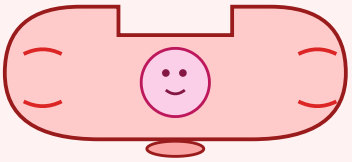
# PRETERM LABOR

MATERNAL / NEWBORN | OB | NCLEX 2026 Test Plan

## 1 Definition / Overview

- **Regular uterine contractions with cervical change** occurring between **20 0/7 and 36 6/7 weeks** gestation.
- **Leading cause** of neonatal morbidity & mortality in the U.S.
- **Goal of care:** delay delivery long enough to give corticosteroids for *fetal lung maturity* and transfer to a facility equipped for neonatal care.

## 2 Pathophysiology (Simplified)



**Uterine contractions**
+ cervical change before 37 wks

**Trigger: infection, dehydration, stress, multiples, PROM, bleeding** → **Release of prostaglandins & inflammatory mediators** → **Uterine contractions + cervical softening, effacement, dilation** →

**Preterm delivery if not halted**

## 3 🩺 Signs & Symptoms

### 🟡 EARLY / Subtle

- Menstrual-like cramping
- Dull, constant low back ache
- Pelvic pressure / "feels like baby is pushing down"
- Increased or changed vaginal discharge (watery, mucus, pink-tinged)
- Intermittent abdominal tightening
- GI upset — nausea, diarrhea, cramping

### 🔴 LATE / Severe 🚨

- **Regular painful contractions** — ≥4 in 1 hr or ≥6–8 in 1 hr
- **Rupture of membranes** — gush or persistent leak of fluid
- **Vaginal bleeding**
- **Cervical dilation ≥2 cm** or effacement ≥80%
- Positive fetal fibronectin (fFN) test
- Decreased fetal movement

🚨 **RED FLAG: ROM + contractions + bleeding = notify provider IMMEDIATELY. Risk of chorioamnionitis, cord prolapse, placental abruption.**

## 4 ✅ Priority Nursing Interventions

🅰️🅱️🅲 **ABC + Safety priority: maintain maternal airway/perfusion → fetal oxygenation → stop labor if possible.**

- **Assess** contraction frequency, duration, intensity & continuous fetal heart rate (EFM).
- **Position** patient in **left lateral recumbent** → improves uteroplacental perfusion.
- **Initiate IV hydration** — dehydration is a common trigger.
- **Obtain fetal fibronectin (fFN) specimen BEFORE** any digital cervical exam or intercourse assessment (exam contaminates result).
- **Administer tocolytics** as ordered (Mg sulfate, nifedipine, indomethacin, terbutaline).
- **Administer corticosteroids** (betamethasone or dexamethasone) if 24–34 wks — for fetal lung maturity.
- **Magnesium sulfate for neuroprotection** if <32 wks — reduces risk of cerebral palsy.
- **GBS prophylaxis** (IV penicillin) if status unknown or positive.
- **Strict I&O**, daily weights, lung sounds — watch for pulmonary edema with tocolytics.
- **Limit vaginal exams** — reduces infection risk, especially with ROM.
- **Emotional support** — anxiety & fear are high; involve partner/support person.
- **Prepare for possible delivery** — notify NICU team, have resuscitation equipment ready.

## 5 💊 Pharmacology

| Drug / Class | Mechanism | Key Side Effects | Nursing Considerations |
|---|---|---|---|
| **Betamethasone** Corticosteroid | ↑ Fetal surfactant → lung maturity | Transient maternal ↑ glucose, slight ↑ infection risk | 2 IM doses 24 hr apart. Benefits peak 24 hr – 7 days after 2nd dose. Monitor maternal BG, esp. diabetics. |
| **Magnesium Sulfate** Tocolytic / Neuroprotection | Smooth muscle relaxant; CNS depressant | Flushing, warmth, N/V, **toxicity**: ↓ DTRs, RR <12, urine <30 mL/hr, ↓ LOC | Assess DTRs, RR, U/O hourly. **Antidote = IV Calcium Gluconate**. Therapeutic level 4–7 mEq/L. |
| **Nifedipine** Calcium Channel Blocker | Blocks $Ca^{++}$ → uterine relaxation | Hypotension, headache, flushing, tachycardia | Monitor BP & HR. **Do NOT combine with Mg sulfate** → severe hypotension. |
| **Indomethacin** NSAID / Prostaglandin inhibitor | Blocks prostaglandins → ↓ contractions | Premature closure of fetal **ductus arteriosus**, oligohydramnios | Use **only <32 wks** for **max 48 hrs**. Monitor amniotic fluid volume. |
| **Terbutaline** Beta-2 Agonist | Relaxes uterine smooth muscle | Maternal tachycardia, hyperglycemia, **pulmonary edema**, chest pain | Hold if maternal HR >120. FDA: **not >48–72 hr**. Monitor lungs, glucose, $K^+$. |
| **Penicillin G** Antibiotic (GBS prophylaxis) | Bactericidal — prevents neonatal GBS sepsis | Rash, anaphylaxis | Give if GBS+ or unknown & in PTL. Ask about PCN allergy before administering. |

