

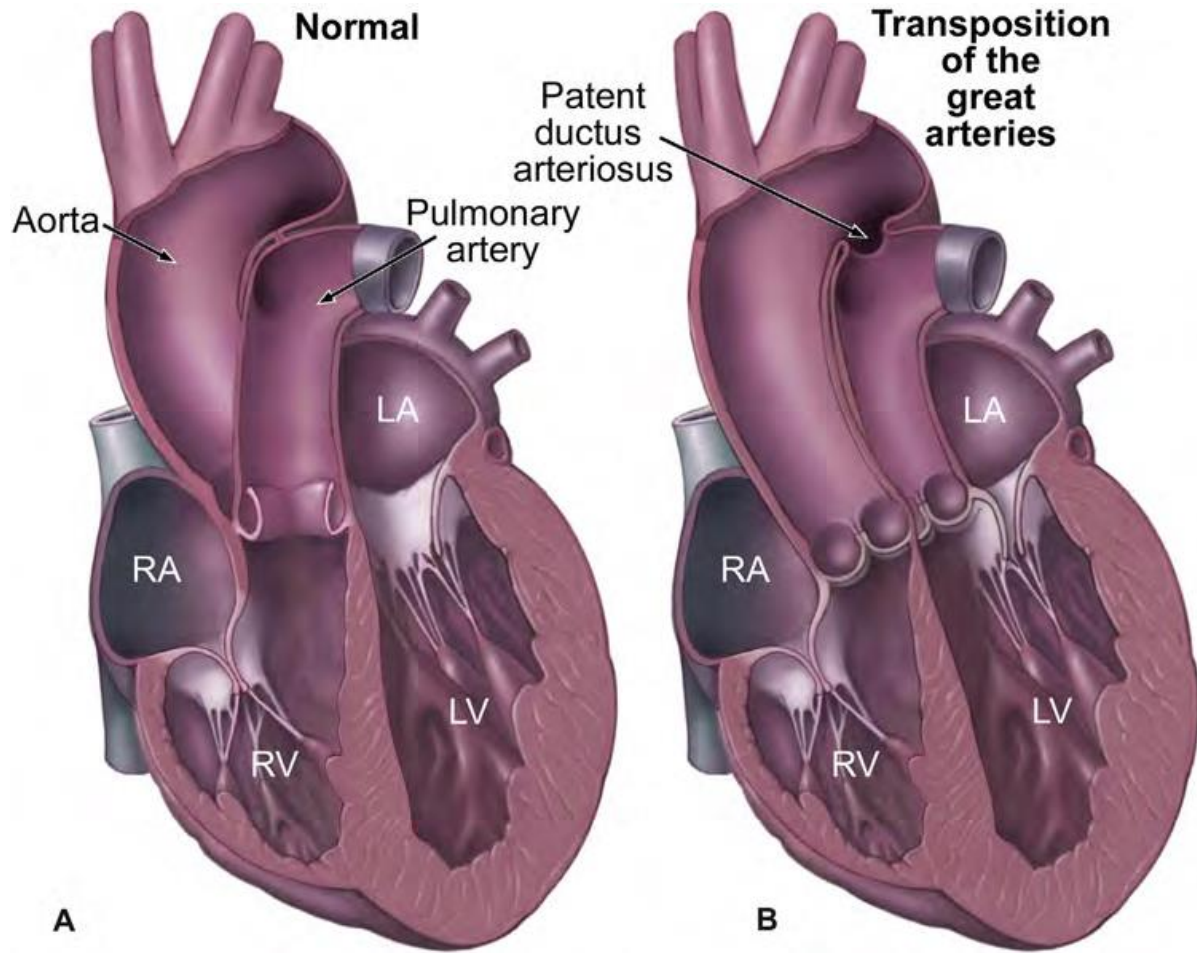
# **D-Transposition of the Great Arteries (D-TGA)**

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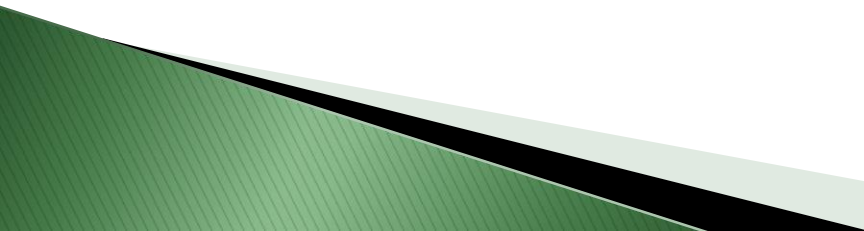
# What is D-Transposition of the Great Arteries???



