NEUROLOGICAL SYSTEM · HIGH-YIELD NCLEX REVIEW

Spinal *Shock*

A transient, complete suppression of all spinal cord reflex activity below the level of acute spinal cord injury — distinct from **neurogenic shock** and **autonomic dysreflexia**, though frequently confused with both on the NCLEX.

PRIORITY TOPIC | NEURO · TRAUMA | NGN NCLEX 2026 | CLINICAL JUDGMENT

i **Source disclosure:** This topic was not present in Diane's uploaded reference notes. Content has been compiled from standard NGN NCLEX 2026 references (Saunders Comprehensive Review, ATI Med-Surg, Lippincott NCLEX-RN, and current evidence-based neurotrauma guidelines).

1

SECTION ONE

Definition & Overview

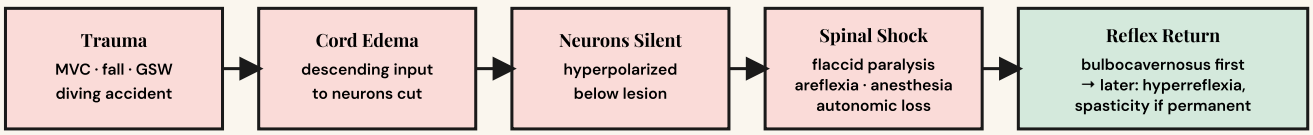
- **Spinal shock** is the **temporary loss of ALL neurologic function** — motor, sensory, reflex, and autonomic — **below** the level of an acute spinal cord injury (SCI).
- It is a **neurologic phenomenon**, not a hemodynamic one. The cord is "stunned" — reflex arcs are silent because descending input has been abruptly cut off.
- **Onset:** immediately after injury. **Duration:** 48 hours to several weeks (occasionally months).
- **Resolution clue:** return of reflexes — the **bulbocavernosus reflex** is classically the first to come back, signaling the end of spinal shock.

> *"Spinal shock is what the cord does. Neurogenic shock is what the blood pressure does."*

SECTION TWO

2 Pathophysiology — Step by Step

1. **Traumatic injury** (MVC, fall, GSW, diving) damages the spinal cord at a specific level.
2. Cord tissue **swells and bruises** → descending neural input from the brain is abruptly interrupted.
3. Spinal neurons **below the lesion** lose their normal excitatory drive and become **hyperpolarized / silent**.
4. Result: **complete areflexia, flaccid paralysis, anesthesia,** and loss of autonomic tone below the injury.
5. Over days–weeks, spinal neurons gradually regain excitability → reflexes return (eventually **hyperreflexia / spasticity** may develop if injury is permanent).



Onset: immediate · Duration: 48 hrs to several weeks · Resolution: gradual return of reflexes

SECTION THREE

3 Signs & Symptoms — Early vs. Resolving

EARLY (Acute Phase)

- **Flaccid paralysis** below the level of injury
- **Complete loss of sensation** — pain, touch, temperature, proprioception
- **Areflexia** — absent deep tendon reflexes
- **Urinary retention** — atonic bladder, requires Foley
- **Paralytic ileus** — absent bowel sounds, abdominal distension
- **Loss of thermoregulation** — poikilothermia (body assumes room temp)
- **Priapism** in males (sustained erection from unopposed parasympathetic tone)
- **Anhidrosis** below injury — no sweating

RESOLVING (Recovery Phase)

- **Bulbocavernosus reflex returns** — earliest sign that spinal shock is ending
- Deep tendon reflexes **return, often hyperactive**
- Flaccid → **spastic paralysis** if injury is permanent
- Bladder transitions from atonic → **reflex (spastic) bladder**
- Bowel function may return on a reflexive schedule
- Risk of **autonomic dysreflexia** emerges for injuries **T6 and above**

RED FLAG: Injury at C3–C5 threatens the phrenic nerve → respiratory arrest. Airway is always the first priority.

RED FLAG: If neurogenic shock co-exists, expect bradycardia + hypotension + warm dry skin below the injury — distributive, not hypovolemic.

SECTION FOUR · THE NCLEX KILLER

4 Spinal Shock vs. Neurogenic Shock vs. Autonomic Dysreflexia

These three are **frequently confused** on the NCLEX. They are **distinct entities** that can overlap in the same patient at different points in time.

