Day 4 — Fetal Monitoring Emergencies

Variable, Late, Prolonged Decelerations | Category II & III Tracings | 2026 NGN NCLEX-RN Labor & Delivery Review

1. High-Yield Overview

Day 3 covered the "normal" fetal heart tracing — baseline, variability, accelerations, and early decelerations. Today is the dangerous side: the decelerations that mean the fetus is in trouble, and the Category II/III tracings that demand immediate nursing action.

On NGN, fetal monitoring questions almost always test one core idea: **What does this pattern mean about oxygenation, and what is the FIRST nursing action?** The exam will rarely give you an easy "diagnose the strip" question — instead, it gives you a strip plus contractions, vital signs, and orders, and asks what to do.

> **Big Picture — Fetal Oxygenation Pathway:** Maternal lungs → maternal heart → uterine arteries → **placenta** → **umbilical cord** → fetus. Every fetal heart rate (FHR) abnormality maps to a break somewhere on this pathway. Late decels = placenta problem. Variable decels = cord problem. Prolonged decels = catastrophic break (cord prolapse, abruption, rupture, severe hypotension).

🧠 **VEAL CHOP MINE — the most-tested L&D mnemonic on NCLEX:**

FHR Pattern	Cause	Nursing Action (MINE)
Variable decel	**C**ord compression	**M**ove the mom (reposition)
Early decel	**H**ead compression	**I**dentify labor progress (no action needed)
Acceleration	**O**K / oxygenated	**N**o intervention
Late decel	**P**lacental insufficiency	**E**xecute interventions (full intrauterine resus)

2. Ten Must-Know Rules for NCLEX

1. **Late decelerations are NEVER normal.** Even one is a warning. Recurrent late decels (≥50% of contractions over 20 min) demand full intrauterine resuscitation and provider notification.
2. **Variable decelerations = cord compression.** The first action is to **REPOSITION** — left lateral first, then right lateral, then knee-chest if needed.
3. **Prolonged deceleration (≥2 min, <10 min) is an emergency until proven otherwise.** First step: vaginal exam to rule out cord prolapse, then start intrauterine resuscitation.
4. **≥10 minutes of low FHR = a new baseline (bradycardia)**, not a deceleration. This is Category III if associated with absent variability or sinusoidal.

5. **Category III tracings require IMMEDIATE intervention and preparation for delivery.** The two ways to be Category III: (1) sinusoidal pattern, or (2) absent variability PLUS recurrent lates, recurrent variables, or bradycardia.
6. **Intrauterine resuscitation order (memorize this): Stop oxytocin → Reposition → IV bolus → O_2 if indicated → Vaginal exam → Notify provider → Prepare for delivery.**
7. **Oxygen is no longer routine.** Per current ACOG/AWHONN guidance, give 10 L/min via non-rebreather *only* when clinically indicated and per facility policy. Routine O_2 for Category II without resus need is not supported.
8. **Stop oxytocin BEFORE you give a tocolytic.** Discontinuing the cause is faster than reversing it.
9. **Moderate variability is the most reassuring single finding on a strip.** If variability is moderate, the fetus is almost certainly not acidotic — even with some decels.
10. **Sinusoidal pattern = fetal anemia until proven otherwise.** Think Rh isoimmunization, fetal-maternal hemorrhage, vasa previa. Category III. Prepare for emergent delivery.

3. Maternal–Fetal Safety Table

Finding	What it means	Mother risk	Fetal/newborn risk	Priority nursing action	Notify provider / activate emergency?
Variable decel (abrupt ≥15 bpm drop, ≥15 sec, <2 min)	Cord compression	Anxiety, possible C/S	Hypoxia if recurrent/severe; cord prolapse if profound	**Reposition** (left lat → right lat → knee-chest); check for cord; IV bolus; D/C oxytocin if recurrent	Notify if recurrent (≥50% of contractions) or severe (<70 bpm, >60 sec)
Late decel (gradual; nadir after peak)	Uteroplacental insufficiency	HTN, abruption, hyperstim, hypotension	Hypoxia, acidosis, fetal demise if uncorrected	**Full intrauterine resus:** Stop oxytocin, left lateral, IV bolus, O_2 if indicated, BP check, treat hypotension	**Always notify.** Recurrent lates with minimal/absent variability → prepare for delivery
Prolonged decel (≥15 bpm drop, ≥2 min, <10 min)	Cord prolapse, abruption, rupture, hypotension, tachysystole, maternal seizure/arrest	Hemorrhage, shock, rupture	Acute hypoxia, demise	**Vaginal exam FIRST** (rule out cord). Then resus bundle. If cord palpated: knee-chest/Trendelenburg, lift presenting part, call OR.	**Activate rapid response/OB emergency.** Prepare for emergent C/S
Fetal bradycardia (<110 bpm × ≥10 min)	Profound hypoxia, hypothermia, maternal hypotension, cord prolapse, abruption, uterine rupture	Same as cause	Severe acidosis, demise	Full resus. Check maternal BP/pulse. Vaginal exam. Prepare for delivery.	**STAT.** Emergent delivery if no rapid recovery
Fetal tachycardia	Maternal fever, chorio, dehydration,	Infection, sepsis	Acidosis if persistent + minimal variability	Check maternal temp, hydrate, treat fever;	Notify for persistent tachy

