



1. Amniocentesis – sampling of amniotic fluid
  - (a) Most common indication during second trimester is cytogenetic analysis of fetal cells
    - (i) Occasionally used to determine AFP levels and acetylcholinesterase activity to diagnose fetal neural tube defects
  - (b) Not recommended prior to 15 weeks' gestation due to a high incidence of procedure-related pregnancy loss
  - (c) Performed later in pregnancy for non-genetic indications:
    - (i) Measures lecithin and sphingomyelin to assess fetal lung maturity
    - (ii) Amnioreduction in pregnancies with severe polyhydramnios
    - (iii) Confirm preterm rupture of membranes (PROM)
    - (iv) Confirm or exclude an intra-amniotic infection
    - (v) For spectrophotometric analysis of amniotic fluid bilirubin to determine fetal Rh type in pregnancies complicated by isoimmunization
2. Oligohydramnios – decreased amniotic fluid volume
  - (a) In the latter half of pregnancy (and in the absence of ruptured membranes) reflects chronic uteroplacental insufficiency and/or increased renal artery resistance causing diminished urine output
  - (b) Predisposes fetus to umbilical cord compression, which may cause intermittent fetal hypoxemia, meconium passage, or meconium aspiration
3. Polyhydramnios – increased amniotic fluid volume
  - (a) Typically indicates fetal anatomic abnormalities (e.g., esophageal atresia)