## 6 ⚠️ NCLEX Test Traps

**TRAP 1 —** Don't confuse a *tocolytic* (STOPS labor) with an *oxytocic* like oxytocin (STARTS labor).

**TRAP 2 —** The antidote for magnesium sulfate toxicity is **Calcium Gluconate** — *not* naloxone, *not* protamine.

**TRAP 3 —** Always obtain **fetal fibronectin (fFN)** BEFORE the digital cervical exam. Digital exam contaminates the specimen → false positive.

**TRAP 4 —** Betamethasone does NOT stop labor. It is for **fetal lung maturity**. Don't pick it as the intervention to "stop contractions."

**TRAP 5 —** Before each Mg sulfate dose / hourly: check **DTRs, RR (≥12), urine output (≥30 mL/hr)**. Any abnormal = **HOLD drug + notify provider**.

**TRAP 6 —** Indomethacin is limited to **<32 weeks and ≤48 hours** → premature closure of ductus arteriosus.

**TRAP 7 —** If ROM is suspected, **limit digital vaginal exams** — infection risk. Use sterile speculum + nitrazine/fern test instead.

**TRAP 8 —** Priority with sudden gush of fluid → **assess FHR first** (rule out cord prolapse), then check color/odor of fluid.

## 7 🤰 Patient Education

- **Count contractions** — call provider if **>4 contractions in 1 hour** (the "4 in 1" rule).
- **Report immediately:** vaginal bleeding, gush or leaking of fluid, decreased fetal movement, severe pelvic pressure, or persistent backache.
- **Empty bladder every 2 hours** — full bladder can trigger contractions.
- **Stay well hydrated** — dehydration is a common PTL trigger.
- **Avoid** intercourse, nipple stimulation, heavy lifting, and long periods of standing if advised.
- **Modified bed rest — left lateral position** if prescribed.
- **Take medications exactly as ordered** — do not stop tocolytics or skip steroid doses.
- **Follow-up visits** for serial cervical length & fetal growth.
- **Smoking cessation** and avoidance of alcohol/drugs.
- **Know the signs of Mg toxicity** if being discharged on home management.

## 8 🧠 Memory Boosters

### 💡 "STOP" Preterm Labor Care

- **S** — Steroids (betamethasone) for fetal lungs
- **T** — Tocolytics (Mg, nifedipine, indomethacin)
- **O** — Observe fetus (continuous EFM)
- **P** — Position left lateral + Protect (GBS ppx)

### 💡 Mag Toxicity — "Lose the 4 R's"

- **R**eflexes — absent DTRs
- **R**espirations — RR <12
- **R**enal output — urine <30 mL/hr
- **R**esponsiveness — ↓ LOC

### 💡 The "4-in-1" Rule

**> 4 contractions in 1 hour** = call provider. Easiest teaching point to remember at home.

### 💡 "BETA = Baby"

**BETA**methasone helps **BA**by's lungs, not labor. Given to mom, but acts on fetus.

### 💡 Antidote Pairs

- **Mag sulfate** → Calcium Gluconate
- **Heparin** → Protamine sulfate
- **Warfarin** → Vitamin K
- **Opioids** → Naloxone

### 💡 PTL Risk Factors — "PRETERM"

- **P** — Previous preterm birth
- **R** — ROM (premature)
- **E** — Extremes of age (<17 or >35)
- **T** — Twins / multiples
- **E** — Endocrine (diabetes, thyroid)
- **R** — Recurrent UTIs / infection
- **M** — Malnutrition / substance use