**FETAL ULTRASOUND MEASUREMENTS AND GUIDELINES**

### 1ST TRIMESTER MEASUREMENTS

**QUALITY CRITERIA**

**CRL**
- The midline facial profile, fetal spine and rump should ALL be visible in one complete image
- There should be fluid visible between the chin and the chest of the fetus AND the profile line should form an acute angle with the CRL line before the rump
- The fetus should be as horizontal with line connecting the crown and rump at between 75-90º to the ultrasound beam
- The crown and rump should be clearly visible at both ends
- The intersection of the calipers should be on the outer borders of the skin over the crown and rump
- The fetus should fill more than 2/3rd of the image clearly demonstrating the crown and rump

**NT**
- The fetus should be in neutral position
- Skin continuity should be clearly visible
- Strict sagittal section
- Calipers should be placed correctly (on-on) to measure NT
- The amniotic membrane should be identified separately from the fetus
- Adequate zoom

**BPD**
- Largest true symmetrical axial view of the fetal head
- Midline third ventricle and inter-hemispheric fissure and choroid plexi should be visible
- Correct axial orientation is confirmed by including both anterior horns and low occipital lobes of the cerebral ventricles in the image, whilst keeping the plane above the cerebellum
- Adequate zoom

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**1ST TRIMESTER ANATOMY**

**CROWN-RUMP LENGTH**

**NUCHAL TRANSLUCENCY**

**BIPARIETAL DIAMETER**

**HEAD**
- Present
- Cranial bones
- Midline falx
- Choroid filled ventricles

**NECK**
- Normal appearance
- Nuchal translucency (if accepted after informed consent and trained/certified operator available)

**FACE**
- Eyes with lens
- Nasal bone
- Normal profile/mandible
- Intact lips

**SPINE**
- Vertebra longitudinal and axial
- Intact overlying skin

**CHEST**
- Symmetrical lung fields, no effusions or masses

**HEART**
- Cardiac regular activity
- 4 symmetrical chambers

**ABDOMEN**
- Stomach present in LUQ
- Abdominal wall
- Normal cord insertion
- Bladder
- Kidneys
- No umbilical defects

**EXTREMITIES**
- 4 limbs with 3 segments
- Normal orientation of hands and feet

**PLACENTA**
- Size and texture

**CORD**
- Three vessel cord

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**IMAGE QUALITY PROCESS:**

1. Depth adaption
2. Focal adaption
3. Frequency adaption
4. Gain adaption

**FETAL VOLUSON* TOOLS:**

- Sonobiometry productivity
- SonoNT quality tools
- Scan Assist productivity
- Multiplanar view brain analysis
- STIC heart analysis
- OmniView spine analysis
- HDlive face analysis

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