



NEONATAL HYPOGLYCEMIA

Low Blood Glucose in the Newborn • NCLEX 2026 High-Yield Review

MATERNAL-NEWBORN



LGA / SGA



IDM



Preterm



Cold-stressed

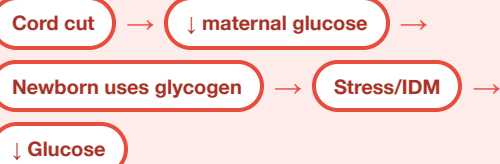


Asphyxia

1 DEFINITION & OVERVIEW

- ▶ **Blood glucose < 40 mg/dL** in newborn (some facilities < 45)
- ▶ Most common metabolic problem in newborns
- ▶ Brain depends on glucose → risk of permanent neuro damage if untreated

2 PATHOPHYSIOLOGY



- ▶ **IDM:** high fetal insulin persists → rapid glucose drop

3 SIGNS & SYMPTOMS

EARLY / MILD

- ▶ Jitteriness / tremors
- ▶ Poor feeding
- ▶ Lethargy, weak cry
- ▶ High-pitched cry
- ▶ Hypothermia, diaphoresis

LATE / SEVERE 🚨

- ▶ Apnea
- ▶ Seizures
- ▶ Cyanosis
- ▶ Respiratory distress
- ▶ Coma

🚨 **Jitteriness in a newborn is NEVER normal — always check glucose!**

4 PRIORITY NURSING INTERVENTIONS

- ▶ **Assess** glucose in at-risk newborns within 30–60 min of birth
- ▶ **Feed early** — breast or formula within 1 hour
- ▶ **Recheck** glucose 30 min after feeding
- ▶ **Maintain warmth** (cold stress ↑ glucose demand)
- ▶ **Skin-to-skin** contact
- ▶ **Monitor** neuro status & respiratory effort (ABCs)
- ▶ **IV D10W** if symptomatic or glucose < 25 mg/dL

5 PHARMACOLOGY

💧 **Dextrose 10% (D10W) IV**

MOA: Rapid glucose replacement

Use: Symptomatic / severe hypoglycemia

Nsg: Monitor IV site, recheck glucose q30 min

📌 **Glucagon (rescue)**

MOA: Stimulates glycogen breakdown

Use: When IV access unavailable

6 NCLEX TEST TRAPS ⚠️

- ▶ Do NOT confuse with **sepsis** — both cause jitteriness/lethargy
- ▶ Glucose < 40 is **always treated**, even if asymptomatic
- ▶ NEVER give PO feeds to a seizing or unconscious newborn — IV only
- ▶ Feeding is **priority** over bathing for at-risk infant
- ▶ Warm the baby BEFORE rechecking glucose (cold stress lowers it)

7 PATIENT / PARENT EDUCATION

- ▶ Feed **every 2–3 hours** — do not skip feedings
- ▶ Keep baby warm — skin-to-skin, hat, swaddle
- ▶ Report: lethargy, poor feeding, jitteriness, bluish color
- ▶ Attend all follow-up glucose checks
- ▶ For IDM infants: extra vigilance in first 24 h

8 MEMORY BOOSTER

TIRED

- T** – Tremors / jitteriness
- I** – Irritability / high-pitched cry
- R** – Respiratory distress
- E** – Eyes rolling / poor tone
- D** – Decreased temp (cold, pale, diaphoretic)

<40

mg/dL = Hypoglycemia

1 hr

First feed deadline

30 min

Recheck after feed

D10W

IV rescue fluid

NCLEX 2026 Test Plan • Client Needs: Physiological Adaptation • Clinical Judgment Model applies



NEONATAL HYPERBILIRUBINEMIA

Newborn Jaundice • NCLEX 2026 High-Yield Review

MATERNAL–NEWBORN



Sclera (first)



Face



Chest



Abdomen

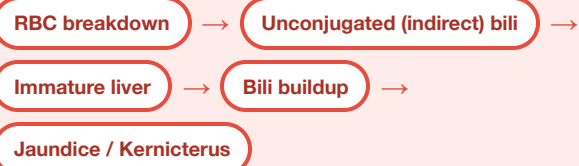


Feet (worst)

