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

Cord cut → ↓ maternal glucose → Newborn uses glycogen → Stress/IDM → ↓ Glucose

- **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	1 hr	30 min	D10W
mg/dL = Hypoglycemia	First feed deadline	Recheck after feed	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

RBC breakdown → Unconjugated (indirect) bili → Immature liver → Bili buildup → Jaundice / Kernicterus

- 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	q2h	8–12	No
Pathologic cutoff	Turn under lights	Feeds per day	Lotions / oils

NCLEX 2026 Test Plan • Client Needs: Physiological Adaptation • Prioritize ABCs + Safety