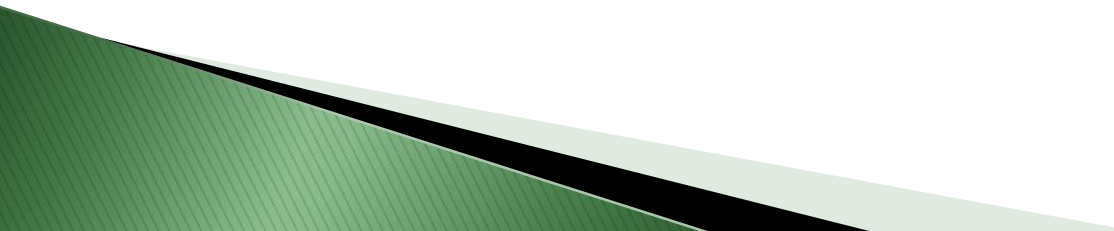
- ▶ Transposition of the Great Arteries is when the aorta arises from the right ventricle and the pulmonary artery arises from the left ventricle resulting in ventriculo-arterial discordance.



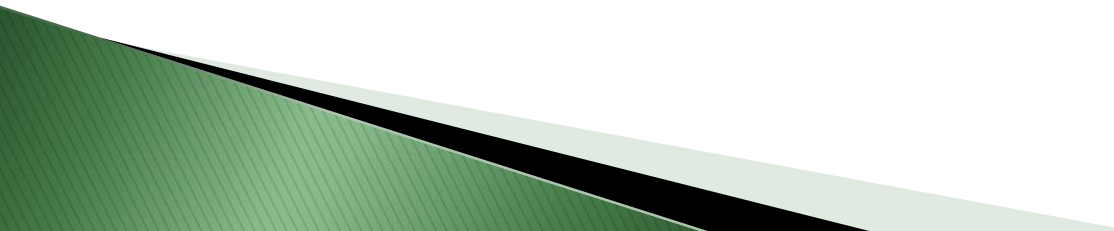
# Etiology

- ▶ The etiology remains unknown but genetic cause is probable in most cases
  - ▶ Familial recurrence occurs in TGA, 10% of those who have TGA also have a relative with congenital heart defect
  - ▶ Environment factors
