

# FETAL ULTRASOUND MEASUREMENTS AND GUIDELINES



## 1<sup>ST</sup> TRIMESTER MEASUREMENTS

### QUALITY CRITERIA

#### CRL

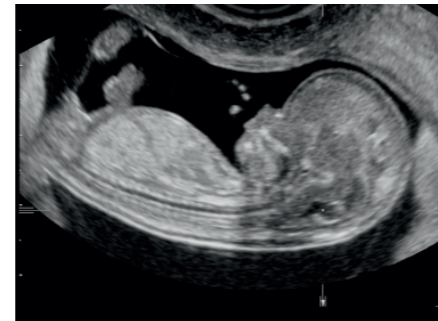
- The midline facial profile, fetal spine and rump should ALL be visible in one complete image
- There should be fluid visible between the chin and the chest of the fetus AND the 'profile line' should form an acute angle with the CRL line before the rump
- The fetus should be as horizontal with line connecting the crown and rump at between 75-90° 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



CROWN-RUMP LENGTH



NUCHAL TRANSLUCENCY

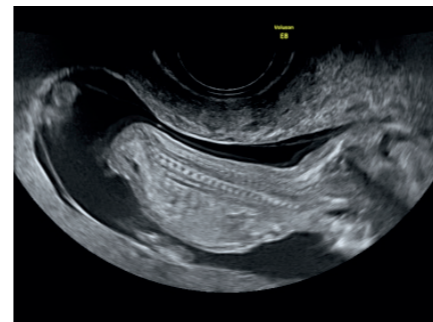


BIPARIETAL DIAMETER

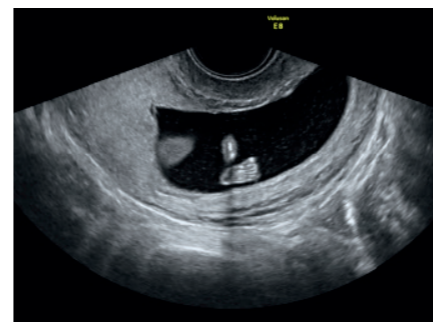
## 1<sup>ST</sup> TRIMESTER ANATOMY



KIDNEY



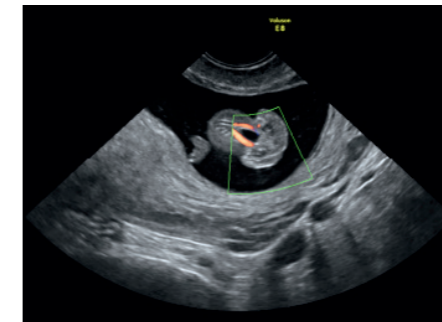
SPINE



EXTREMITIES



HEART



BLADDER



ABDOMEN

#### 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

NT = Nuchal translucency;  
LUQ = left upper quadrant;

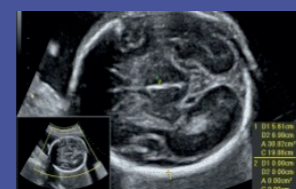


### IMAGE QUALITY PROCESS:

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

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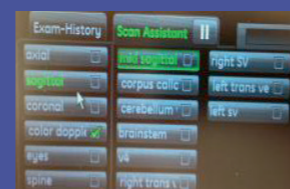
### FETAL VOLUSON\* TOOLS:



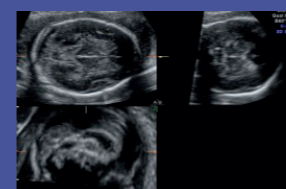
Sonobiometry productivity



SonoNT quality tools



Scan Assist productivity



Multiplanar view brain analysis



STIC heart analysis



OmniView spine analysis



HDlive face analysis