Finding	What it means	Mother risk	Fetal/newborn risk	Priority nursing action	Notify provider / activate emergency?
(>160 bpm × ≥10 min)	maternal/fetal hyperthyroid, drugs (terbutaline, stimulants), early hypoxia			assess for chorio; D/C terbutaline if recent	or fever ≥38°C (100.4°F)
Minimal variability (≤5 bpm)	Fetal sleep, narcotics, magnesium, prematurity — or hypoxia/acidosis	Often medication-related	Concerning if persistent >40 min or with decels	Stimulate fetus (scalp/vibroacoustic), reposition, evaluate meds	Notify if persistent >40 min or paired with decels
Absent variability (undetectable)	Severe hypoxia/acidosis — Category III if with decels or brady	Often acute event	Imminent decompensation	Full resus, prepare for delivery	**STAT — Category III**
Sinusoidal pattern (smooth, undulating, 3–5 cycles/min × ≥20 min)	Fetal anemia (Rh, fetomaternal hemorrhage, vasa previa)	Possible hemorrhage if vasa previa	Severe anemia, demise	Notify provider STAT, prepare for emergent delivery, type & crossmatch	**STAT — Category III**
Tachysystole (>5 contractions/10 min × 30 min, averaged)	Excess oxytocin, prostaglandins, abruption	Uterine rupture risk	Decreased placental perfusion → late/prolonged decels	**Stop oxytocin**, reposition, IV bolus, consider terbutaline if FHR abnormal	Notify if FHR is non-reassuring or persists after intervention

4. Red-Flag Cues — Immediate Action Triggers

Findings that require IMMEDIATE intervention:

- Recurrent late decelerations + minimal/absent variability
- Prolonged deceleration >3 minutes not recovering
- Fetal bradycardia <100 bpm sustained
- Sinusoidal pattern
- Severe variable decelerations (<70 bpm, >60 sec, slow return)
- Tachysystole + Category II/III tracing
- Sudden fetal heart rate drop after rupture of membranes (cord prolapse until proven otherwise)

Action Bundle by Trigger

Trigger	Reposition	Stop oxytocin	IV bolus	O_2 (if per policy)	Notify provider	Prep for emergency birth
Recurrent variables	✅ first action	✅ if persistent	✅	If non-reassuring	✅	If no improvement
Recurrent late decels	✅ left lateral	✅ immediately	✅	✅ if persistent	✅	If absent variability
Prolonged decel	✅	✅	✅	✅	✅ STAT	✅ Yes
Bradycardia	✅	✅	✅	✅	✅ STAT	✅ Yes
Sinusoidal	✅	✅	✅	✅	✅ STAT	✅ Yes (anemia/hemorrhage)
Tachysystole + FHR change	✅	✅ first	✅	If non-reassuring	✅	If no response to terbutaline

5. Medication Safety — Drugs Tied to Today's Topic

💉 Terbutaline (Brethine) — Tocolytic for Tachysystole

Element	Detail
Why given	Acute uterine relaxation for tachysystole with Category II/III FHR, or before emergency C/S to relax uterus
Dose	0.25 mg SubQ (most common in L&D for tachysystole)
Assess before	Maternal HR (**hold if >120 bpm**), BP, glucose, history of cardiac disease/arrhythmia, asthma OK
Most dangerous adverse effect	Maternal **pulmonary edema**, tachycardia, MI, arrhythmia, hyperglycemia; fetal tachycardia
Hold / notify	Maternal HR >120, chest pain, dyspnea, crackles, severe hypotension
Antidote/reversal	No specific antidote; supportive (β-blocker for severe tachy, diuretic for pulmonary edema)
Nursing monitoring	Continuous FHR + maternal HR/BP/SpO_2; lung sounds q15 min; glucose if diabetic
Client teaching	Expect feeling jittery/racing heart; report chest pain or trouble breathing
🪤 NCLEX trap	Black-box warning: NOT for prolonged tocolysis >48–72 hr (maternal cardiac deaths). Single dose for tachysystole is OK.

💧 IV Crystalloid Bolus (LR or NS) — Intrauterine Resuscitation

Element	Detail
Why given	Improve maternal volume → uteroplacental perfusion; treat epidural hypotension; improve FHR
Dose	500–1000 mL LR rapid bolus (most common)

Assess before	BP, lung sounds, heart sounds, history of cardiac disease, preeclampsia (caution — fluid overload risk)
Most dangerous adverse effect	**Pulmonary edema** — especially in preeclampsia, cardiac disease, or with concurrent magnesium sulfate
Hold / notify	Crackles, dyspnea, SpO_2 <95%, JVD
Nursing monitoring	Lung sounds, SpO_2, I&O strictly; assess FHR response
NCLEX trap	Don't bolus glucose-containing solutions before a planned C/S — risks neonatal hypoglycemia. Use LR or NS.

