

NGN NCLEX 2026 • VISUAL REFERENCE NO. 47

Periorbital Ecchymosis

"Raccoon Eyes" — Nursing Care & Clinical Judgment

NEUROLOGICAL

TRAUMA / HEAD INJURY

BASILAR SKULL FRACTURE

INCREASED ICP

ADULT & PEDIATRIC

SOURCE NOTE This topic is *not* in your uploaded personal notes set. Content is drawn from standard NGN NCLEX 2026 references — Saunders Comprehensive Review (2025 ed.), ATI Adult Med-Surg, Lippincott NCLEX-RN, and Brain Trauma Foundation (BTF) guidelines for severe TBI.

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Definition & Overview

WHAT IT IS • WHY IT MATTERS

Periorbital ecchymosis is **bilateral bruising around both eyes** that develops *after* head trauma — not from a direct blow to the face.

- ▶ **Hallmark sign** of an anterior basilar skull fracture (fracture through the floor of the anterior cranial fossa / cribriform plate).
- ▶ Blood from the fracture **tracks down through facial tissue planes** and pools in the loose connective tissue around the eyes.
- ▶ Appears **6–12 hours** after injury and may take up to **2–3 days** to fully develop — a delayed finding the nurse must actively look for.
- ▶ Always paired with assessment for **CSF leak, Battle's sign**, and rising ICP — periorbital ecchymosis alone is a "tip of the iceberg" finding.

WHY NCLEX CARES

A patient with "two black eyes" after a fall, MVC, or assault is **not** simply bruised. The NGN exam tests whether you recognize this as a **basilar skull fracture cue** and avoid contraindicated interventions (NG tube, nasal suction, nose blowing) that could push contaminated material — or the tube itself — through the cribriform plate into the brain.

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Pathophysiology

MECHANISM • STEP BY STEP

STEP 1

High-impact head trauma (MVC, fall, assault, blast)

STEP 2

Fracture through anterior cranial fossa floor / cribriform plate

STEP 3

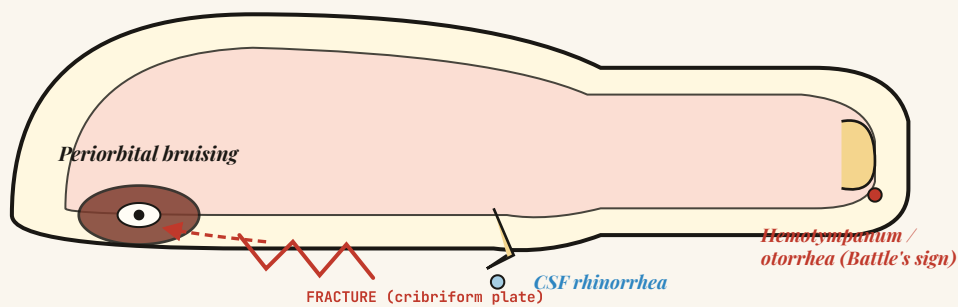
Tearing of dura → blood & CSF leak from intracranial space

STEP 4

Blood tracks along facial planes into loose periorbital tissue

STEP 5

Bilateral "raccoon eye" bruising appears 6–12 h later



ANTERIOR BASILAR FRACTURE → BLOOD TRACKS FORWARD TO ORBITS • POSTERIOR FRACTURE → TRACKS TO MASTOID (BATTLE'S SIGN)

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Signs & Symptoms

EARLY FINDINGS • LATE FINDINGS • RED FLAGS

Early (0–12 h) **Cues**

- ▶ **Headache** at impact site / generalized
- ▶ **Clear or blood-tinged drainage** from nose (rhinorrhea) or ears (otorrhea)
- ▶ **Anosmia** — loss of smell (CN I damage at cribriform plate)
- ▶ **Hemotympanum** — blood behind tympanic membrane
- ▶ Nausea / vomiting
- ▶ Brief LOC at scene, transient confusion

Late (6 h – 3 days) **Develops**

- ▶ **Bilateral periorbital ecchymosis** (raccoon eyes)
- ▶ **Battle's sign** — mastoid ecchymosis behind the ear
- ▶ Persistent CSF leak (**halo / ring sign** on gauze: yellow halo around blood spot)
- ▶ CN deficits — vision changes, facial droop, hearing loss
- ▶ Meningitis signs (fever, nuchal rigidity, photophobia) if CSF leak contaminated

RED FLAG — ESCALATE IMMEDIATELY

- **Cushing's triad** = ↑ systolic BP with widening pulse pressure + bradycardia + irregular respirations → impending herniation
- **Decreasing GCS** ≥ 2 points OR sudden drop to ≤ 8 (intubate)
- **Unilateral fixed & dilated pupil** — "blown pupil" = uncal herniation
- **Posturing** — decorticate (flexion) or decerebrate (extension)
- **New or worsening CSF leak** with fever / nuchal rigidity

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Priority Nursing Interventions

ABC FRAMEWORK • SAFETY • NCLEX PRIORITIZATION

A

AIRWAY

- **Maintain patency** — jaw thrust (not head-tilt) if c-spine not cleared
- Suction **orally only** — never nasally
- Prepare for intubation if GCS ≤ 8
- C-spine precautions until cleared

