Subject: Antepartum Fetal Surveillance (NST/CST)	
REVISION DATE: May 2013 REPLACES: L&D Contraction Stress Test; OB Triage – Fetal Heart Tones, Assessing; OB Triage – Non Stress Test	WRITTEN: April 1994 SUPERSEDES DATE: 6/12 REVIEWED DATE: 12/14

1. REFERENCES:

1.1.Lippincott, Williams, & Wilkins (Jan 5,2013). Non-stress test. Retrieved April 17,2013 from

1.2.ACOG Practice Bulletin (2012). Antepartum Fetal Surveillance retrieved April 17,2013 from

1.3. Lippincott, Williams, & Wilkins (Jan 5, 2013). Contraction stress test. Retrieved April 17, 2013 from

2. General:

2.1**.** A non-stress test (NST) is a noninvasive test performed to determine the fetal heart rate reactivity and determine if the fetus is at high risk for a poor outcome from labor and delivery.

3. Standards of Practice/Guidelines of Care:

3.1. See Electronic Fetal Monitoring guideline to place patient on Electronic Fetal Heart Monitor (EFHM).

3.2. Monitor patient for a minimum of 20 minutes.

3.3. Fetal heart rate (FHR) accelerations must be at least 15 beats/minute above the baseline FHR if the fetus is $\geq$ 32wks, if the fetus is <32wks but $\geq$ 28wks accelerations should be at least 10 beats/minute above baseline.

3.4. After 20 minutes evaluate the FHR. A minimum of two accelerations and no decelerations must be present in 20 minutes for a reactive tracing. If two accelerations are not present continue monitoring for an additional 20 minutes.

3.5. After 40 minutes if two accelerations are not present then the tracing is nonreactive and indicates further testing.

3.6. If two fetal heart rate accelerations are present and no decelerations the tracing is considered reactive.

4. Special Considerations:

4.1. If a nonreactive or abnormal FHR tracing occurs, notify the provider immediately.

4.2. If the patient states she is having regular contractions or it is noted on the monitor that regular contractions are occurring, don't discharge her until she has been evaluated further.

4.3. If the fetus is not moving, vibroaccoustic stimulation may be used to deliver vibratory and acoustic stimulation to the fetus. Place the vibroaccoustic stimulator upon the mom's abdomen usually along the fetal back and provide stimulus no more than 1-2 seconds. If no fetal response is noted the stimulus can be repeated up to three times with progressing longer durations up to 3 seconds, wait one minute between each stimulus.

4.4. Preterm infants between the gestations of 24-28wks will commonly (50%) have nonreactive NST's, and 15% of fetuses between 28-32wks will have nonreactive NST's.

> 4.4.1. It is important to note that once a fetus does have a reactive NST, regardless of gestational age, they should always have a reactive NST. It is important to understand and know what previous fetal monitoring episodes showed. If suddenly non-reactive when previously reactive, this is cause for concern and the provider should be notified.

4.5. Variable decelerations may be observed in about 50% of NSTs. If variables lasts <30seconds and are non-repetitive they indicate neither fetal compromise nor the need for obstetric intervention. If variables are noted to be repetitive (at least 3 in 20 minutes), even mild, provider must be notified.

5. Contraction Stress Test:

5.1. General:

> 5.1.1. The Contraction Stress Test (CST) is used to determine the fetal response to uterine contractions. If patient is noted to have 3 spontaneous contractions >40 seconds in 10 minutes no uterine stimulation is necessary.

5.2. Standards of Practice/Guidelines of Care:

> 5.2.1. Establish IV access for patient receiving oxytocin solution.
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> 5.2.2. Before any uterine stimulation via nipple stimulation or oxytocin administration, obtain a 20 minute NST.
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> 5.2.3. Nipple Stimulation:
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> > 5.2.3.1. Instruct patient to rub one nipple through her clothing for 2 minutes or until a contraction begins. If after this time the patient is not having adequate

contractions then nipple stimulation is stopped and restarted again after 5 minutes. If nipple stimulation is unsuccessful or oxytocin is preferred, start IV oxytocin.

5.2.4. Oxytocin administration:

5.2.4.1. Diluted oxytocin may be initiated at a rate of 0.5mU/min and increased by 1mU/min every 20 minutes until an adequate contraction pattern is achieved.

5.2.5. The CST is interpreted according to the presence or absence of late decelerations.

5.2.5.1. Negative: if no late or significant variable decelerations noted.

5.2.5.2. Positive: if late decels following 50% or more of the contractions even if less than 3 uc's/10min.

5.2.5.3. Equivocal: suspicious if intermittent late decels or significant variable decels.

5.2.5.4. Equivocal: hyperstimulatory if fetal heart rate decels occur with contractions more frequent than every 2 minutes or lasting longer than 90seconds.

5.2.5.5. Unsatisfactory: if fewer than three contractions in 10 minutes or if tracing is uninterpretable.

5.3. Contraindications:

5.3.1. Preterm labor or patients at risk for preterm labor

5.3.2. Preterm rupture of membranes

5.3.3. Placenta previa

5.3.4. History of extensive uterine surgery or classical incision