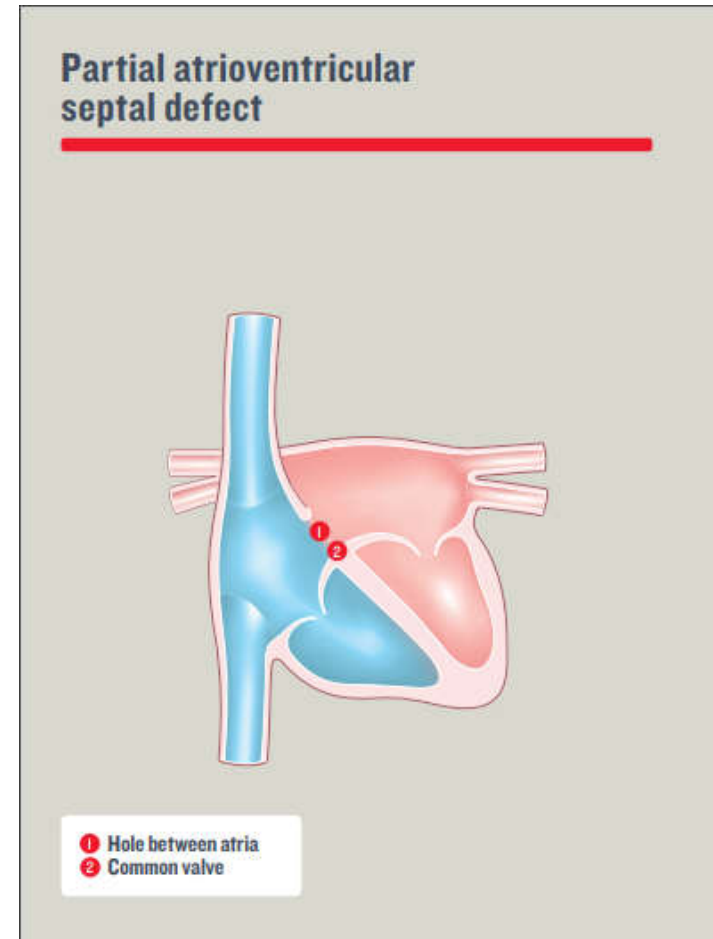
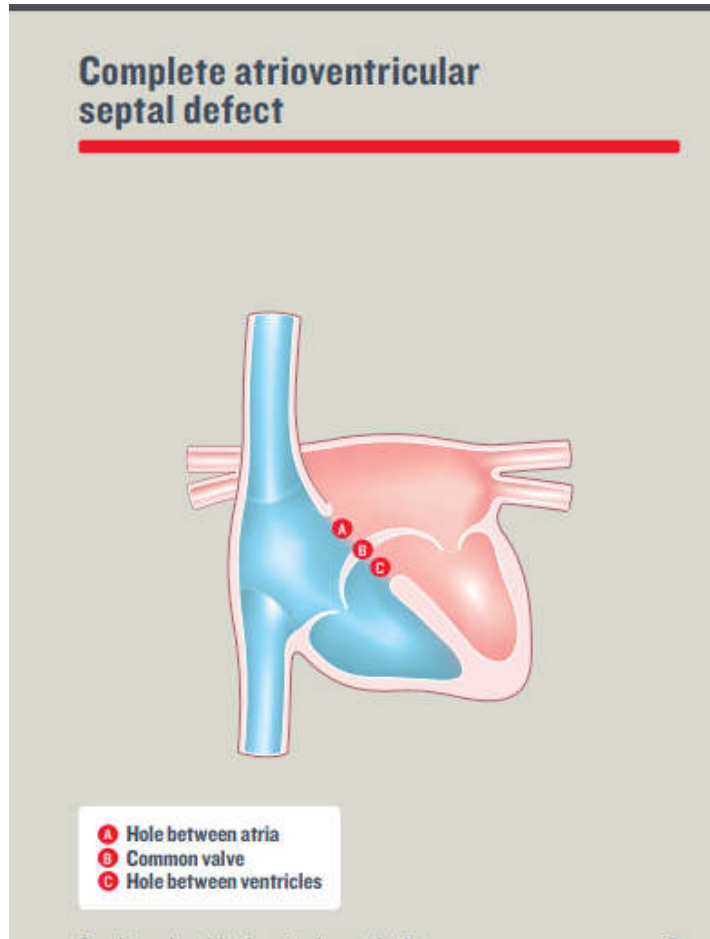
- Surgical closure
- 1 week hospitalisation
- Follow up in in Congenital clinic throughout childhood – discharge in adulthood
- Device Closure
- 2 days hospitalisation – follow up for life