Oxygen 10 L/min via Non-rebreather

Element	Detail
Why given	Increase maternal SaO_2 to improve fetal oxygenation — when clinically indicated
Current evidence	**No longer routine.** Recent ACOG/AWHONN guidance: O_2 for Category II/III when other resus measures haven't restored FHR, and per facility policy. Brief use, not continuous.
Assess before	Maternal SpO_2, respiratory effort
Adverse effects	Concern about prolonged hyperoxia and fetal oxidative stress with extended use
Nursing monitoring	FHR response within 5–10 min; SpO_2; discontinue once FHR improves
NCLEX trap	Older test questions said "give O_2 first." Newer NGN questions usually pick **reposition + stop oxytocin + IV bolus** before oxygen unless the question specifies O_2 is indicated.

Oxytocin (Pitocin) — When to STOP

Element	Detail
Why used	Labor augmentation/induction
STOP for:	Tachysystole (>5 contractions/10 min), Category II/III tracing, late decels, prolonged decel, recurrent variables that don't respond to repositioning, contraction duration >90 sec, resting tone >25 mmHg (IUPC), inadequate uterine relaxation between contractions (<30 sec)
Restart after	FHR reassuring (Category I) AND contraction pattern normalized — usually restart at half the previous rate per protocol
NCLEX trap	Students often "slow it down." NCLEX wants **STOP / DISCONTINUE**, not decrease.

6. Fetal Monitoring Deep Dive

The 7 Components of Strip Interpretation

1. **Uterine contractions** — frequency, duration, intensity, resting tone
2. **Baseline FHR** — average over 10 min (excluding decels/accels); normal 110–160
3. **Variability** — absent, minimal (≤5), moderate (6–25), marked (>25)
4. **Accelerations** — ≥15 bpm × ≥15 sec (term); ≥10 × ≥10 sec (preterm <32 wks)
5. **Decelerations** — early, variable, late, prolonged
6. **Changes/trends over time**
7. **Category (I, II, III)**

Deceleration Decoder

Type	Shape	Timing vs contraction	Onset to nadir	Cause	Action
Early	Gradual, mirror image	Nadir AT peak	≥30 sec gradual	Head compression (normal)	Document, no intervention
Variable	Abrupt V, W, or U-shape	Variable / not linked to ctx	<30 sec abrupt	Cord compression	**Reposition**, check cord, IV bolus, ± amnioinfusion
Late	Gradual, smooth U	Nadir AFTER peak	≥30 sec gradual	Uteroplacental insufficiency	**Stop oxytocin, full resus**, notify
Prolonged	Any shape, sustained	≥2 min, <10 min	Any onset	Cord prolapse, abruption, rupture, hypotension, tachysystole	**Vaginal exam, full resus, prep for delivery**

Category Interpretation

Category	Features	What it means	Nursing action
Category I (Normal)	Baseline 110–160 + moderate variability + NO late/variable decels + early decels OK + accels present or absent	Fetus well-oxygenated, not acidotic	Continue routine monitoring
Category II (Indeterminate)	Anything not Cat I or III. Examples: tachycardia, minimal variability, marked variability, absent variability without recurrent decels, recurrent variables with moderate variability, prolonged decel <10 min, recurrent lates with moderate variability	Indeterminate fetal status — not predictive of acidosis but requires continued surveillance and intrauterine resus	Intrauterine resus, escalate based on response, frequent reassessment
Category III (Abnormal)	Sinusoidal pattern **OR** absent variability WITH: recurrent late decels, recurrent variables, or bradycardia	Predictive of abnormal acid-base status	**Immediate intervention + prepare for delivery.** Notify provider STAT. If no resolution → operative birth

The Intrauterine Resuscitation Bundle (memorize order)

SLIDE — Order of Intrauterine Resuscitation
Stop oxytocin / cervical ripening agent
Lateral position (left first, then right, then knee-chest)
IV fluid bolus (500–1000 mL LR)
Determine cause — vaginal exam to rule out cord, check BP, check contractions
Escalate — O_2 if indicated, notify provider, prepare for terbutaline or delivery

7. Advanced NGN Practice Questions

Question 1 — Multiple Choice (Recognize Cues)

Recognize Cues

A nurse reviews a fetal heart tracing on a client at 39 weeks who is receiving oxytocin. The baseline is 140 bpm with moderate variability. With each of the last 3 contractions, the FHR gradually drops to 110 bpm, reaching its lowest point 30 seconds after the contraction peak, then gradually returns to baseline. Which deceleration is the nurse observing?

A. Early decelerations
B. Variable decelerations
C. Late decelerations
D. Prolonged decelerations

Answer: C. Late decelerations
The key cues: *gradual* drop (rules out variable), nadir *after* the peak (rules out early), recovery only after the contraction ends, and recurrent with each contraction. This is classic uteroplacental insufficiency.
Why others are wrong: A — early decels have nadir AT the peak (mirror image), not after. B — variables are *abrupt* (<30 sec to nadir), not gradual. D — prolonged decels last ≥2 min; these resolve with each contraction.
Trap: Students confuse "after the contraction" with "between contractions." Late decel nadir is after the *peak* but often still during the contraction.

Question 2 — Select All That Apply (Take Action)

Take Action

A laboring client at 4 cm dilated is receiving oxytocin at 8 mU/min. The fetal heart tracing shows recurrent late decelerations and minimal variability. The contraction pattern is q2 minutes, 70 seconds each. Which nursing actions should be implemented? Select all that apply.

