

Maine Medical

PARTNERS

Women's Health

A department of Maine Medical Center

Guideline for Use of Fetal Vibroacoustic Stimulation (VAS)

Background and rationale:

Acoustic stimulation of the nonacidotic fetus may elicit fetal heart rate accelerations that appear to be valid in the prediction of fetal well-being. Such stimulation offers the advantage of safely reducing the overall testing time, and reducing false negative testing, without compromising detection of the acidotic fetus.

Patient selection:

VAS should not be performed in the presence of:

- gestational age < 32 weeks
- oligohydramnios
- fetal heart rate pattern (NIH Category 3) or biophysical profile (score ≤ 4 , or ≤ 6 if oligohydramnios present) raising concern for fetal well-being (sinusoidal pattern, absent baseline variability, recurrent late or variable decelerations, bradycardia)
- reactive fetal heart rate or biophysical score ≥ 8

Procedure:

1. VAS is an adjunct to tests of fetal well being. Therefore, it requires an order from a provider credentialed to order and interpret tests of fetal well being.
2. An artificial larynx (ideally a commercially made model especially designed for the purpose) is positioned on the maternal abdomen and a stimulus of 1-2 seconds is applied.
3. This may be repeated up to 3 times for progressively longer durations up to 3 seconds' duration to elicit fetal heart rate accelerations.

Actions:

1. In response to VAS, a fetal heart rate acceleration of 15bpm x 15 sec is a positive or reassuring result that appears to be a valid predictor of fetal well being.
2. Absence of a 15bpm x 15 sec acceleration following VAS does not necessarily signify lack of fetal well being, but does warrant further evaluation.
3. The fetal response to the VAS should be
 - a) noted in the patient's medical record
 - b) directly related to the ordering provider

Note:

VAS may provoke unusual fetal heart rate patterns including tachycardia (≥ 160 bpm) or decelerations. Such patterns do not necessarily represent fetal compromise and must be interpreted with caution.

References:

1. ACOG Practice Bulletin 145, July 2014 (reaffirmed 2016). Antepartum fetal surveillance
2. Macones G, Hankins GDV, Spong CY, Hauth J, Moore T. The 2008 National Institutes of Child Health and Human Development Workshop Report on Electronic Fetal Monitoring: Update on Definitions, Interpretations, and Research Guidelines. *Obstet Gynecol* 2008;112:661-6.
3. Turitz AL, Bastek JA, Sammel MD, Parry S, Schwartz N. Can fibroacoustic stimulation improve the efficiency of a tertiary care antenatal testing unit? *J Matern Fetal Neonatal Med* 2012;25:2645-50.
4. Tan KH, Smyth RMD, Wei X. Fetal vibroacoustic stimulation for facilitation of tests of fetal wellbeing. *Cochrane Database of Systematic Reviews* 2013, Issue 12.