

# UIHC FETAL DIAGNOSIS AND THERAPY OBSTETRIC ULTRASOUND PROTOCOL INDICATIONS FOR TRANSVAGINAL CERVICAL LENGTH

## Background:

- Cervical shortening is thought to be one of the early steps of the parturition process.
- Progressive cervical shortening in the second trimester is associated with increased risk of spontaneous preterm delivery.
- Given that effacement of the cervix begins at the internal cervical os, shortening can be detected on ultrasound prior to the ability to detect changes on physical exam.
- Risk factors for preterm birth: prior preterm birth, prior cervical procedures, Mullerian anomalies, multiple gestations.
- Prior preterm birth includes singleton delivered between 16 and 36 6/7 weeks due to spontaneous preterm labor, PPROM, advanced cervical dilation or effacement 20-24 weeks.
- Incidence of short cervix < 20 mm (transvaginal) in low risk women is 0.8%.
- Cervical length <25 mm (10th percentile) is consistently associated with increased risk of spontaneous preterm delivery
  - Especially if identified <24 weeks gestation or in a patient with a prior preterm delivery
- Cervical length at 24-28 weeks can be used for risk stratification for likelihood of preterm delivery in women in a singleton pregnancy with preterm contractions/labor if the Bishop score is  $\leq 6$ . Cervical length > 25 mm at 24-28 weeks has a 99% negative predictive value for preterm delivery.
- Cervical length < 24 weeks in mono/di twins with TTTS is also used for risk stratification and eligibility for laser ablation of intertwiner anastomoses.
- Unknown predictive value of cervical length measurements in multiple gestations.

## Protocol:

### Low Risk

- Singleton gestation without prior preterm delivery: **Screen transabdominally at the time of routine second trimester anatomy ultrasound (18-24 wk); midline sagittal view of the lower uterine segment. Only screen once per pregnancy.**
- If cervix measures <35 mm, perform transvaginal ultrasound
- If cervix <25 mm on transvaginal ultrasound, begin vaginal progesterone. Cerclage not indicated.

### Intermediate Risk

- Mullerian anomaly
- Prior LEEP or Cone biopsy

**Screen transvaginally at the time of routine second trimester anatomy ultrasound (18-24 wk).**

- If cervix <25 mm, recommend vaginal progesterone. Cerclage not indicated.

### **High Risk**

1. Singleton gestation with prior preterm delivery <37 weeks but > 30 wks, includes a history of PPRM: Screen transabdominally at the time of routine second trimester anatomy ultrasound; midline sagittal view of the lower uterine segment.
  - If cervix measures <35 mm, perform transvaginal ultrasound. For management of cervical length, see below.
2. Singleton gestation with prior preterm delivery < 30 weeks, includes a history of PPRM or second trimester loss: **Screen transvaginally every 2 weeks from 16-24 weeks**
  - If cervix >30 mm, continue scheduled surveillance.
  - If cervix 25-30 mm, increase screening to weekly visits.
  - If cervix <25 mm, discuss cerclage and recommend progesterone if not already using.

### **Preterm contractions/labor at 24-28 weeks in a singleton gestation, Bishop score < 6:**

- Perform transvaginal cervical length.
- If the cervix is > 25 mm, tocolysis and betamethasone are not indicated.
- If the cervix is < 25 mm, betamethasone and tocolysis for 48 hours are indicated.

### **Mono/di twins with TTTS prior to 24 weeks:**

- Perform transvaginal cervical length.
- Cervical length < 25 mm is associated with an increased risk for preterm delivery after laser therapy.

### **Bishop Scoring:**

Score	0	1	2	3
Dilation	Closed	1-2 cm	3-4 cm	5 cm
Length	> 4 cm	3-4 cm	1-2 cm	0
Consistency	Firm	Medium	Soft	--
Position	Posterior	Midline	Anterior	--
Station	-3	-2	-1,0	+1,+2

### **Technical Requirements:**

- The patient should have an empty bladder.
- Image: maternal cephalad to the left of the screen, insert transducer in anterior fornix until cervix is visualized-avoid excessive pressure. Cervix should occupy 50% of the screen with equal thickness of anterior and posterior aspects of the cervix.
- Image of the cervix should include v-shaped notch at internal os, triangular area of echodensity at the external os and endocervical canal.
- If endocervical canal curves, use 2 straight lines rather than tracing the canal.
- Obtain 3 measurements, variance of < 10%. Report shortest measurement.
- Apply abdominal pressure for 15 seconds, allow a few minutes. If short cervix develops, record 3 measurements.

- If cervical funneling is observed, usually associated with a cervical length < 25 mm. Record cervical length but measurements of the depth and width of funnel is not needed. Note funneling present or not in the ultrasound report.
- Also note in the report if sludge is present in the amniotic fluid at the cervix. Sludge and a CL < 25 mm is associated with an increased risk of preterm delivery.

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