- □ A. Stop the oxytocin infusion
- □ B. Position the client on her left side
- □ C. Increase the oxytocin to speed delivery
- □ D. Administer a 500 mL IV bolus of Lactated Ringer's
- □ E. Apply O_2 10 L/min via non-rebreather per facility protocol
- □ F. Notify the provider immediately

- ☐ G. Document and continue current management
- ☐ H. Prepare for possible operative delivery

> **Answers: A, B, D, E, F, H**
> This is a Category II tracing trending toward Category III (recurrent lates + minimal variability). Full intrauterine resuscitation bundle applies, plus preparation for delivery if it doesn't resolve.
> **Why C is wrong:** Increasing oxytocin worsens uteroplacental insufficiency — the opposite of what's needed.
> **Why G is wrong:** Documenting alone without intervention is unsafe with recurrent late decels.
> 📝 **Trap:** Students often skip "prepare for operative delivery" because they don't see active distress yet. NGN expects you to anticipate one step ahead.

Question 3 — Ordered Response (Take Action)

Take Action

The fetal monitor shows a sudden FHR drop from 145 to 80 bpm lasting 3 minutes after spontaneous rupture of membranes. Place the nursing actions in priority order:

1. Notify the provider STAT and prepare for emergency C-section
2. Perform a sterile vaginal exam to assess for cord prolapse
3. Reposition the client to knee-chest or Trendelenburg position
4. Stop the oxytocin infusion
5. Begin IV fluid bolus and administer oxygen per protocol

> **Correct order: 4 → 2 → 3 → 5 → 1**
> 1️⃣ **Stop oxytocin** first — fastest, removes cause that may be worsening it.
> 2️⃣ **Vaginal exam** — a prolonged decel right after ROM is cord prolapse until proven otherwise. You must check.
> 3️⃣ **Reposition** to knee-chest/Trendelenburg to relieve cord pressure (especially if cord is palpable).
> 4️⃣ **IV bolus + O_2** per protocol while preparing.
> 5️⃣ **Notify provider STAT** and prepare for emergency birth.
> 📝 **Trap:** Some prioritization questions put "call provider" first. Here, the FIRST action is one the nurse can do immediately at the bedside that removes the cause (oxytocin). If the question said "first action the nurse should take," "stop oxytocin" is the answer. Some sources put "vaginal exam" first if oxytocin isn't running.

Question 4 — Matrix / Grid (Analyze Cues)

Analyze Cues

For each finding, mark whether it is consistent with **Category I**, **Category II**, or **Category III**:

Finding	Cat I	Cat II	Cat III
Baseline 145, moderate variability, no decels	?	?	?
Baseline 170, minimal variability, no decels	?	?	?
Sinusoidal pattern × 25 min	?	?	?
Recurrent late decels, moderate variability	?	?	?

Finding	Cat I	Cat II	Cat III
Absent variability + recurrent variables	?	?	?
Baseline 105 sustained, absent variability	?	?	?

Answers:
• 145 + moderate variability + no decels → **Cat I** ✅
• Tachycardia (170) + min variability + no decels → **Cat II** (indeterminate)
• Sinusoidal pattern → **Cat III** 🚨 (one of the two automatic Cat III findings)
• Recurrent lates + *moderate* variability → **Cat II**. (NOT Cat III because variability is moderate.)
• Absent variability + recurrent variables → **Cat III** 🚨
• Bradycardia + absent variability → **Cat III** 🚨
📝 **Trap:** "Recurrent late decels" alone is NOT Cat III. Cat III requires *absent* variability PLUS the recurrent lates/variables/bradycardia (or sinusoidal alone). Moderate variability is protective.

Question 5 — Bow-Tie (Prioritize, Generate Solutions, Take Action)

Generate Solutions

A G2P1 client at 38 weeks is in active labor with epidural analgesia. After repositioning for a vaginal exam, the FHR drops to 90 bpm and stays there for 4 minutes despite repositioning. BP is 88/52.

Center (Priority Condition): What is the most likely cause?

A. Cord prolapse

B. Maternal hypotension from epidural

C. Placental abruption

D. Tachysystole

Left (2 Actions to Take):

- □ A. Administer IV fluid bolus 500 mL LR
- □ B. Administer ephedrine or phenylephrine per protocol
- □ C. Increase the oxytocin
- □ D. Place a Foley catheter

Right (2 Parameters to Monitor):

- □ E. Maternal BP every 2–5 min
- □ F. Daily weight
- □ G. Fetal heart rate response
- □ H. 24-hour urine protein

Center: B — Maternal hypotension from epidural (classic timing — recent positioning + BP 88/52 + epidural in place).
Left Actions: A and B — fluid bolus and vasopressor are first-line for epidural-induced hypotension causing fetal bradycardia.
Right Monitoring: E and G — track BP response and FHR response. Both should improve within minutes if cause is

correctly identified.
Why others are wrong: C — never increase oxytocin during fetal distress. D — Foley isn't the priority. F and H — not relevant to acute event.
Trap: Cord prolapse is also a worry, but a vaginal exam was just done — and the timing and BP make hypotension more likely. NCLEX wants you to use ALL the cues.

