

## Fetal Echocardiography-Outline

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### Fetal heart development:

1. The heart forms from mesoderm
  - a. 18-22days
2. Two strands form
  - a. Endocardial tubes
3. Tubes fuse on 22<sup>nd</sup> day
  - a. Primitive heart tubes
4. Heart elongates and loops
  - a. Becomes left and right asymmetry of the body.
5. Heart forms by 8 weeks gestation

### Fetal circulation

1. Three shunts
  - a. Foramen ovale
  - b. Ductus venosus
  - c. Ductus arteriosus
2. These shunts are small passages
  - a. Direct blood that needs reoxygenation
3. Foramen ovale: shunt bypasses liver
4. Ductus arteriosus: moves blood from PA to AO

### Fetal circulation contin.

1. Blood flow through heart

### Fetal heart assessment

1. Fetal exam should occur at 18-22weeks gestation
2. Sweep through gestational sac first
3. Look for heart beat
4. Orient position of fetus
5. Obtain heart rate
6. Establish situs-stomach/heart on same left side

### Heart location and size:

1. The heart is located 1/3 of thorax
2. The heart lies 45 degrees to the left of the anteroposterior line from spine to anterior chest wall

### 4 chambers of the heart:

1. First heart view obtained
2. Apical view: transverse at fetal chest

3. Left atrium=located close to spine
4. Right atrium=located anteriorly.
5. Septum should appear nice and continuous.
6. Septum defect-apical view
7. Subcostal-cephalad from apical view
8. Reduced septal defects

#### LVOT

1. Long axis view of AO
2. Angle transducer towards fetal right shoulder
3. Lvot assesses ventricles, size, position, valves.
4. Best view to evaluate aorta and IVS

#### RVOT

1. LONG AXIS View OF PA
2. Angle transducer to right fetal shoulder
3. LVOT AND RVOT criss cross and that confirms everything is normal
4. For short axis: angle probe more to the right

#### 3 vessel view

1. begin at the RVOT and continue moving towards the fetal head.
2. The three vessel view will then be visualized.
3. This view assesses the outflow of vessels and the correct location of the superior vena cava.