



## Can transabdominal ultrasound exclude short cervix?

**No**, transabdominal ultrasound should not be used instead of transvaginal ultrasound for cervical length screening for prediction of preterm birth, unless transvaginal ultrasound is not available.

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### ► EXPERT COMMENTARY

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**P**reterm birth (PTB) remains a major cause of perinatal morbidity and mortality, and so its prediction and prevention are 2 of the most important issues in obstetrics. Cervical length (CL) measured by ultrasound has been shown to be the best predictor; several interventions (vaginal progesterone and cerclage) have been shown to be effective at reducing PTB if a short CL is identified. In fact, both the American College of Obstetricians and Gynecologists (ACOG) and the Society for Maternal-Fetal Medicine (SMFM) recommend CL being measured every 2 weeks from 16 to 23 weeks in singletons with prior spontaneous PTB (sPTB), with cerclage placed for CL less than 25 mm. Moreover, both ACOG and SMFM recommend that “universal CL screening” (CL measured in singletons without a prior sPTB) be considered as a single measurement at about 18 to 23 weeks.

### Details of the study

Rhoades and colleagues present data on CL screening done by transabdominal ultrasound

(TAU), as an alternative to transvaginal ultrasound (TVU). This study confirms early data:

1. TAU cannot visualize CL in several women (20.6%).
2. To make sure a high sensitivity (92.9% in this study) is achieved to detect a TVU CL less than 30 mm, a high cutoff (in this case 35 mm) needs to be used with TAU. Nonetheless, 7% of women with a short TVU CL would not be detected, raising clinical and legal issues.
3. A high percentage (in this case 32.4%; 103/318) of women screened by TAU would screen positive (TAU CL less than 35 mm) and therefore need to have a TVU anyway.
4. Overall, more than 50% (in this study 53%–20.6% because TAU could not visualize CL, and 32.4% because TAU was less than 35 mm) of women having TAU CL screening would need to have TVU anyway! In the largest study comparing TAU to TVU CL screening (TABLE<sup>1-6</sup>, page 51), 66% of women screened by TAU would have to be screened also by TVU.<sup>7</sup>

There are several other reasons why TVU is considered the gold standard for CL screening, and instead TAU CL should be avoided as possible. All randomized controlled trials that showed benefit from interventions (vaginal progesterone, cerclage, pessary) aimed at decreasing PTB in women with short CL used TVU CL screening and never TAU CL screening. In addition, TAU CL is less accurate than TVU CL screening. On TAU, fetal parts can obscure the cervix, obesity makes it hard to visualize CL, the distance between probe and cervix is longer, manual pressure can mask

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CONTINUED ON PAGE 51



**Transabdominal ultrasound should be avoided as possible**

**TABLE Studies comparing transabdominal versus transvaginal ultrasound<sup>1-6</sup>**

Study	Gestational age, wk (mean)	No. of women studied (no. of women with TVU CL <25 mm)	Bladder status at US	US results blind	TAU cutoff, mm	TAU CL longer/shorter than TVU	TAU CL not attainable, % of patients	Sensitivity	Follow-up TVU needed
Saul 2008 <sup>1</sup>	14-34 (22)	191 (14)	Postvoid	Yes	≤30	Same	NK	100%	NK
Stone 2010 <sup>2</sup>	18-20	203	Postvoid	No	NK	Shorter	NK	Not reported	Not reported
To 2000 <sup>3</sup>	22-24 (23)	149	Prevoid (bladder volume calculated)	NK	NK	NK	51%	NK	NK
Hernandez-Andrade 2012 <sup>4</sup>	6-39 (24)	220 (20)	Prevoid	Yes	≤25 ≤30	Longer	NK	43% 57%	NK
Friedman 2013 <sup>5</sup>	18-24 (20.5)	1217 (76)	Prevoid Postvoid	No	≤36 ≤36	Shorter	6% 17%	96% 96%	60% NK
Rhoades 2015 <sup>6</sup>	17-23 (20)	404	Postvoid	No	≤35	Shorter	20.6%	93%	32.4%

Abbreviations: CL, cervical length; NK, not known; TVU, transvaginal ultrasound; TAU, transabdominal ultrasound; US, ultrasound.

CL shortening, and bladder filling can elongate CL.<sup>8</sup> Cost-effectiveness studies show that TVU CL screening is more effective, and less costly, compared with TAU CL screening, even in singletons without a prior sPTB.<sup>9</sup>

Societies such as ACOG and SMFM all have recommended TVU CL for prediction and prevention of PTB, over TAU CL.<sup>10,11</sup> Importantly, a TVU CL should be done by sonographers educated and trained for-

mally, through such programs as those made available by SMFM.<sup>12</sup>

#### WHAT THIS EVIDENCE MEANS FOR PRACTICE

If CL assessment is done, TVU should be preferred, as it is the gold standard, and not TAU.

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