1 **Fetal Growth Assessment**

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2 **Estimated Fetal Weight**

3 **Intrauterine Growth Restriction**

- Decreased rate of fetal growth
- Fetal weight below 10% for gest. Age
- Greater risk for:
  - Antepartum death
  - Perinatal asphyxia
  - Neonatal morbidity
  - Developmental problems
- Asymmetric
- Symmetric

4 **Asymmetric Intrauterine Growth Restriction**

- Appropriate head dimensions, but small abdominal size
- More common
- Usually caused by placental problems
  - Maternal diseases
    - Diabetes
    - Hypertension
    - Cardiac or renal disease
    - Abruptio placentae
    - Drug use/smoling
  - No maternal problems at all-ideopathic

5 **Symmetric Intrauterine Growth Restriction**

- All indices of fetus are small
  - Head, abdomen, and long bones
- Typically from insult in early first trimester

6 **IUGR-Sonographic Parameters**

- BPD not a good predictor
  - Head sparing theory
  - Head shape may be abnormal
- Abdominal Circumference very reliable
  - Liver size changes with restriction
  - Not good at determining gestational age
- Femur Length
  - Correlates to neonatal crown-heel length
- HC/AC
  - Useful for asymmetric IUGR

7 **Biophysical Profile**

- Fetal Breathing Movements
  - Simultaneous inward movement of the chest wall with outward movement of the abdominal wall during inspiration
- Fetal Body Movements

- Three definite extremity or trunk movements within 30 min
- Fetal Tone
  - One episode of extension and immediate return to flexion of an extremity or the spine
- Amniotic Fluid Volume
  - Evaluate four quadrants- 2 of the pockets measure at least 2cm

8 **Doppler Study**

- Umbilical artery
  - S/D ratio should be <3.o
  - Want continuous diastolic flow
- Middle Cerebral Artery
  - S/D ration should be >3.0
- Maternal Uterine Artery
  - S/D ratio should be below 2.6

9 **Ductus Venosus Study**

- First trimester screening for aneuploidic anomalies
- Second trimester
  - IUGR
  - Cardiac compromise
- Triphasic Waveform is normal-always forward
  - S=ventricular systolic contraction
  - D= early ventricular diastole (second peak)
  - A= atrial contraction, (lowest point)

10 **Macrosomia**

- Birth weight >90th percentile or >4000 grams
- Maternal diabetes mellitus
  - Increased levels of glucose and result in fetal hyperinsulinemia
- Head and shoulder injuries, cord compression
- Mechanical macrosomia
  - Generally large
  - Generally large and with big shoulders
  - Normal size trunk but big heads
- Metabolic macrosomia
  - Diabetic pregnancies

11 **Which is which Doppler?**