# Atrial Septal Defect

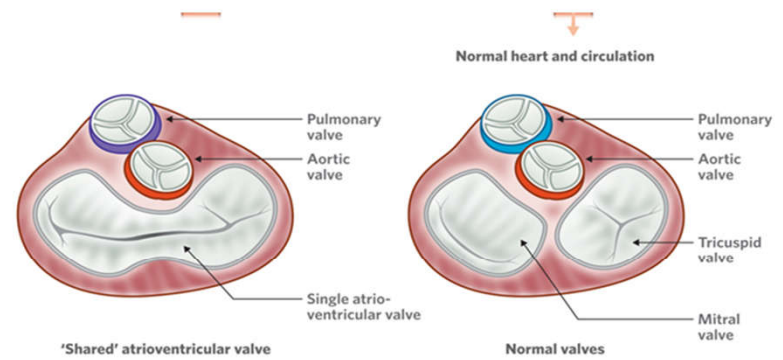
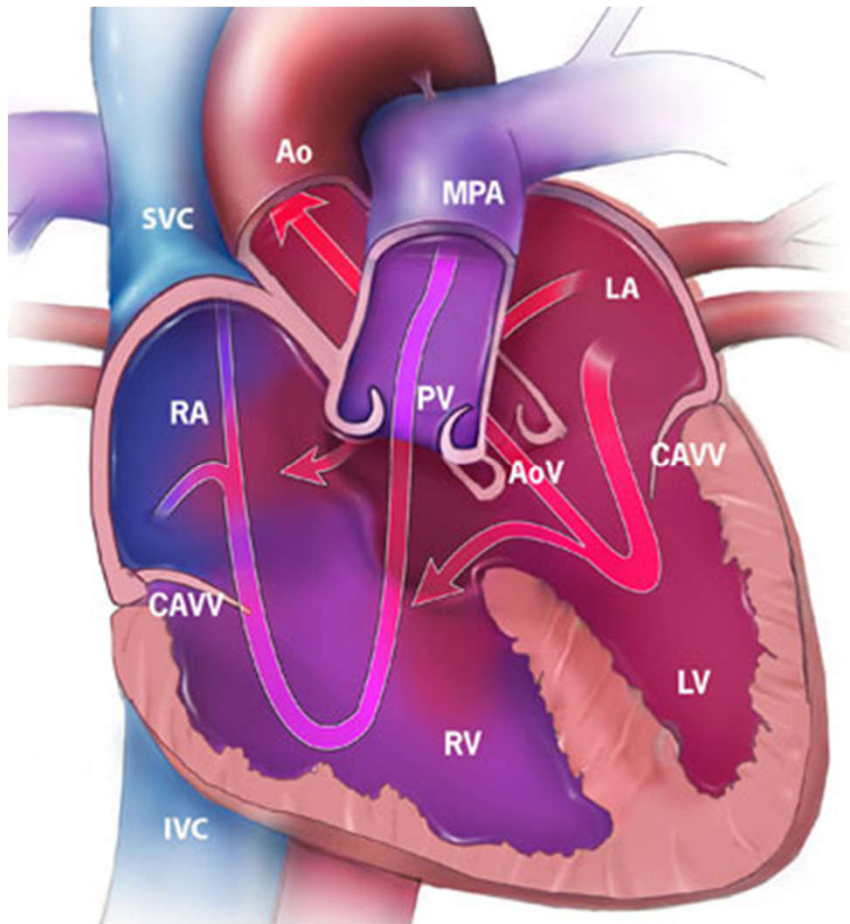
- If the ASD remains open into adulthood the right atrium and ventricle will dilate, resulting in hypertrophy, CHF and Pulmonary Hypertension.



# Atrioventricular Septal Defects



# AVSD



# AVSD

- AVSD's account for 2-5% of all congenital heart defects.
- This is the most common heart defect in children with Down's Syndrome.
- Antenatal diagnosis
- Post natal – symptomatic
- AVSD varies greatly in severity

# CAVSD

- AVSD are acyanotic lesions that create left to right shunts
- After birth as PVR falls and SVR rises the higher left sided pressure causes blood to flow from the left to right side of heart
- Valve insufficiency contributes to this shunting by allowing blood to regurgitate from the LV into the LA

# CAVSD & PAVSD

- In CAVSD the shunt is intratrial and intraventricular
- In PAVSD the shunt is Intratrial

# Signs and Symptoms

## **CAVSD**

- Significant pulmonary oedema
- Breathlessness
- Sweaty
- Feeding difficulties
- Faltering growth
- Sleepy – tires easily
- Congestive heart failure

## **PAVSD**

- Usually mild or not present in childhood
- potential atrial arrhythmias
- atrial dilatation, slight fatigue
- SOB on exertion
- pulmonary hypertension in later life

# Management

- Diuretic therapy
- High energy milk
- Naso-gastric tube feeding
- Weight monitoring
- Aim for operation 4-6 months
- If symptomatic and not gaining weight indication for early operation.

# Outcome CAVSD

- Surgical closure of two holes – patch repair
- Division of common Valve to make two separate valves.
- Hospitalisation 1- 2 weeks
- Valve tissue is very delicate
- Regurgitation - sometimes severe
- Valve replacement
- Implications for more interventions/surgery in the future



# Outcome PAVSD

- Surgical closure of ASD and division of common valve.
- Usually in childhood but depended on the severity of valve regurgitation.
- Hospitalisation 1-2 weeks.
- Follow up in CHD clinic for life.

- Any Questions?