MATERNAL-NEWBORN • INTRAPARTUM

NCLEX 2026 ★ NGN

Fetal Heart Rate Decelerations

Early • Variable • Late — Recognition & Response

1 Definition / Overview

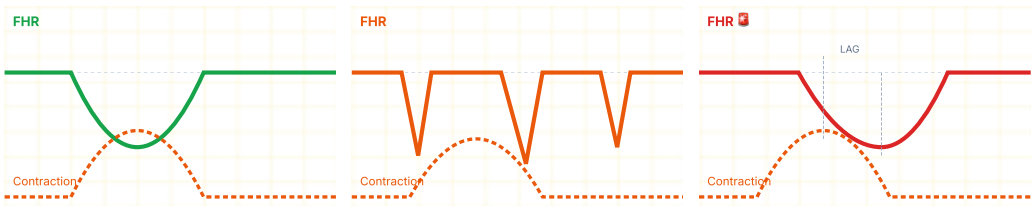
- **FHR decelerations** = transient decreases in fetal heart rate below baseline (normal baseline 110–160 bpm)
- Identified during labor via **external (Doppler/toco)** or **internal (fetal scalp electrode)** monitoring
- Pattern recognition determines if finding is **benign, caution, or emergency** → drives clinical judgment

2 Pathophysiology (Simplified)

EARLY → Contraction → Fetal head compressed → Vagal stimulation → ↓ FHR (mirrors contraction)

VARIABLE → Umbilical cord compressed → ↓ Fetal blood flow → ABRUPT ↓ FHR (V / U / W shape)

LATE → Uteroplacental insufficiency → ↓ O_2 delivery → Fetal hypoxia / acidosis → ↓ FHR AFTER contraction



EARLY
Mirrors contraction → Head compression

VARIABLE
V / U / W shape → Cord compression

LATE
Delayed/After contraction → Placental insuff.

3 Characteristics & Red Flags

✅ BENIGN

Early

- **Gradual** ↓ (onset→nadir ≥30 sec)
- **Mirrors** contraction exactly
- Nadir at **peak** of contraction
- Returns to baseline **by end** of contraction
- Seen in active labor / descent
- FHR rarely <100 bpm

⚠ CAUTION

Variable

- **ABRUPT** ↓ (onset→nadir <30 sec)
- Drop ≥15 bpm × ≥15 sec, <2 min
- **V / U / W shape**
- NO fixed timing w/ contraction
- Common w/ ROM, oligohydramnios
- **RED FLAG** if <70 bpm, prolonged, or slow return

🚨 EMERGENCY

Late

- **Gradual** ↓ (looks like early)
- Nadir **AFTER** peak of contraction
- Returns to baseline **AFTER** contraction ends
- Associated: **HTN, preeclampsia, DM, abruption, oxytocin, maternal hypotension**
- **ALWAYS NON-REASSURING**

4 Priority Nursing Interventions

✅ EARLY DECELS → Monitor & Document

- **Assess** contractions and labor progress
- **Continue** routine FHR monitoring
- **Document** pattern — NO intervention required
- Reassure patient — this is expected with fetal descent

⚠ VARIABLE DECELS → Relieve Cord Compression

1. **REPOSITION** mother → left lateral first (then right, then knee-chest if severe)
2. **Perform vaginal exam** — rule out cord prolapse 🚨
3. **Discontinue oxytocin** if infusing
4. **Administer O_2** 10 L/min via non-rebreather mask
5. **Increase IV fluids** (isotonic bolus)
6. **Notify provider**; prepare for possible **amnioinfusion**

🚨 LATE DECELS → EMERGENCY (Intrauterine Resuscitation)

1. **STOP oxytocin immediately** (removes the stressor)
2. **Turn patient to LEFT lateral** position (↑ placental perfusion)
3. **Administer O_2** 10 L/min via non-rebreather mask
4. **IV fluid bolus** (correct maternal hypotension)
5. **Notify provider STAT**
6. **Prepare for expedited delivery / C-section** if pattern persists
7. **Document** intervention response and fetal recovery

5 Pharmacology

Oxytocin (Pitocin)
UTERINE STIMULANT / OXYTOCIC

MOA: Stimulates uterine smooth muscle contractions

Adverse: Tachysystole, uterine rupture, water intoxication, fetal distress

Nursing: **STOP FIRST** for late decels, >5 contractions/10 min, or non-reassuring FHR

Terbutaline (Brethine)
TOCOLYTIC / B_2-AGONIST

MOA: Relaxes uterine smooth muscle → stops contractions

Adverse: Maternal tachycardia, tremors, hyperglycemia, pulmonary edema

Nursing: Used to reverse **tachysystole**; hold if HR >120 bpm

Magnesium Sulfate
TOCOLYTIC / NEUROPROTECTANT

MOA: CNS depressant; relaxes smooth muscle

Adverse: **Toxicity** → absent DTRs, RR <12, ↓ LOC, ↓ urine

Antidote: **Calcium gluconate** IV

Lactated Ringer's / NS
IV ISOTONIC FLUID

MOA: Expands intravascular volume → ↑ placental perfusion

Use: Bolus during intrauterine resuscitation

Nursing: Watch for fluid overload, esp. w/ preeclampsia

6 NCLEX Test Traps

⚠ **Trap:** Confusing early vs late — BOTH are gradual. The key = **TIMING**. Early mirrors contraction; Late lags behind.

⚠ **Trap:** Treating early decels as an emergency → **Early = benign, no action.**

⚠ **Trap:** Forgetting to **STOP oxytocin FIRST** when FHR becomes non-reassuring — this is the #1 priority if infusing.

⚠ **Trap:** Using **nasal cannula** for fetal distress. Correct: **non-rebreather @ 8–10 L/min.**

⚠ **Trap:** Placing patient **supine** → compresses vena cava, worsens perfusion. Always **LEFT lateral** first.

⚠ **Trap:** Assuming variables are always benign — **prolonged or deep variables (<70 bpm)** require the same urgency as late decels.

⚠ **Trap:** Picking "notify provider" as the **first** answer. On NCLEX, **initiate nursing intervention first** (reposition, stop pitocin, O_2), THEN notify.

⚠ **Trap:** Confusing **accelerations** (reassuring, no action) with decelerations.

7 Patient Education

- Explain the purpose of **continuous FHR monitoring** and why repositioning is needed
- Teach **left side-lying** position to maximize placental blood flow
- Report **decreased fetal movement** immediately (kick counts: ≥10 movements in 2 hr)
- Explain why **oxytocin may be paused** — it's not failure, it's safety
- Review **signs of labor complications**: bleeding, severe abdominal pain, fluid changes
- Prepare for **possible C-section** if FHR pattern remains non-reassuring
- Offer **emotional support**; intrapartum events are often frightening

8 Memory Boosters 🧠

VEAL CHOP

V — Variable	C — Cord compression
E — Early	H — Head compression
A — Accelerations	O — Okay! (Oxygenated)
L — Late	P — Placental insufficiency

VEAL CHOP MINE

V — Variable	M — Move mom (reposition)
E — Early	I — Identify labor (no action)
A — Accels	N — No intervention
L — Late	E — Execute (O_2, stop pit, fluids)

LIONS

Interventions for **Late** or severe **Variable** decels:

L	Left side position
I	IV fluid bolus
O	Oxygen 10 L non-rebreather
N	Notify provider
S	Stop oxytocin

Pattern Shape Hack

Early	↓ with contraction (mirror) = **Head**
Variable	**V-shape**, sharp = **V**ariable / cord
Late	LATE to recover = **Lousy Placenta**
Accel	↑ FHR ≥15×15sec = **Happy baby**