	SPINAL SHOCK	NEUROGENIC SHOCK	AUTONOMIC DYSREFLEXIA
What is it?	Loss of all reflex activity below SCI	Distributive shock from loss of sympathetic tone	Massive sympathetic discharge from a stimulus below SCI
Timing	Immediately after acute SCI; lasts days–weeks	Within minutes–hours of SCI; lasts ~1–6 weeks	**AFTER** spinal shock resolves (often months later)
Injury level	Any level	T6 and above (sympathetic outflow disrupted)	**T6 and above** only
BP	Variable (often normal unless co-occurring)	**HYPOtension**	**SEVERE HYPERtension** (sudden, dangerous)
HR	Variable	**Bradycardia**	**Bradycardia** (baroreceptor reflex)
Skin	Anhidrosis below; thermoregulation lost	Warm, dry, flushed below injury	Flushing & sweating ABOVE injury; pale & cool below
Hallmark	Flaccid paralysis + areflexia	Brady + Hypotension + Warm dry skin	Pounding headache + HTN crisis + diaphoresis above lesion
Triggers	The injury itself	The injury itself	**Full bladder** (#1), fecal impaction, tight clothing, pressure injury
First action	Airway, immobilize, support BP	IV fluids, atropine, vasopressors	**SIT UP, find & remove trigger** (empty bladder!)

SECTION FIVE

5 Priority Nursing Interventions (ABC Framework)

A AIRWAY · B BREATHING

- **Assess** respiratory rate, depth, and effort q1h initially — high cervical injuries (C3–C5) impair the phrenic nerve.
- **Monitor** SpO_2 and ABGs; have intubation/ventilator equipment at bedside.
- **Suction** as needed — cough reflex may be impaired.
- **Reposition** q2h to prevent atelectasis (within spinal precautions).

C CIRCULATION

- **Monitor** BP & HR continuously — watch for neurogenic shock (brady + hypoTN).
- **Administer** IV fluids cautiously; **vasopressors** (phenylephrine, norepinephrine) per orders.
- **Administer** atropine for symptomatic bradycardia.
- **DVT prophylaxis** — SCDs and pharmacologic agents; high risk due to immobility.

IMMOBILIZATION & SAFETY

- **Maintain** cervical collar / log-roll only / spine board precautions until cleared.
- **Avoid** any flexion, extension, or rotation of the spine.
- **Prepare** for halo traction or surgical stabilization as ordered.

ELIMINATION & GI

- **Insert Foley** catheter — atonic bladder causes urinary retention.
- **Insert NG tube** for paralytic ileus and gastric decompression.
- **Monitor** bowel sounds, abdominal girth.
- **Stress ulcer prophylaxis** — H2 blocker or PPI.

TEMPERATURE & SKIN

- **Regulate** room temperature — patient is poikilothermic.
- **Reposition** q2h; pressure injury prevention is paramount.

PRIORITY ORDER: Airway → Cervical immobilization → Breathing → Circulation → Disability/Neuro assessment → Exposure. Always.

SECTION SIX

6 Pharmacology

Methylprednisolone

CORTICOSTEROID (NASCIS PROTOCOL — CONTROVERSIAL)

Use: Acute SCI, ideally within 8 hrs (no longer routine in all centers)

Action: ↓ inflammation & secondary cord injury

Watch: Hyperglycemia, infection risk, GI bleeding, delayed wound healing

Atropine

ANTICHOLINERGIC

Use: Symptomatic bradycardia in neurogenic shock

Action: Blocks vagal tone → ↑ heart rate

Watch: Tachycardia, dry mouth, urinary retention

Norepinephrine / Phenylephrine

VASOPRESSORS

Use: Hypotension unresponsive to fluids in neurogenic shock

Action: α-agonist → vasoconstriction → ↑ MAP

Watch: Titrate to MAP ≥ 85–90 mmHg (perfuse the cord); extravasation

Enoxaparin (Lovenox)

LMWH — DVT PROPHYLAXIS

Use: Prevent DVT/PE in immobilized SCI patient

Watch: Bleeding, thrombocytopenia; hold for procedures

Pantoprazole / Famotidine

PPI / H2 BLOCKER

Use: Stress ulcer prophylaxis (Curling/Cushing risk)

SECTION SEVEN

7 NCLEX Test Traps ⚠

✗ WRONG	→	✓ RIGHT
"Spinal shock is the same as neurogenic shock."	→	They are **distinct**. Spinal shock = loss of reflexes. Neurogenic shock = hemodynamic collapse from loss of sympathetic tone.
"Autonomic dysreflexia happens during spinal shock."	→	AD occurs **AFTER** spinal shock resolves and only in injuries **T6 and above**.
"Hypotension in SCI = give a fluid bolus first."	→	In neurogenic shock, hypotension is from vasodilation, not volume loss. Excessive fluids → pulmonary edema. **Vasopressors** are the answer.
"Hyperreflexia = still in spinal shock."	→	Return of reflexes — including hyperreflexia — signals the **END** of spinal shock.
"Pounding headache + HTN in SCI = anxiety, give an SSRI."	→	This is **autonomic dysreflexia** — a medical emergency. **SIT THE PATIENT UP** and find the trigger (usually a full bladder).

SECTION EIGHT

8 Patient & Family Education

📚 Understanding the condition

- Spinal shock is **temporary** — return of reflexes does NOT mean return of function below the injury.
- Long rehabilitation ahead; physical/occupational therapy is essential.
- Emotional support — grief, depression, and altered body image are common and valid.

