MATERNITY · FETAL SURVEILLANCE

Contraction Stress Test (CST)

NCLEX 2026 · Clinical Judgment · High-Yield Infographic

1 DEFINITION / OVERVIEW

- Evaluates **fetal response to induced uterine contractions** to assess placental function and reserve
- Performed **after 32–34 weeks**, typically when NST is **nonreactive** or BPP is equivocal
- Predicts how fetus will tolerate labor — unmasks **uteroplacental insufficiency** before it becomes a crisis
- Contractions induced via **IV oxytocin** or **nipple stimulation**

2 PATHOPHYSIOLOGY (SIMPLIFIED)

Contraction → ↓ uterine blood flow → transient fetal hypoxia → FHR response revealed

- **Healthy placenta:** fetus tolerates the dip — FHR remains stable, no late decelerations
- **Insufficient placenta:** inadequate O_2 reserve → **late decelerations** appear
- **Adequacy goal:** 3 contractions in 10 min, each lasting 40–60 seconds

3 RESULTS / INTERPRETATION ⚠ LANGUAGE IS FLIPPED

✓ Negative (GOOD)

- **No late decels** with adequate contractions
- Reassuring — fetus tolerating contractions well
- Implies placenta has adequate reserve for labor

Positive (BAD)

- **Late decels with ≥ 50%** of contractions
- Uteroplacental insufficiency
- Prepare for expedited delivery (often C-section)

⚠ Equivocal / suspicious

- Intermittent late or significant variable decels
- Hyperstimulation with decels = equivocal
- Repeat in 24 hr or proceed to BPP

⚠ Unsatisfactory

- < 3 contractions in 10 min OR poor tracing quality
- Unable to interpret reliably
- Repeat within 24 hr

4 PRIORITY NURSING INTERVENTIONS

- **Obtain signed consent** — invasive, carries risk of preterm labor
- **Position:** semi-Fowler's or **left lateral tilt** prevent supine hypotension
- **Assess** baseline maternal VS, FHR pattern, and uterine activity before starting
- **Apply** external fetal monitor (US transducer) + tocodynamometer
- Induce contractions: **nipple stimulation** OR **low-dose IV oxytocin** (piggyback, titrate)
- **STOP oxytocin IMMEDIATELY** if: late decels, tachysystole (> 5 UCs in 10 min), or contractions > 90 sec
- Monitor **30–60 min post-test** until contractions resolve and FHR returns to baseline
- **Notify provider** for positive, equivocal, or unsatisfactory results — document everything

5 PHARMACOLOGY

Oxytocin (Pitocin) — IV

Class: Uterine stimulant / posterior pituitary hormone analog

Mechanism: Binds oxytocin receptors on myometrium → induces rhythmic contractions

Dose: Start 0.5–1 mU/min IV piggyback; titrate q 15–30 min until adequate pattern

Side effects: Tachysystole, uterine rupture, water intoxication (antidiuretic effect), hypotension, nausea, late decels

Nursing: Always piggyback to mainline via infusion pump · Monitor I&O · STOP for nonreassuring FHR · Have $MgSO_4$ or terbutaline ready

Nipple stimulation (non-pharm alternative)

Mechanism: Stimulation triggers **endogenous oxytocin** release from posterior pituitary

Technique: Warm cloth or gentle rolling of ONE nipple × 2 min, rest 5 min, repeat; stop when contraction starts

Advantages: No IV, no medication, lower cost, patient-controlled

Caution: Risk of hyperstimulation — **STOP if contractions > 1 min or occur < 2 min apart**

Nursing: Bilateral stimulation only if unilateral fails — same precautions as Pitocin

6 NCLEX TEST TRAPS ⚠

- **LANGUAGE FLIP:** **POSITIVE = BAD, NEGATIVE = GOOD** — opposite of most medical tests students know
- **CST ≠ NST:** CST uses induced contractions; NST is passive observation of FHR with movement
- 🧯 **ABSOLUTE CONTRAINDICATIONS:** placenta previa, vasa previa, previous classical C-section or uterine surgery, preterm labor, PPROM, multiple gestation, cervical incompetence/cerclage
- **Late decels = UTEROPLACENTAL INSUFFICIENCY** (NOT cord compression — that causes *variable* decels; head compression causes *early* decels)
- Don't mix up: NST uses **reactive/nonreactive**; CST uses **negative/positive**
- **PRIORITY ACTION** if late decels appear during oxytocin: **STOP the oxytocin FIRST**, then reposition (left side) + O_2 10 L/min via non-rebreather + IV fluid bolus + notify provider
- "Adequate contractions" for CST = **3 in 10 min, each 40–60 sec**. Fewer = unsatisfactory, more/longer = hyperstimulation
- Post-test monitoring is **required** until contractions resolve — don't discharge too soon

7 PATIENT EDUCATION

✓ DO

- Empty your bladder before the test starts
- Eat a **light meal** 1–2 hours before — keeps you comfortable
- **Lie on your left side** for best placental blood flow
- Expect the test to last **1.5–2 hours total** (including post-monitoring)
- Sign consent — ask any questions first
- Arrange a ride home — you may feel tired or crampy

✗ REPORT IMMEDIATELY

- Sharp **abdominal pain** or strong, non-stopping contractions
- **Vaginal bleeding** or leaking fluid
- Decreased fetal movement (< 10 kicks in 2 hr)
- Severe headache, visual changes, or RUQ pain (preeclampsia signs)
- Fever, chills, or unusual vaginal discharge
- Dizziness or feeling faint during the test

8 MEMORY BOOSTERS & MNEMONICS

"Negative is Nice"
NEGATIVE CST = fetus handling labor well. Both start with "N" → reassuring result.

"Positive = Problem"
POSITIVE CST = placenta can't meet demand. Both start with "P" → placental insufficiency.

"3 in 10 for 40–60"
3 contractions in **10** minutes, each lasting **40–60 sec** = adequate pattern for valid test.

"Late = Lousy placenta"
LATE decelerations during CST = uteroplacental insufficiency. Both start with "L".

CST = "Contraction Stress Test"
We **stress** the placenta on purpose with contractions to reveal insufficiency before labor does.

"STOP the drop" 🧯
Late decels → **S**top oxytocin → **T**urn to left side → **O**$_2$ 10 L/min → **P**rovider notified

VEAL CHOP cue
Late decels → **P**lacental insufficiency. Same pattern that makes CST "positive."

NST vs CST — one word each
NST = "**Reactive**" (good). CST = "**Negative**" (good). Both "good" results are single words.

★ QUICK COMPARE: NST VS CST

Feature	Non-Stress Test (NST)	Contraction Stress Test (CST)
Contractions induced?	No — passive observation	Yes — oxytocin or nipple stim
What is assessed?	FHR response to fetal movement	FHR response to contractions
"Good" result	**Reactive** (≥ 2 accels, 15×15, in 20 min)	**Negative** (no late decels)
"Bad" result	Nonreactive → try VAS, then CST/BPP	Positive (late decels ≥ 50%) → deliver
Timing	≥ 28 weeks	≥ 32–34 weeks
Invasiveness / risk	Non-invasive, no risk	Risk of preterm labor, hyperstimulation
Consent needed?	No (routine)	**Yes** — signed consent