  - ▶ TGA is the most common congenital heart defect of diabetic mothers
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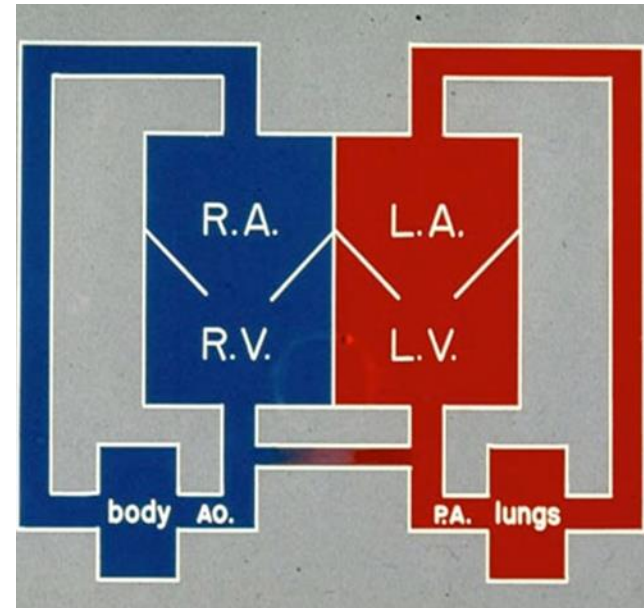
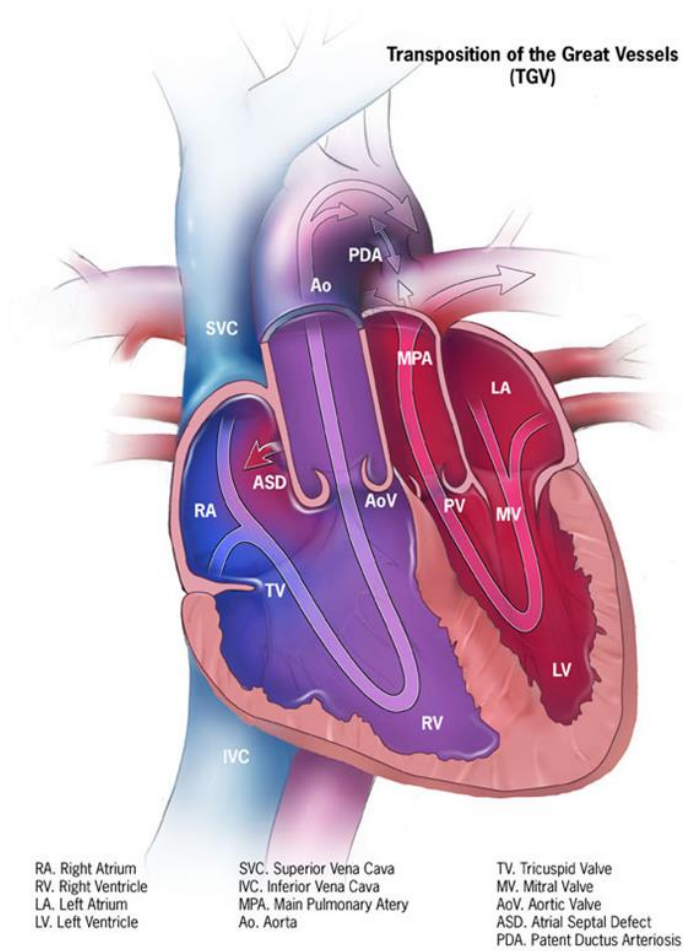
# Incidence

- ▶ TGA is approximately 31.5 per 100,000 live births
  - ▶ TGA affects males more commonly than females (2:1)
  - ▶ 10<sup>th</sup> most common congenital heart defect and 2<sup>nd</sup> most cyanotic lesion after Tetralogy of Fallot (TOF)
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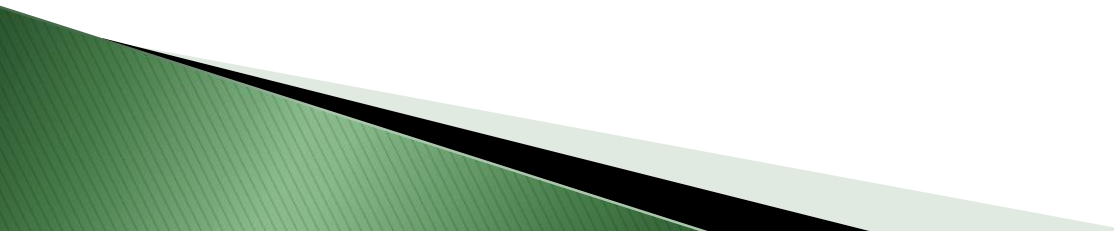
# Pathophysiology