🏠 Long-term self-management

- **Bladder program:** intermittent catheterization schedule to prevent retention/UTI.
- **Bowel program:** high-fiber diet, adequate fluids, scheduled evacuation.
- **Skin care:** inspect daily, reposition q2h, pressure-relief cushion.
- **ROM exercises:** prevent contractures and DVT.
- **Recognize autonomic dysreflexia** (once spinal shock resolves): pounding headache, sweating, flushing → sit up, call provider, check bladder.

SECTION NINE

9 Memory Mnemonics & Pattern Recognition

🧠 "FLACCID" — early findings of spinal shock

F — **Flaccid paralysis below injury**
muscle tone is gone

L — **Loss of sensation (pain, touch, temp)**
complete anesthesia below lesion

A — **Areflexia**
no DTRs, no bulbocavernosus reflex

C — **Cold & poikilothermic**
thermoregulation lost

C — **Constipation / paralytic ileus**
absent bowel sounds, distension

I — **Incontinence / urinary retention**
atonic bladder → Foley needed

D — **Drop in BP & HR if neurogenic shock co-occurs**
warm, dry skin below injury

🎯 Quick pattern recognition

- **"All reflexes gone after recent SCI"** → think **SPINAL shock**.
- **"Brady + Hypotension + Warm dry skin"** → think **NEUROGENIC shock**.
- **"Pounding headache + sudden HTN + chronic SCI above T6"** → think **AUTONOMIC DYSREFLEXIA**.
- **"Bulbocavernosus reflex returns"** → spinal shock is **resolving**.
- **"C3, C4, C5 keep the diaphragm alive"** — high cervical injuries threaten breathing.

10

SECTION TEN · NEXT-GEN CLINICAL JUDGMENT

NCJMM 6-Step Clinical Judgment Scenario

SCENARIO

A 24-year-old male is admitted to the trauma ICU 2 hours after a diving accident. He has a confirmed C5 spinal cord injury. He is awake but unable to move his legs, has no sensation below the nipple line, and his bladder is distended. Vitals: BP 82/48, HR 52, RR 22 shallow, SpO_2 91% on 4L NC, T 35.4°C. Bowel sounds absent. Patient reports "I can't feel anything below my chest, and I'm really cold."

1

RECOGNIZE CUES

What data stands out?

Recent C5 SCI · flaccid paralysis below nipple line · sensory loss · **distended bladder** (atonic) · **absent bowel sounds** (ileus) · **hypotension 82/48** · **bradycardia 52** · **hypothermia 35.4°C** · shallow respirations · borderline SpO_2. Cluster suggests **spinal shock + co-occurring neurogenic shock** with a high cervical injury threatening respiratory function.

2

ANALYZE CUES

What do the cues mean together?

C3–C5 injury → **phrenic nerve at risk** → impending respiratory failure. Loss of sympathetic outflow above T6 → unopposed vagal tone → bradycardia, vasodilation, hypotension, poikilothermia. Atonic bladder & paralytic ileus = autonomic component of spinal shock. This is a multi-system emergency, not isolated SCI.

3

PRIORITIZE HYPOTHESES

Rank the threats

1st Impending respiratory failure (phrenic involvement, shallow RR, low SpO_2) — *Airway/Breathing.*
2nd Neurogenic shock (BP 82/48 + HR 52) — *Circulation, cord perfusion.*
3rd Hypothermia from lost thermoregulation.
4th Urinary retention & ileus (manage but not immediately life-threatening).

4

GENERATE SOLUTIONS

What interventions are indicated?

Maintain cervical immobilization. Prepare for intubation; titrate O_2 to keep SpO_2 ≥ 94%. IV fluid bolus cautiously, then **norepinephrine** to keep MAP ≥ 85–90 mmHg for cord perfusion. **Atropine** for symptomatic bradycardia. Insert **Foley** and **NG tube**. Apply warming blankets. Place on continuous telemetry & SpO_2. Notify neurosurgery.

5

TAKE ACTION

What does the nurse do — in order?

(1) Position to protect airway in cervical alignment; suction & prepare BVM/intubation. (2) Increase O_2; reassess respirations q15min. (3) Administer 500 mL NS bolus, start norepinephrine drip per order. (4) Atropine 0.5 mg IV push for HR < 50 with symptoms. (5) Insert Foley → expect large volume return. (6) Insert NG to low intermittent suction. (7) Apply warming blanket; monitor core temp. (8) Document neuro exam and reassess q1h.

6

EVALUATE OUTCOMES

What signals the interventions are working?

SpO_2 ≥ 94% with adequate RR & depth. MAP sustained ≥ 85–90 mmHg. HR > 60 without symptoms. Foley draining; bladder no longer distended. Bowel sounds beginning to return. Core temp 36.5–37.5°C. Neuro exam stable, no rostral progression of sensory loss. **Anticipate** later return of bulbocavernosus reflex as spinal shock resolves — and educate the team to monitor for autonomic dysreflexia thereafter.