

# FETAL ULTRASOUND MEASUREMENTS AND GUIDELINES



## 2<sup>ND</sup> TRIMESTER MEASUREMENTS

### QUALITY CRITERIA

#### BPD

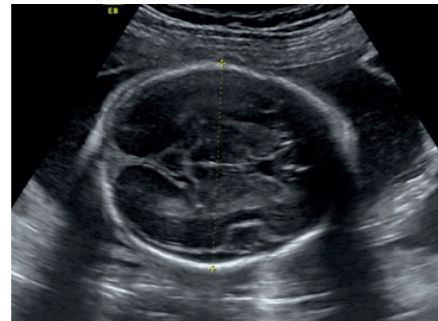
- Cross-sectional view of the fetal head at the level of the thalami
- Ideal angle of insonation is 90° to the midline echoes
- Symmetrical appearance of both hemispheres
- Continuous midline echo (falx cerebri) broken in middle by the cavum septi pellucidi and thalamus
- No cerebellum visualized
- Adequate zoom and caliper placement

#### AC

- Transverse section of the fetal abdomen (as circular as possible);
- Umbilical vein at the level of the portal sinus;
- Stomach bubble visualized;
- Kidneys should not be visible.
- Adequate zoom and caliper placement

#### FEMUR

- The femoral diaphysis length is imaged optimally with both ends of the ossified metaphysis clearly visible
- The longest axis of the ossified diaphysis is measured
- An angle of insonation between 45° and 90° is ideal
- adequate zoom and caliper placement



BPD



AC

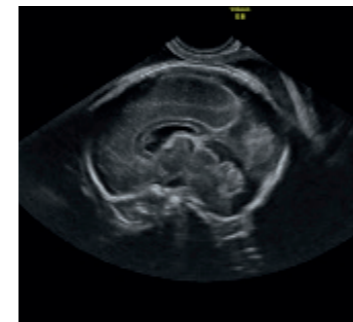


FEMUR

## MID TRIMESTER ANATOMY



ORBITS



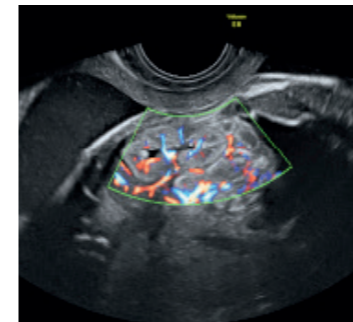
CORPUS CALLOSUM



THORAX



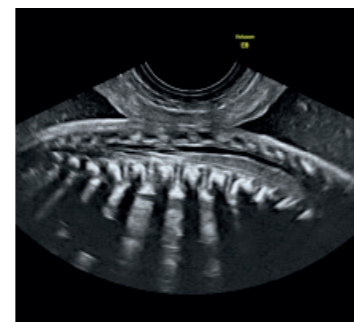
CEREBELLUM



KIDNEYS



PROFILE



SPINE



HEART



BLADDER

#### HEAD

- Intact cranium
- Cavum septi pellucidi
- Midline falx
- Thalami
- Cerebral ventricles
- Cerebellum
- Cisterna magna

#### NECK

- absence of masses (e.g. cystic hygroma)

#### FACE

- Presence of both orbits
- Median facial profile
- Upper lip intact
- Mouth present

#### CHEST/HEART

- Normal appearing shape / size of the chest and lungs
- Presence of heart activity
- Four-chamber view of the heart in normal position
- Aortic and pulmonary outflow tracts
- No evidence of diaphragmatic hernia

#### ABDOMEN

- Stomach in normal position
- Bowel pattern
- Kidneys
- Urinary bladder
- Cord insertion site

#### SKELETAL

- No spinal defects or masses (transverse and sagittal views)
- Arms and hands present, normal relationships
- Legs and feet present, normal relationships

#### PLACENTA

- Absence of unusual vascular lakes (e.g. accreta) or accessory lobe

#### UMBILICAL CORD

- Three vessel cord
- Absence of marginal or velamentous insertion (e.g. vasa previa).

#### GENITALIA

- Male or female (optional)

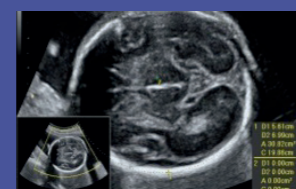


Poster based on the ISUOG practice guidelines for performance of the routine mid-trimester fetal ultrasound scan. ISUOG clinical Standards committee. Salomon LJ, Alfrevic Z, Berghella V, Bilardo C, Hernandez-Andrade E, Johnsen SL, Kalache K, Leung KY, Malinger G, Munoz H, Prefumo F, Toi A, Lee W; Ultrasound Obstet Gynecol. 2011 Jan;37(1):116-26. doi: 10.1002/uog.8831. Images courtesy of JP Bault. Images are for educational purposes only. They do not correspond necessarily to standardized planes to be produced as part of routine US examination.

### IMAGE QUALITY PROCESS:

- 1 Depth adaptation
- 2 Focal adaptation
- 3 Frequency adaptation
- 4 Gain adaptation

### FETAL VOLUSON\* TOOLS:



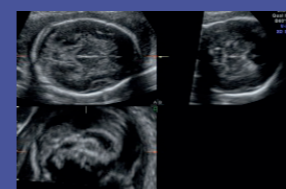
Sonobiometry productivity



SonoNT quality tools



Scan Assist productivity



Multiplanar view brain analysis



STIC heart analysis



OmniView spine analysis



HDlive face analysis