- ▶ TGA results in parallel systemic and pulmonary circulations
  - ▶ Deoxygenated systemic venous blood returns to the aorta via the RV and oxygenated pulmonary venous blood returns to the pulmonary arteries through the LV
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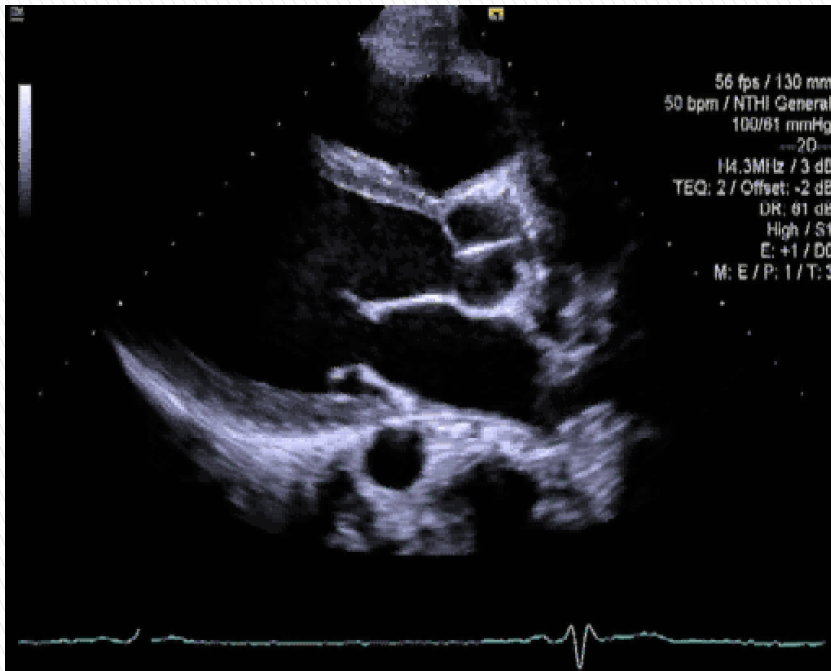
# Pathophysiology



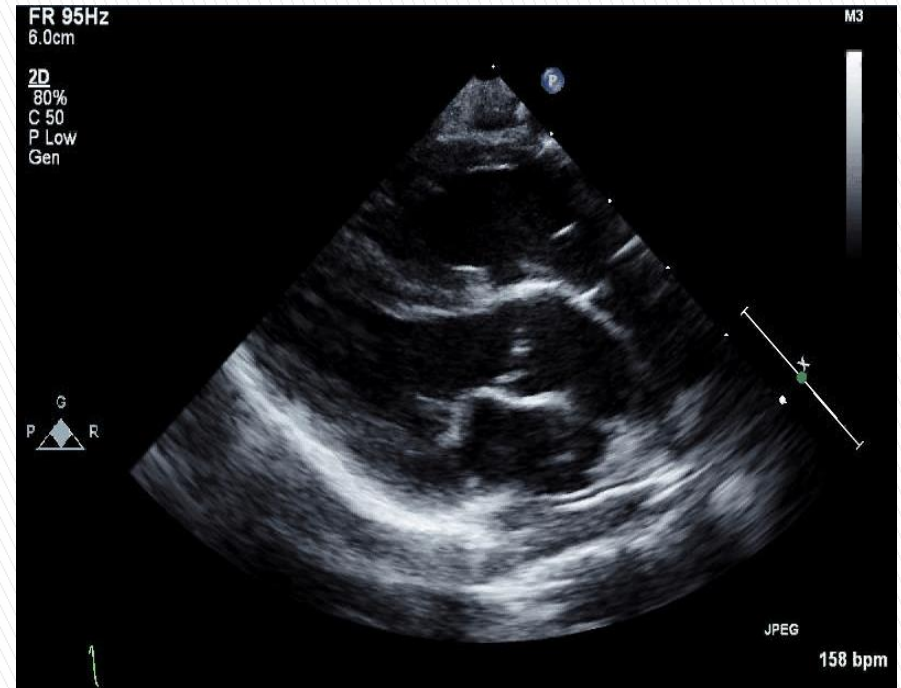
# Symptoms

- ▶ Baby will be cyanotic if there is not enough mixing of oxygenated and deoxygenated blood
  - ▶ Low O<sub>2</sub> saturations
  - ▶ Shortness of breath
  - ▶ Lack of appetite
  - ▶ Poor weight gain
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# Parasternal Long Axis