Question 6 — Drop-Down / Cloze (Analyze Cues)

Analyze Cues

Complete the statement by choosing from the dropdown options:

A fetal heart tracing showing **[1: ___]** is most concerning for fetal anemia and would be classified as Category **[2: ___]**. The priority nursing action is to **[3: ___]**.

Options for [1]: a) recurrent early decelerations b) a sinusoidal pattern c) marked variability d) accelerations

Options for [2]: a) I b) II c) III

Options for [3]: a) document and continue monitoring b) reposition only c) notify the provider STAT and prepare for emergency delivery d) administer IV magnesium sulfate

Answers: [1] b — sinusoidal pattern; [2] c — Category III; [3] c — notify provider STAT, prepare for emergency delivery
Sinusoidal pattern = smooth, undulating, fixed pattern of 3–5 cycles/min lasting ≥20 min. It signals severe fetal anemia (Rh, fetomaternal hemorrhage, vasa previa). One of the two automatic Cat III findings.
Trap: Marked variability is *not* sinusoidal — marked variability is jagged/irregular; sinusoidal is smooth and rhythmic.

Question 7 — Medication Safety (Take Action)

Take Action

The provider orders terbutaline 0.25 mg SubQ for tachysystole. Before administering, the nurse assesses the client. Which finding requires the nurse to **hold** the medication and notify the provider?

A. Maternal HR 118, BP 124/78, fetal HR 165
B. Maternal HR 132, BP 110/70, fetal HR 155
C. Maternal HR 96, BP 100/68, blood glucose 110 mg/dL
D. Reports of mild jitteriness after a previous terbutaline dose

Answer: B
Hold terbutaline if maternal HR >120 bpm. HR of 132 is a contraindication — terbutaline will worsen tachycardia and risks maternal pulmonary edema/MI.
Why others are wrong: A — HR 118 is high but under threshold; fetal HR 165 isn't a contraindication for terbutaline (terbutaline often causes some fetal tachy). C — vital signs and glucose normal. D — jitteriness is an expected side effect, not a reason to hold.
Trap: The fetal HR of 165 in option A might look scary, but the question asks about contraindications to terbutaline. Mild fetal tachycardia is expected.

Question 8 — Fetal Monitoring Strip Interpretation (Analyze Cues)

Analyze Cues

The nurse observes the following on the fetal monitor over a 15-minute period:

- Baseline FHR: 155 bpm
- Variability: moderate (10–15 bpm)
- Accelerations: 2 noted
- Decelerations: 3 abrupt V-shaped drops to 95 bpm, each lasting 25 seconds, occurring during contractions
- Contractions: q3 min, 60 sec, moderate intensity

How should the nurse classify and respond to this tracing?

A. Category I — continue routine monitoring

B. Category II — reposition and reassess; this is a recurrent variable pattern

C. Category III — call provider STAT, prepare for emergency C-section

D. Sinusoidal — type and crossmatch, prepare for delivery

Answer: B — Category II
Abrupt V-shaped drops = variable decelerations (cord compression). They are recurrent (3 in 15 min = ≥50% of contractions), but the variability is moderate and there's no acidosis pattern, so this is Cat II, not Cat III. First action: reposition.
Why others are wrong: A — recurrent variables aren't routine. C — Cat III would require absent variability with the variables. D — sinusoidal is smooth/undulating, not V-shaped.
Trap: Recurrent variables sound scary, but with *moderate variability* the fetus is still likely well-oxygenated. Don't jump to Cat III.

Question 9 — Prioritization Mini-Case (Prioritize Hypotheses)

Prioritize Hypotheses

A nurse is caring for four laboring clients. Which client should the nurse assess FIRST?

A. A primigravida at 7 cm with epidural in place, FHR 140 with moderate variability, no decels, BP 110/70

B. A multipara at 5 cm with oxytocin running, contractions q3 min × 70 sec, FHR 150 with early decels

C. A primigravida at 9 cm with FHR 105 sustained for 10 minutes, absent variability

D. A multipara at 4 cm requesting an epidural, FHR 145 with moderate variability

Answer: C
Sustained bradycardia (≥10 min) with absent variability = Category III. This is the emergency. The fetus is at imminent risk of severe acidosis.
Why others wait: A — stable post-epidural. B — early decels are normal (head compression with descent). D — comfort request can be addressed after.
Trap: Option B has oxytocin and a 70-sec contraction, which sounds worrisome, but the FHR is reassuring and early decels are benign.

Question 10 — Emergency Action (Take Action)

Take Action

During a sterile vaginal exam after spontaneous ROM, the nurse palpates a pulsating cord in the vagina. FHR drops to 70 bpm. What is the nurse's PRIORITY action?

A. Remove gloved hand and reposition the client to the left side

B. Keep the gloved hand in place to lift the presenting part off the cord

C. Begin chest compressions on the mother

D. Administer terbutaline 0.25 mg SubQ

> **Answer: B**
> Cord prolapse with palpable cord and fetal bradycardia is a true emergency. The nurse must **keep the gloved hand in the vagina to elevate the presenting part off the cord** while help is summoned and the OR is mobilized. Position client in knee-chest or Trendelenburg.
> **Why others are wrong:** A — removing the hand drops the presenting part back onto the cord. C — mother is not in arrest. D — terbutaline may be ordered to help relax the uterus, but the FIRST action is mechanical relief of cord compression.
> **Trap:** Test-takers' instinct is to remove the hand. The correct action is counter-intuitive — keep the hand IN until the baby is delivered (usually by emergent C/S).