B

BREATHING

- Monitor rate, depth, pattern (Cheyne-Stokes, ataxic = brainstem involvement)
- $\text{SpO}_2 \geq 95\%$ — hypoxia worsens ICP
- Avoid hyperventilation unless herniation imminent (transient $\downarrow \text{PaCO}_2$ to 30–35)

C

CIRCULATION & NEURO

- **GCS & pupils q1h** initially
- Maintain **CPP > 60 mmHg**; SBP > 90
- **HOB 30°**, head midline (promotes venous drainage)
- Strict I&O; daily weight
- Normothermia — treat fever aggressively

🚫 ABSOLUTE "NEVER DO" LIST

- **NEVER** insert an NG tube (use OG instead)
- **NEVER** suction nasally
- **NEVER** pack the nose or ears
- **NEVER** let the patient blow their nose
- **NEVER** wipe drainage — let it drip onto sterile gauze
- **NEVER** give aspirin/NSAIDs (bleeding risk)

- **NEVER** position flat or Trendelenburg (↑ICP)
- **NEVER** restrain a restless patient before assessing for hypoxia / ↑ICP

✍ CSF VS. MUCUS — TWO QUICK TESTS

(1) Halo / Ring Test: drip drainage onto sterile gauze. Blood pools in the center; CSF spreads outward forming a **yellow ring/halo** = positive for CSF. **(2) Glucose Strip:** CSF contains glucose (mucus does not). Note — false positives possible if blood is present, so the halo test is generally more reliable at bedside.

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Pharmacology

CLASS • MECHANISM • SIDE EFFECTS • NURSING

DRUG / CLASS	MECHANISM (SIMPLE)	KEY SIDE EFFECTS	NURSING CONSIDERATIONS
Mannitol <i>Osmotic diuretic</i>	Pulls fluid from brain tissue into vasculature → ↓ICP	Dehydration, electrolyte loss, rebound ICP, pulmonary edema	Use in-line filter , check for crystals, monitor serum osmolality (target 300–320), I&O hourly
3% Hypertonic Saline	Pulls fluid into vasculature via osmotic gradient → ↓ICP	Hypernatremia, pulmonary edema, phlebitis	Central line preferred ; monitor Na ⁺ q6h (target <160 mEq/L)
Phenytoin / Levetiracetam <i>Antiepileptic</i>	Stabilizes neuronal membranes — prophylaxis for post-traumatic seizure (first 7 days)	Phenytoin: gingival hyperplasia, ataxia, rash, narrow therapeutic window (10–20 mcg/mL)	Phenytoin in NS only (precipitates in dextrose); levetiracetam preferred — fewer interactions
Acetaminophen	Antipyretic / mild analgesic — preferred for pain & fever (no bleeding risk)	Hepatotoxicity if > 4 g/day	First-line for headache & fever; aggressively treat T > 38°C (fever raises ICP)
Stool softeners <i>Docusate</i>	Prevent Valsalva (straining raises ICP)	Cramping (rare)	Start early; avoid enemas/suppositories that cause straining
Antibiotics <i>If CSF leak persists</i>	Prevent / treat meningitis from open communication with environment	Class-specific	Routine prophylaxis is controversial per BTF; given only if leak persists or signs of meningitis develop
 Aspirin / NSAIDs / Anticoagulants	AVOID — platelet inhibition & anticoagulation worsen intracranial bleeding. Use acetaminophen instead.		

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NCLEX Test Traps

WRONG ANSWER • RIGHT ANSWER • WHAT TO CHOOSE

TRAP	"Patient has two black eyes after a car accident — apply cold compresses for the bruising."
WRONG	Treating it like cosmetic bruising
RIGHT	Recognize possible basilar skull fracture → full neuro assessment, HOB 30°, check for CSF leak

TRAP	"Insert an NG tube to decompress the stomach before surgery."
WRONG	Nasal route — could enter brain via cribriform plate
RIGHT	Use orogastric (OG) tube — contraindicated nasal anything until basilar fx ruled out

TRAP	"Pack the patient's nose with gauze to stop the drainage."
WRONG	Traps CSF → meningitis risk, ↑ICP
RIGHT	Place loose "drip pad" sterile gauze under nose, change PRN, halo-test drainage

TRAP	"BP suddenly 198/72, HR 48, breathing irregular — give the PRN antihypertensive."
WRONG	Treating Cushing's triad as hypertension
RIGHT	This is impending herniation — call rapid response/HCP, prepare osmotic therapy, do NOT drop BP (need CPP)

TRAP	"Patient is anxious and restless — give a benzodiazepine."
WRONG	Sedating before ruling out hypoxia or ↑ICP

RIGHT

Restlessness is an early sign of ↑ICP / hypoxia — assess SpO₂,
GCS, pupils *first*

TRAP

"Periorbital bruising = Battle's sign."