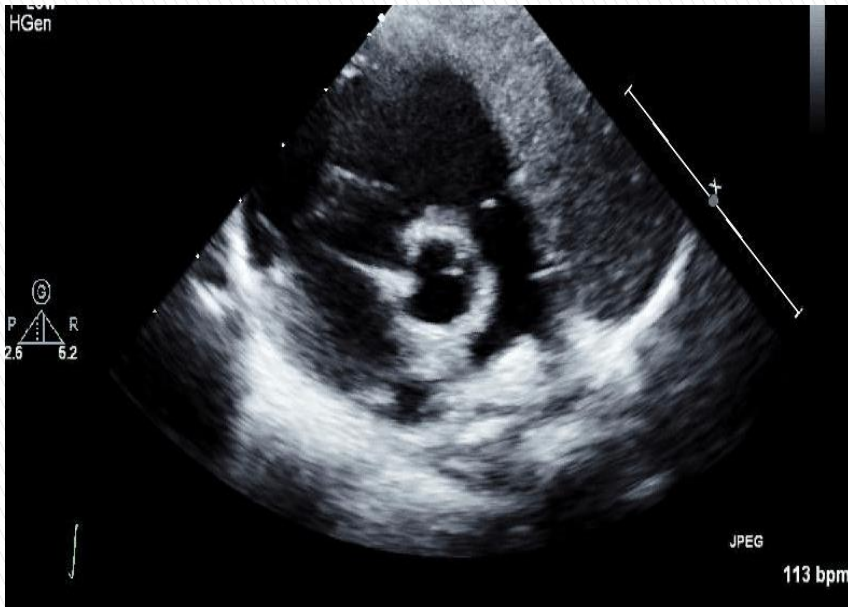


NORMAL

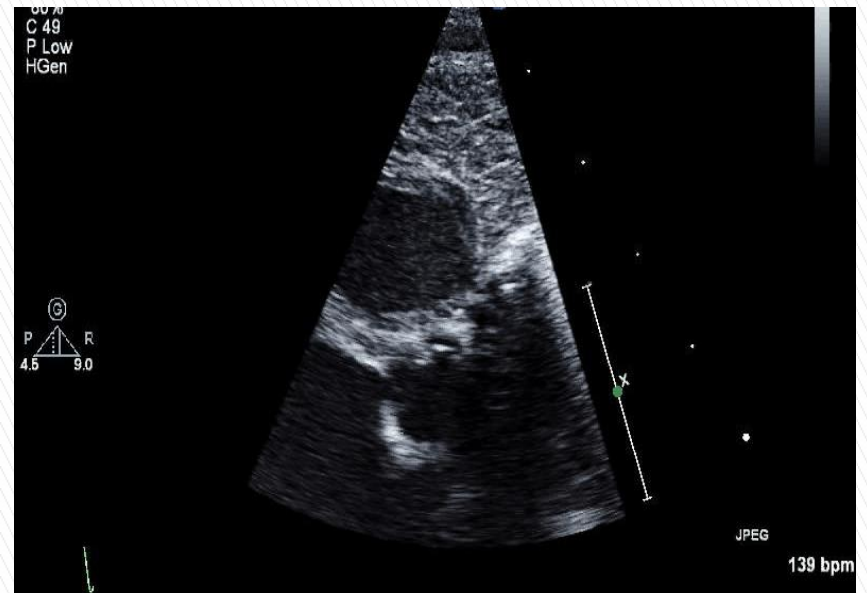


ABNORMAL

# Parasternal Short Axis



NORMAL

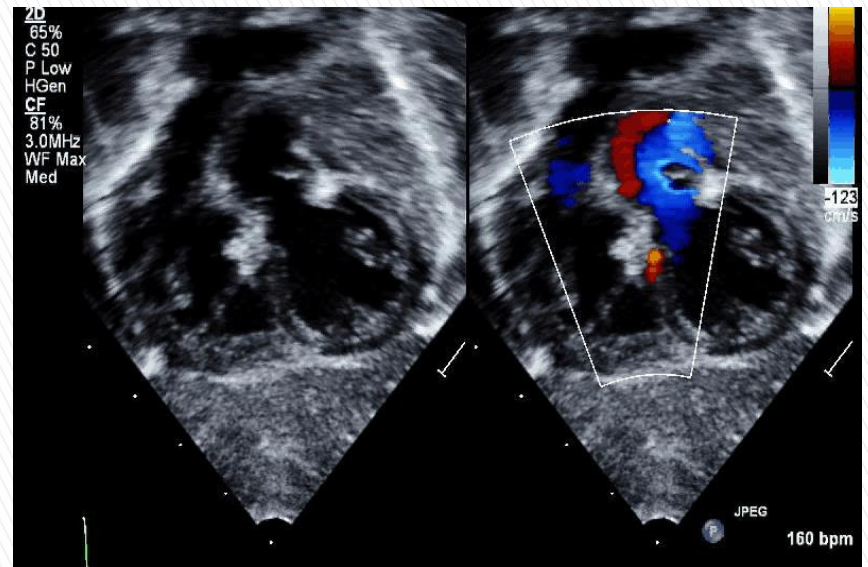