8. Unfolding NGN Case Study

Patient: Maria Lopez, 28 y/o G3P2 at 39 +2 weeks

1530 — Nurse's Notes

Client admitted in active labor. Spontaneous onset. Contractions q3 min × 60 sec, strong. SVE: 5 cm / 80% / 0 station. Membranes intact. GBS negative. No allergies. PMH: chronic HTN (on labetalol). On admission, oxytocin started at 4 mU/min for augmentation per provider order. Epidural placed at 1545.

Vital Signs (1530 → 1600)

Time	BP	HR	RR	SpO_2	Temp
1530	138/86	92	18	98%	98.6°F
1545 (post-epidural)	96/58	112	20	97%	98.4°F
1600	92/54	118	22	96%	98.4°F

Fetal Heart Tracing (1530–1600)

- **1530–1545:** Baseline 145, moderate variability, no decels, occasional accels
- **1545–1600:** Baseline 145, but with each contraction the FHR gradually drops to 110, with the lowest point 30 sec after the contraction peak. Variability becomes minimal. 4 of last 6 contractions show this pattern.

Contractions

q2–3 min × 70 sec, moderate to strong. Resting tone soft.

MAR (Medication Administration Record)

- Oxytocin IV infusion — currently 8 mU/min
- Bupivacaine epidural infusion — running
- Labetalol 200 mg PO BID — last dose 0800
- LR 125 mL/hr maintenance IV

Provider Orders

- Continuous EFM
- Oxytocin per protocol
- VS q15 min × 1 hour after epidural placement, then q30 min
- Notify for Category II/III tracing, BP <90/60, BP >160/110, or maternal HR >120

Client Statement

"I feel kind of dizzy and the baby's moving a lot less. Is that normal?"

🟢 Question A — Recognize Cues

Which findings does the nurse identify as relevant cues requiring further analysis? Select all that apply.

- □ A. Baseline FHR 145 with moderate variability
- □ B. BP drop from 138/86 to 92/54 after epidural placement
- □ C. Recurrent late decelerations beginning 15 min after epidural
- □ D. Minimal variability emerging
- □ E. Maternal HR rising from 92 → 118
- □ F. Client report of dizziness and decreased fetal movement
- □ G. Contractions q2–3 min × 70 sec
- □ H. Temperature 98.4°F

> **Relevant cues: B, C, D, E, F, G**
> A and H are reassuring/normal — not concerning cues.
> B = epidural hypotension. C = late decels (uteroplacental insufficiency from hypotension). D = developing minimal variability suggests progressive fetal compromise. E = compensatory maternal tachycardia. F = subjective signs of hypoperfusion + decreased fetal movement. G = borderline tachysystole.

🟢 Question B — Analyze Cues

Drag each finding to the most likely underlying problem:

Finding	Cause (choose: Epidural hypotension / Tachysystole / Cord compression / Chorioamnionitis)
BP 92/54, HR 118 after epidural	?

Recurrent late decels with minimal variability	?
Contractions q2 min × 70 sec on oxytocin	?
Decreased fetal movement reported	?

Answers:
• BP 92/54 + HR 118 → **Epidural hypotension**
• Recurrent lates + min variability → **Epidural hypotension** (uteroplacental insufficiency from low maternal BP)
• q2 min × 70 sec → **Tachysystole** (contributing factor)
• ↓ Fetal movement → result of **Epidural hypotension** + fetal hypoxia
Trap: Cord compression is variable decels (abrupt). Late decels point to a placental/perfusion problem.

Question C — Prioritize Hypotheses

The nurse's top hypothesis is:

A. Placental abruption

B. Uteroplacental insufficiency secondary to epidural-induced hypotension and tachysystole

C. Cord prolapse

D. Chorioamnionitis

Answer: B
The pattern fits perfectly: drop in BP after epidural → maternal compensatory tachycardia → uteroplacental hypoperfusion → late decels + minimal variability. Tachysystole is making it worse. No bleeding (abruption), no ROM/cord (prolapse), no fever (chorio).

Question D — Generate Solutions

Which interventions are appropriate? Select all that apply.

- □ A. Stop the oxytocin infusion
- □ B. Increase the oxytocin to push delivery
- □ C. Position client in left lateral position
- □ D. Administer 500 mL LR IV bolus
- □ E. Administer ephedrine or phenylephrine IV per protocol for hypotension
- □ F. Apply O_2 10 L/min via non-rebreather per facility protocol
- □ G. Administer terbutaline if FHR doesn't improve with above measures
- □ H. Notify the provider
- □ I. Document and continue current plan

Answers: A, C, D, E, F, G, H
This is full intrauterine resuscitation PLUS treatment of the underlying epidural hypotension (vasopressor) PLUS terbutaline as backup for tachysystole. B is unsafe. I delays care.

> 🪤 **Trap:** Some students hesitate on G (terbutaline) — but if the cause is tachysystole + the FHR isn't recovering, terbutaline is appropriate per protocol.