WRONG

Confusing the two locations

RIGHT

Raccoon eyes = anterior fossa fx · Battle's = behind the ear
(mastoid, posterior fossa fx)

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Patient & Family Education

DISCHARGE TEACHING • SAFETY AT HOME

ACTIVITY RESTRICTIONS

- ▶ **Do NOT blow your nose** for at least 6 weeks (or per HCP) — can push air/bacteria into the brain
- ▶ **Sneeze with your mouth open**
- ▶ Avoid straining, heavy lifting (> 10 lb), bending at the waist — use stool softeners
- ▶ No swimming, diving, or air travel until cleared
- ▶ No contact sports until fully healed and cleared by HCP

WARNING SIGNS — CALL HCP / 911

- ▶ **Clear or watery drainage** from nose or ear (CSF leak)
- ▶ Worsening or new **severe headache**
- ▶ **Fever, stiff neck, photophobia** — meningitis
- ▶ New confusion, drowsiness, slurred speech, weakness on one side
- ▶ Repeated vomiting, seizure, vision changes, fluid behind eardrum
- ▶ Bruising spreading or worsening after 72 h

SELF-CARE & RECOVERY

- ▶ Sleep with **HOB elevated 30°** on 2 pillows for first 1–2 weeks
- ▶ Use cool compresses around (not on) the eyes for comfort — bruising resolves in 2–3 weeks
- ▶ Take **acetaminophen** only — no aspirin, ibuprofen, naproxen
- ▶ Limit screen time / loud environments early on
- ▶ Hydrate and eat soft foods if anosmia affects appetite

FAMILY TEACHING

- ▶ Wake the patient every 2–4 h the first night to assess orientation (per HCP)
- ▶ Do not leave alone the first 24 h
- ▶ Know how to use the GCS-style "eyes/voice/movement" check
- ▶ Keep all follow-up appointments — repeat CT may be needed
- ▶ Helmet use, seatbelts, fall prevention going forward

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Memory Boosters & Mnemonics

PATTERNS · ASSOCIATIONS · QUICK RECALL

RACCOON

- R** Raised ICP — monitor neuro q1h
- A** Anosmia — CN I damage at cribriform plate
- C** CSF leak — halo sign +
- C** Cushing's triad — late, deadly
- O** Otorrhea & hemotympanum
- O** Orbital bruising (bilateral)
- N** No NG / No nasal suction / No nose blowing

BASIL

- B** Battle's sign (posterior fossa)
- A** Anosmia
- S** See raccoon eyes (anterior fossa)
- I** Inner ear blood — hemotympanum, otorrhea
- L** Leak of CSF — halo test, glucose strip

Use BASIL to remember the **5 cardinal signs of basilar skull fracture**.

*"Raccoons in the **FRONT**, Battle in the **BACK**."*

PATTERN RECOGNITION

"Black eyes **without** direct facial trauma" = look at the **brain**, not the face. Always ask: "How did the bruising appear?"

QUICK ASSOCIATION

Halo sign + raccoon eyes = basilar fx ·
Cushing's triad = late herniation ·
Restlessness = early ↑ICP

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NCJMM Clinical Judgment Walkthrough

NEXT GENERATION CLINICAL JUDGMENT MEASUREMENT MODEL • 6 COGNITIVE STEPS

SCENARIO

A 32-year-old male is admitted to the ED after a motorcycle crash 8 hours ago — helmet was displaced. On admission: **GCS 13** (E3 V4 M6), BP 138/82, HR 92, RR 18, SpO₂ 96% on RA. Now, on your shift, his wife reports the bruising "looks worse." You observe **bilateral periorbital ecchymosis** developing, a small **yellow-tinged spot on the pillowcase** near his nose, and **GCS now 11** (E3 V3 M5).

1

Recognize Cues

Bilateral periorbital ecchymosis · yellow-stained drainage on pillow · GCS dropped 2 points (13 → 11) · mechanism = high-impact head trauma 8 h ago · helmet displaced.

2

Analyze Cues

Pattern fits **anterior basilar skull fracture** with possible **CSF rhinorrhea**. Declining GCS suggests rising ICP or evolving intracranial bleed. Yellow tinge around blood on cloth = likely halo / CSF.

3

Prioritize Hypotheses

#1 Worsening ICP / impending herniation (highest acuity) → **#2 CSF leak with meningitis risk** → #3 c-spine injury not yet cleared → #4 pain / anxiety contributing to vitals.

4

Generate Solutions

HOB to 30° midline · full neuro & pupil check · halo test on pillow drainage · place sterile drip pad · hold any nasal interventions · notify HCP/rapid response · prepare for stat CT & possible mannitol/3% NS.

5

Take Action

Elevate HOB 30° midline · perform GCS & pupils now (document) · halo test = **positive** for CSF · place loose sterile pad · O₂ 2 L NC to keep SpO₂ ≥ 95% · call HCP with SBAR · do **not** insert NG/suction nasally.

6

Evaluate Outcomes

Desired: GCS stable or improves · pupils equal & reactive · vitals stable (no Cushing's triad) · no new neuro deficits · drainage controlled · patient/family understand restrictions. **If worsens:** escalate, prepare for intubation & ICU transfer.