ABNORMAL

# Subcostal

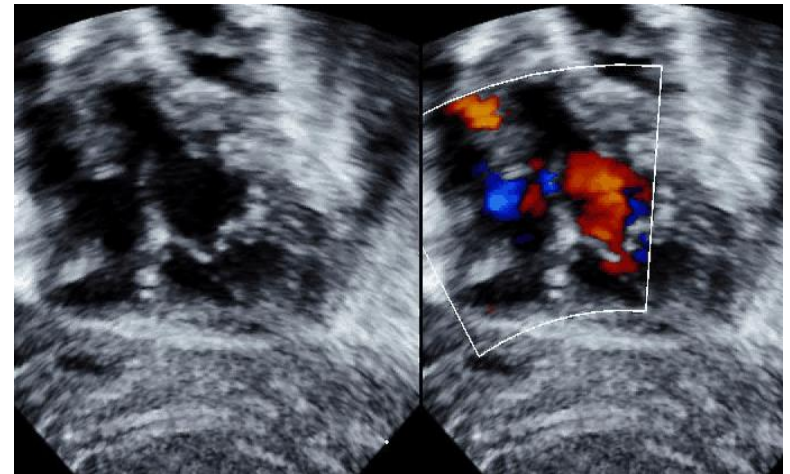
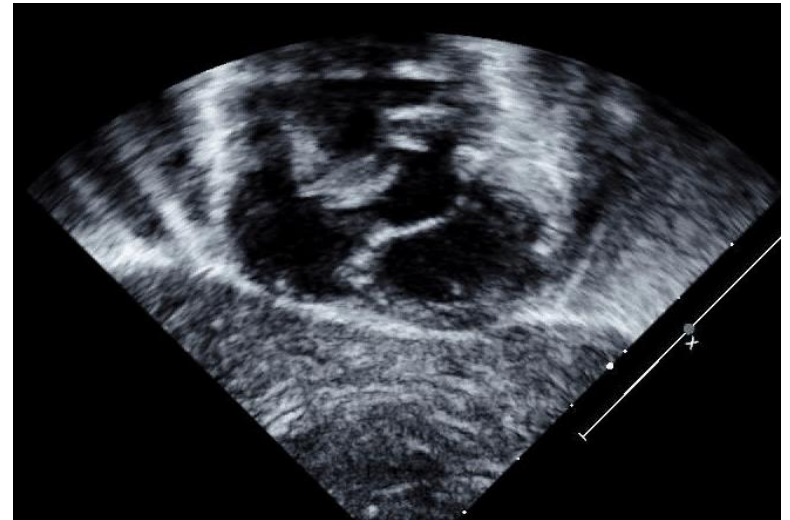
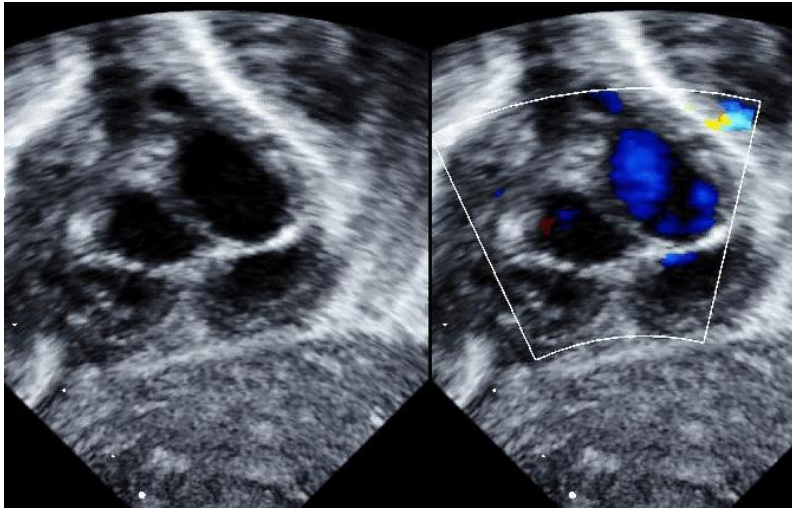