🟢 Question E — Take Action

Place the nursing actions in priority order:

1. Administer ephedrine 5–10 mg IV per protocol
2. Stop the oxytocin infusion
3. Reposition to left lateral
4. Bolus 500 mL LR
5. Notify provider

> **Correct order: 2 → 3 → 4 → 1 → 5**
> 2️⃣ Stop oxytocin first — fastest removal of contributing cause.
> 3️⃣ Reposition — improves venous return and uteroplacental flow.
> 4️⃣ IV bolus — corrects volume.
> 1️⃣ Ephedrine if BP still low after position/bolus (vasopressor for sympathectomy-induced hypotension).
> 5️⃣ Notify provider — concurrent with all the above, but on NCLEX the prioritization is "fix what you can fix now, then call."

🟢 Question F — Evaluate Outcomes

15 minutes after interventions, the nurse reassesses. Which findings indicate the interventions were EFFECTIVE? Select all that apply.

- □ A. BP rises to 112/68
- □ B. Maternal HR drops to 96
- □ C. FHR baseline 140 with moderate variability, no decels in last 10 min
- □ D. Contractions q3 min × 50 sec
- □ E. Client states "I feel less dizzy"
- □ F. Persistent late decels with minimal variability
- □ G. Fetal movement felt by client

> **Answers: A, B, C, D, E, G**
> F would indicate that the interventions did NOT work and the next step is to prepare for delivery. All others reflect resolved uteroplacental insufficiency.

9. "What Should the Nurse Do First?" — 5 Mini-Scenarios

Scenario 1

FHR baseline 150, sudden drop to 80 lasting 5 minutes, no recovery, oxytocin running at 12 mU/min.

> **FIRST action: STOP the oxytocin.** It's the fastest action the nurse can take to remove a contributing cause. Then reposition, IV bolus, vaginal exam, notify provider, prepare for delivery.

Scenario 2

Client just had ROM. Clear fluid. Nurse hears no FHR change but client says "I feel something between my legs."

> **FIRST action: Perform a sterile vaginal exam to rule out cord prolapse.** If cord is palpated, keep hand IN to elevate presenting part, place client in knee-chest, call for help, prepare for emergent C/S.

Scenario 3

FHR shows abrupt V-shaped decel to 100 lasting 30 seconds during a contraction. One previous variable noted 10 minutes ago.

> **FIRST action: Reposition the client (left lateral first).** Variables = cord compression. Repositioning is the single most effective bedside intervention.

Scenario 4

BP 88/52 ten minutes after epidural placement. FHR has dropped from 145 to 115 with minimal variability.

> **FIRST action: Position in left lateral and begin IV fluid bolus.** Epidural hypotension is the cause; correcting maternal BP will correct uteroplacental perfusion. Vasopressor (ephedrine/phenylephrine) if bolus is insufficient.

Scenario 5

Contraction pattern shows 7 contractions in 10 min averaged over 30 min. FHR baseline 150 with moderate variability, no decels yet.

> **FIRST action: Stop or reduce oxytocin per protocol.** Tachysystole without FHR change is still tachysystole — treat the contraction pattern before the fetus decompensates. Reposition, IV bolus. Terbutaline only if FHR also becomes non-reassuring.

10. "Stop, Hold, or Escalate" — 5 Decision Scenarios

> **Scenario 1 — STOP OXYTOCIN**
> Contractions q90 sec × 80 sec, resting tone elevated, recurrent late decels.
> **Action: Discontinue oxytocin immediately, begin intrauterine resuscitation, notify provider.**

Scenario 2 — HOLD MEDICATION
Provider orders terbutaline 0.25 mg SubQ for tachysystole. Maternal HR is 132.
Action: Hold terbutaline, notify provider — maternal HR >120 is a contraindication. Continue other intrauterine resus measures.

Scenario 3 — NOTIFY PROVIDER
After 30 minutes of intrauterine resuscitation, FHR remains at 100 with minimal variability and continued late decels.
Action: Notify provider STAT — interventions have failed; prepare for operative delivery.

Scenario 4 — CALL RAPID RESPONSE / OB EMERGENCY
Sudden fetal bradycardia to 60 bpm after spontaneous ROM. Cord is palpable.
Action: Activate OB rapid response, keep hand in vagina to elevate presenting part, knee-chest/Trendelenburg position, call OR for emergent C/S.

Scenario 5 — PREPARE FOR EMERGENCY BIRTH
Tracing shows sinusoidal pattern × 25 min, baseline 140, no improvement with resus.
Action: Notify provider STAT, type and crossmatch (maternal AND consider neonatal), prepare OR for emergent C/S, alert NICU. Fetal anemia until proven otherwise.