1 DEFINITION & OVERVIEW

- ▶ Elevated **serum bilirubin** → yellow skin & sclera
- ▶ Very common — most newborns have some visible jaundice
- ▶ Dangerous when **unconjugated bilirubin** crosses the blood-brain barrier → **kernicterus** (permanent brain damage)

2 PATHOPHYSIOLOGY



- ▶ Excreted via **stool** — good feeding = good elimination

⚡ PHYSIOLOGIC VS PATHOLOGIC JAUNDICE (HIGH-YIELD)

FEATURE	PHYSIOLOGIC (NORMAL)	PATHOLOGIC 🚨
Onset	AFTER 24 hours of life	WITHIN first 24 hours
Peak	Day 3–5, resolves by day 7	Rising rapidly > 5 mg/dL/day
Cause	↑ RBC turnover + immature liver	Rh/ABO incompat, sepsis, hemolysis, liver disease
Treatment	Feed often, monitor	Phototherapy, IVIG, possibly exchange transfusion

3 SIGNS & SYMPTOMS

EARLY / MILD

- ▶ Yellow **sclera** first
- ▶ Yellow face → chest → belly → feet (head-to-toe)
- ▶ Poor feeding
- ▶ Mild lethargy
- ▶ Dark urine, light stool

SEVERE: KERNICTERUS 🚨

- ▶ High-pitched cry
- ▶ Hypertonia / hypotonia
- ▶ **Opisthotonos** (arched back)
- ▶ Seizures, apnea
- ▶ Poor suck, fever

🚨 **Jaundice in the FIRST 24 HOURS = ALWAYS pathologic — escalate immediately!**

4 PRIORITY NURSING INTERVENTIONS (PHOTOTHERAPY FOCUS)

ASSESSMENT

- ▶ Assess jaundice via **blanching** (press forehead)
- ▶ Monitor transcutaneous & serum bilirubin
- ▶ Monitor temp (q2–4h) — can over/underheat
- ▶ Strict I&O including stools

PHOTOTHERAPY CARE

- ▶ **Protect eyes** with patches/shield
- ▶ Cover genitals; leave rest of skin exposed
- ▶ **Turn q2h** for max exposure
- ▶ Maintain hydration — feed q2–3h
- ▶ **NO lotions or oils** (burn risk)

5 PHARMACOLOGY & TREATMENTS

💡 Phototherapy (1st-line)

Blue light converts bili → water-soluble form → excreted

📌 IVIG

Use: Rh or ABO incompatibility

🔴 Exchange Transfusion

Use: Severe / refractory cases, prevents kernicterus

6 NCLEX TEST TRAPS ⚠️

- ▶ **< 24 hrs = pathologic** (NOT normal). > 24 hrs = physiologic
- ▶ Do NOT stop breastfeeding — **continue & feed more often**
- ▶ **Breastfeeding jaundice** = not enough intake (early, fix with more feeds)
- ▶ **Breast milk jaundice** = substances in milk (later, usually benign)
- ▶ No lotions/oils under phototherapy lights (burns!)
- ▶ **Cover eyes & genitals** — expose everything else
- ▶ Pale stools + dark urine = possible biliary atresia, not typical jaundice

7 PATIENT / PARENT EDUCATION

- ▶ Feed **8–12 times per 24 hours** — fluids flush bili via stool
- ▶ Press forehead — if skin stays yellow after blanching = jaundice
- ▶ Yellowing clears **bottom** → **top** (opposite of onset)
- ▶ Attend all follow-up bilirubin checks
- ▶ Report: poor feeding, extreme sleepiness, dark urine, pale stool, fever, arching back

8 MEMORY BOOSTER

"1-DAY RULE"

Before 24 hr → Bad (pathologic) 🚫

After 24 hr → Ordinary (physiologic) ✓

JAUNDICE

- J** – Jaundiced sclera first
- A** – Assess bili (blanch forehead)
- U** – UV / phototherapy light
- N** – No lotions on skin
- D** – Diapers only (expose skin)
- I** – I&O + eye shields
- C** – Cephalocaudal (head → toe)
- E** – Encourage feeding q2–3h

24 h

Pathologic cutoff

q2h

Turn under lights

8–12

Feeds per day

No

Lotions / oils