E-Cervix™ Guideline

: A quantification tool designed to measure the stiffness of the cervix using elastography for prediction of Preterm Birth.

How to get in E-cervix™

Select EV3-10B, EV2-10A, EV2-12, VR5-9, EA2-11B. EA2-11AR, EA2-11AV Probe → E-cervix Preset → Select Elastoscan+ on the touchscreen.

Preparation

- The maternal **bladder should be empty** before examination.

Obtaining B-mode

- Display the apex of the image at the top of the monitor, and the fetal part on the left side of the image.
- Obtain the **mid-sagittal plane** of the cervix in which the endocervical canal is clearly described and the **anterior width of the cervix is equal to the posterior width**.

Acquisition of cervical strain

- **Do not apply pressure** with the probe onto the anterior cervix.
- When the optimal cervical image is obtained, hold and wait for motion guide bar to turn completely green color. **(Recommend to use auto-freeze setting for motion bar)**

  1) Allow to breathe normally to patient during the time of acquisition.

  2) Try again when active fetal movements occur during the acquisition, especially fetal limb movement in breech presentation, because it may affect cervical strain.

❖ **Motion Guide Bar (Reliability Indicator)**

- The steadiness of probe is controlled by motion bars.
- All green -> Acquire the strain value.
- Each block indicates a time slot which is taken to collect enough frames.
- Important role in obtaining more reliable elastogram.

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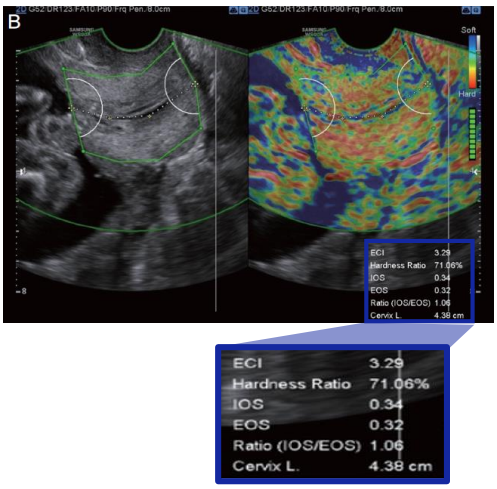
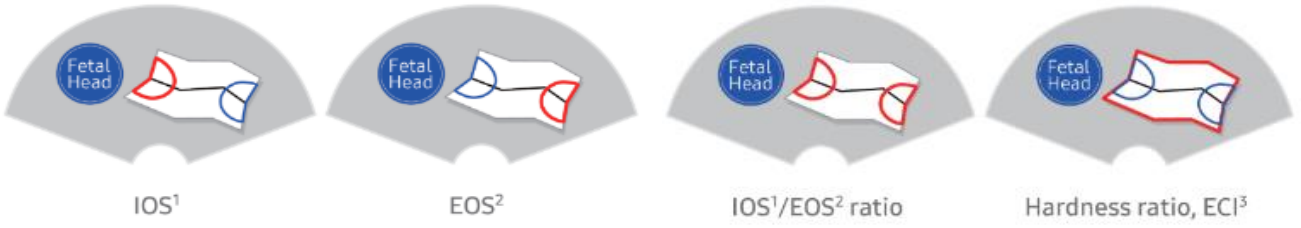
ROI Positioning

- Recommend to measure on grayscale image.
- By selecting either 2 or 4-point ROI, draw a line along the endocervical canal between the internal and external os of the cervix.
- Depends on cervix length & shape, select 2-point or 4-point
  - Use a 2-point, if the endocervical line is straight & short cervix length.
  - Use a 4-point, if the endocervical line is curved & long cervix length.
- Try to include the entire cervix **without** including adjacent structures such as the **bladder or vaginal wall**.



• **ECI**	• Elasticity Contrast Index • ECI[3] represents how much heterogeneity or homogeneity is inside of the nodule within ROI box • Value range: 0 (homogeneity) – 81 (heterogeneity)
• **Hardness Ratio**	• 30% hardness area in cervix ROI, value range: 0 (soft) - 100% (hard). • Can evaluate overall cervix stiffness.
• **IOS**	• Strain mean level in IOS[1] area. Value range: 0 (hard) - 1 (soft)
• **EOS**	• Strain mean level EOS[2] area. Value range: 0 (hard) - 1 (soft)
• **Ratio (IOS[1]/EOS[2])**	• IOS[1] strain level/EOS[2] strain level



Measurement

- Obtain at least 3 times, and the average result is usually used.
- Check 5 elastographic parameters : IOS, EOS, ratio[IOS/EOS], ECI, hardness ratio, cervical length

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