11. Common NCLEX Traps

1. **Confusing early vs late decelerations.** Early = nadir AT peak (mirror, head compression, benign). Late = nadir AFTER peak (placental insufficiency, dangerous). On a strip, look at WHERE the lowest point of the FHR falls relative to the contraction peak.
2. **Treating variables like late decels.** Variables = abrupt V/W shape, cord compression — repositioning first. Lates = gradual U shape, placental insufficiency — stop oxytocin, full resus. The shape tells you everything.
3. **Forgetting that "recurrent late decels with moderate variability" is Cat II, NOT Cat III.** Cat III requires *absent* variability with the lates. Moderate variability is protective.
4. **Forgetting to do a vaginal exam after sudden ROM or sudden bradycardia.** Cord prolapse can happen instantly. Always assess.
5. **Giving oxygen as the "first" answer for fetal distress.** Older test items prioritized O_2. Newer NGN logic: stop oxytocin → reposition → IV bolus first. Oxygen comes later, only if indicated.
6. **"Slowing down" oxytocin during fetal distress.** NCLEX wants you to STOP / DISCONTINUE. Decreasing is too slow for true tachysystole or recurrent decels.
7. **Ignoring bladder distention when a tracing worsens.** A distended bladder can shift the uterus and cause variable decels — always assess (especially post-epidural).
8. **Removing the hand from the vagina during cord prolapse.** Counter-intuitive but critical: keep hand IN to lift the presenting part off the cord until delivery.
9. **Calling sinusoidal "marked variability."** Sinusoidal is smooth, undulating, rhythmic — Category III. Marked variability is jagged with bandwidth >25 bpm, often Cat II.
10. **Missing that maternal hypotension can mimic fetal disease.** Always check the mother's BP when the FHR drops, especially post-epidural.

12. End-of-Day Quick Review

📌 10 One-Line Must-Remember Points

1. Late decel = placenta. Variable decel = cord. Early decel = head (normal).
2. Late decel nadir is AFTER the peak. Early decel nadir is AT the peak.
3. Variable decels are abrupt; late and early decels are gradual.
4. Cat III = sinusoidal OR absent variability + recurrent decels/brady.
5. Intrauterine resus order: STOP oxytocin → reposition → IV bolus → O_2 → exam → notify.
6. Sinusoidal = fetal anemia until proven otherwise.
7. Cord prolapse → keep hand IN, knee-chest, call OR.
8. Hold terbutaline if maternal HR >120.
9. Tachysystole = >5 contractions in 10 min averaged over 30 min.
10. Moderate variability is the single most reassuring finding.

🚩 5 Red-Flag Findings

1. Sinusoidal pattern
2. Recurrent late decels + minimal/absent variability
3. Sudden prolonged decel after ROM (think cord prolapse)
4. Sustained bradycardia <100 bpm
5. Tachysystole + Category II tracing

🛑 5 "Never Do This" Rules

1. Never increase oxytocin during fetal distress.
2. Never remove your hand from the vagina during cord prolapse before delivery.
3. Never give terbutaline if maternal HR >120.
4. Never document and continue when you see recurrent late decels.
5. Never assume FHR drop after ROM is normal — assess for cord prolapse.

🎯 5 Fetal Monitoring Clues

1. V-shape, abrupt = variable (cord)
2. U-shape, gradual, mirror of contraction = early (head)
3. U-shape, gradual, lagging behind contraction = late (placenta)
4. Sustained low >2 min, <10 min = prolonged
5. Smooth wave, no variability, 3–5 cycles/min = sinusoidal (anemia)

💊 5 Medication Safety Clues

1. Terbutaline — hold if maternal HR >120
2. Oxytocin — STOP, not slow, for fetal distress or tachysystole

3. IV bolus — watch for pulmonary edema in preeclampsia or with magnesium
4. Oxygen — no longer routine; use only when clinically indicated
5. Ephedrine/phenylephrine — first-line for epidural hypotension causing late decels

📊 Day 4 — Visual Summary

🩺 The 4 Decelerations

- **Early** → Head compression → Normal
- **Variable** → Cord compression → Reposition
- **Late** → Placental insufficiency → Full resus
- **Prolonged** → Catastrophic event → STAT response

🎯 Categories at a Glance

- Cat I Normal → Continue monitoring
- Cat II Indeterminate → Resus + reassess
- Cat III Abnormal → Deliver

💉 Intrauterine Resus Bundle

1. STOP oxytocin
2. Reposition (L lateral)
3. IV bolus (500–1000 mL LR)
4. O_2 if indicated
5. Vaginal exam
6. Notify provider
7. Prep for delivery

🚨 Two Ways to Be Cat III

1. **Sinusoidal pattern** (think anemia)
2. **Absent variability +** one of:
   - Recurrent late decels
   - Recurrent variables
   - Bradycardia

🧠 VEAL CHOP MINE

- **V**ariable → **C**ord → **M**ove mom
- **E**arly → **H**ead → **I**dentify labor
- **A**ccels → **O**K → **N**o action
- **L**ate → **P**lacenta → **E**xecute resus

⏱️ Time Definitions

- Decel: lasts <2 min
- Prolonged decel: ≥2 min, <10 min
- Bradycardia: <110 × ≥10 min
- Tachycardia: >160 × ≥10 min
- Tachysystole: >5 ctx/10 min × 30 min

🛑 STOP Oxytocin When:

- Recurrent late decels
- Recurrent variables unresponsive
- Prolonged decel

💊 Terbutaline Quick Card

- Dose: 0.25 mg SubQ
- Hold if HR >120
- Watch: pulmonary edema, MI

- Tachysystole
- Cat II not improving / Cat III

- Expect: jittery, fast HR (mom + baby)
- Use: tachysystole rescue

💗 **Tomorrow — Day 5: Rupture of Membranes, Amniotic Fluid, Cord Prolapse, Meconium, Infection Risk**