NORMAL

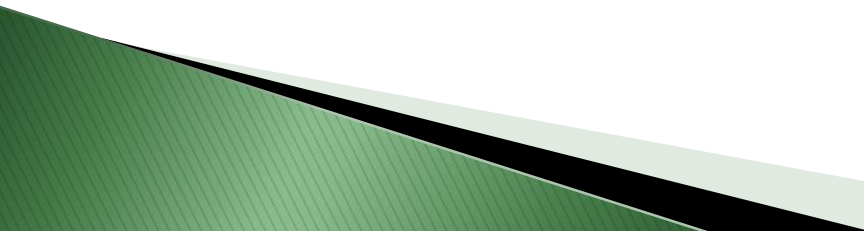


ABNORMAL

# Balloon Atrial Septostomy (BAS)

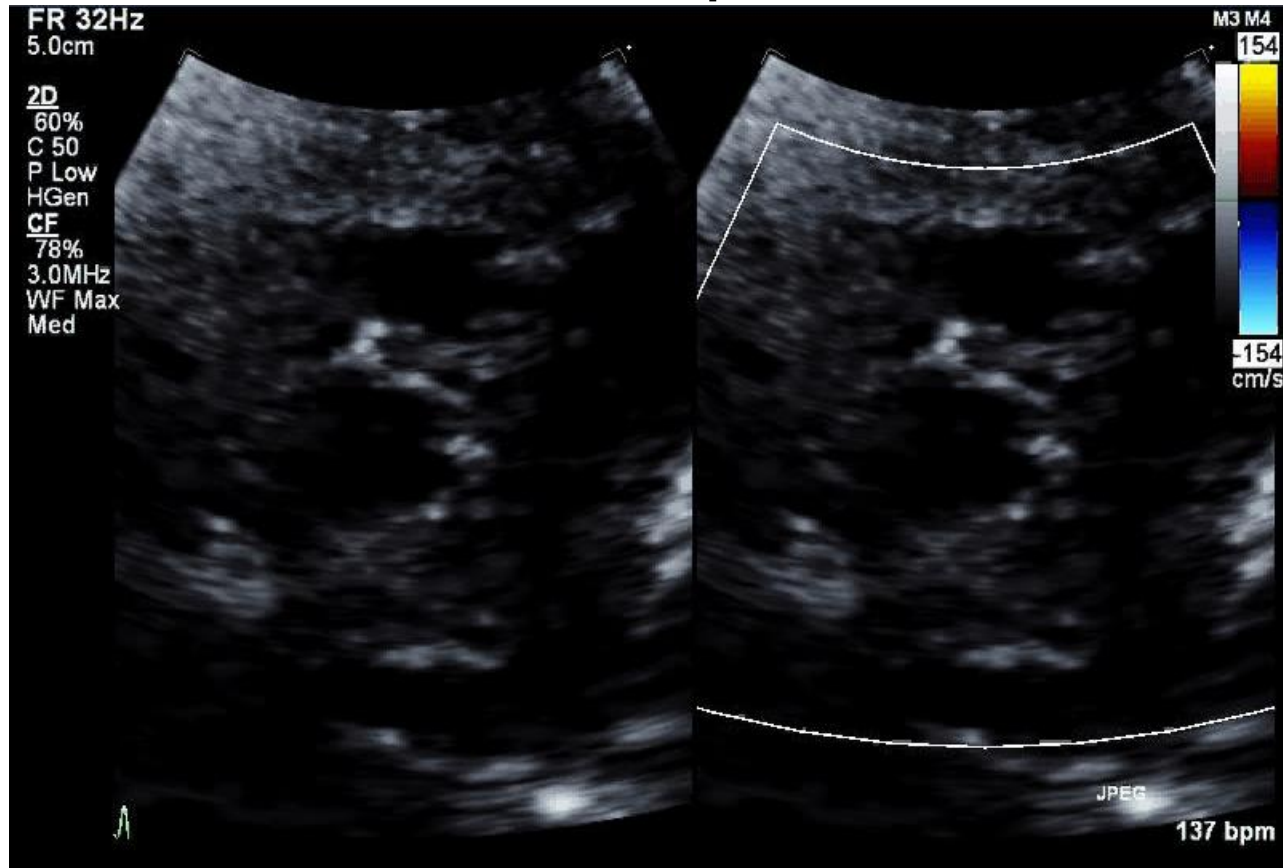


# Surgery


- ▶ Arterial switch operation (ASO)
  - ▶ Both great arteries are transected switched and reconnected to the correct ventricle
  - ▶ The critical feature of this operation is the transfer of the coronary arteries from the native aorta to the neo-aorta
  - ▶ The pulmonary arteries will be in front of the aorta and the right and left pulmonary arteries will straddle the ascending aorta (LeCompte Maneuver)
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# Surgery

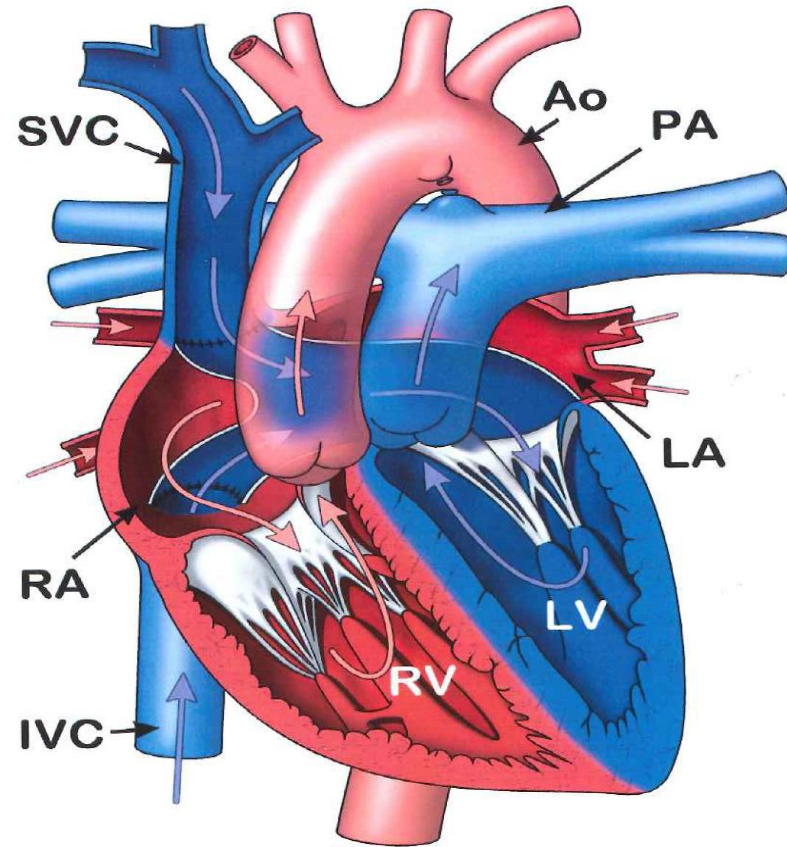
## ▶ Arterial switch operation (ASO)



# Surgery

- ▶ Atrial switch
  - ▶ One of the first procedures used to correct DTGA but is rarely used today and limited to patients with L-transposition of the great arteries
  - ▶ Also called Mustard and Senning operation
  - ▶ Deoxygenated blood is baffled(tunnel) through the atrial septum into left ventricle and out the pulmonary artery, oxygenated blood is rerouted through the atrial septum into the right ventricle and out the aorta
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# Atrial switch



# Coronary artery imaging

- ▶ Critical information for the surgeon
  - ▶ Can be very time consuming and difficult
  - ▶ There are different coronary artery patterns
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