

NEUROLOGICAL SYSTEM

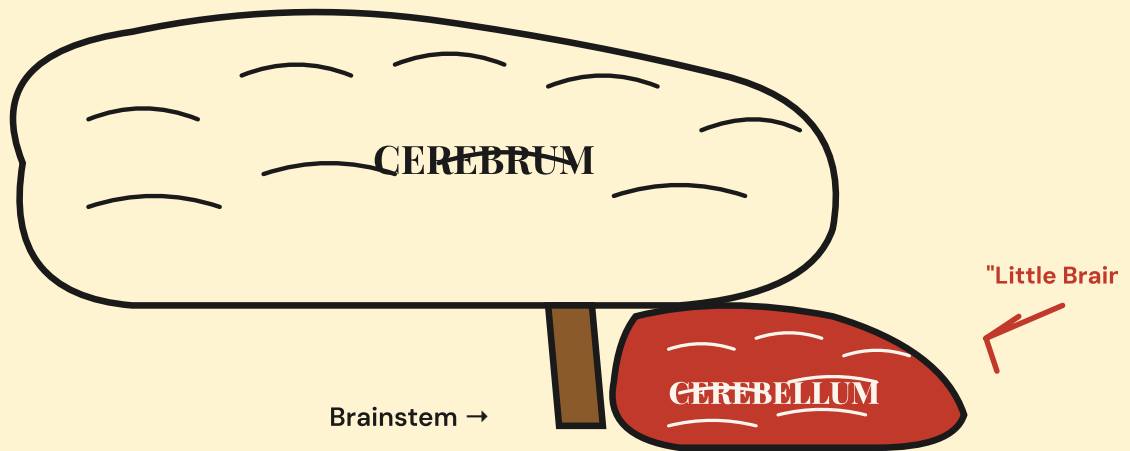
Cerebellum Nursing Assessment

High-yield coordination, balance & equilibrium testing for the NGN NCLEX 2026 —
recognize cerebellar dysfunction and prioritize safety.

DIANE'S NGN NCLEX 2026 VISUAL STUDY LIBRARY

 **Content Sourcing Note:** *This topic was not covered in Diane's uploaded reference notes. Content has been compiled from standard NGN NCLEX 2026 references including Saunders Comprehensive Review for the NCLEX-RN, ATI Fundamentals & Adult Medical-Surgical, Lippincott Manual of Nursing Practice, and current neurological assessment guidelines.*

1 Definition & Overview



- The **cerebellum** ("little brain") sits posterior to the brainstem in the back of the skull — it is the **coordination center** of the CNS.
- Responsible for **coordinating voluntary movement, balance, posture, equilibrium, gait, and fine motor control**.
- It does **NOT initiate** movement — it **refines and coordinates** what the motor cortex starts.
- Cerebellar lesions produce **ipsilateral symptoms** (same side as the damage) — unlike cerebral strokes which cause contralateral deficits.

2

Pathophysiology: How Dysfunction Happens

Normal Function: Cerebellum receives sensory input from spinal cord, motor cortex, vestibular system, and proprioceptors.



Integrates information to **fine-tune timing, force, and accuracy** of voluntary movement.



Damage occurs from stroke (PICA — posterior inferior cerebellar artery), tumor, MS, chronic alcohol use, B12 deficiency, trauma, or hereditary ataxia.



Loss of **coordination, balance, and equilibrium** → ataxia, tremor, dysmetria, gait disturbance.



HIGH FALL RISK → safety becomes the #1 nursing priority.



RED FLAG: Sudden onset of cerebellar signs (severe ataxia, vertigo, vomiting, occipital headache) can indicate a cerebellar stroke or hemorrhage — life-threatening due to brainstem compression. Notify HCP immediately.

3

Signs & Symptoms of Cerebellar Dysfunction



MNEMONIC: "DANISH"

The six cardinal signs of cerebellar disease — every nursing student should know this.

D

Dysdiadochokinesia

A

Ataxia

N

Nystagmus

I

Intention Tremor

S

Slurred
(Scanning)
Speech

H

Hypotonia

Early / Mild Signs

- ▶ Mild clumsiness with fine motor tasks
- ▶ Slight balance issues when turning
- ▶ Subtle gait changes (slight wide base)
- ▶ Difficulty with rapid hand movements
- ▶ Mild speech changes

Late / Severe Signs 🚑

- ▶ **Severe ataxia** — drunken, staggering gait
- ▶ **Dysmetria** — past pointing, missing targets
- ▶ **Intention tremor** — worsens approaching target
- ▶ **Truncal sway** — unable to sit upright
- ▶ Falls, vertigo, persistent vomiting

Key Terminology to Master

- ▶ **Ataxia:** Lack of muscular coordination — appears "drunk"
- ▶ **Dysmetria:** Inability to judge distance/range of movement (overshoots or undershoots)
- ▶ **Dysdiadochokinesia:** Inability to perform rapid alternating movements
- ▶ **Intention tremor:** Tremor that *worsens* as the hand approaches a target (opposite of Parkinson's resting tremor)
- ▶ **Scanning speech:** Slow, slurred speech with irregular pauses between syllables
- ▶ **Nystagmus:** Involuntary, rhythmic eye movements

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Priority Nursing Interventions (ABCs & Safety)

Airway / Breathing

- ▶ **Assess** swallow function — risk of aspiration with dysarthria/bulbar involvement
- ▶ **Monitor** respiratory pattern (cerebellar stroke can compress brainstem)
- ▶ **Position** upright during meals; thickened liquids if dysphagia
- ▶ **Suction** equipment at bedside

Circulation

- ▶ **Monitor** BP — sudden changes may signal worsening neurologic event
- ▶ **Check** for orthostatic hypotension before ambulation
- ▶ **Assess** neuro vital signs every 1–4 hours per protocol

SAFETY (Top Priority)

- ▶ **Bed in lowest position**, locked, call light within reach
- ▶ **Two side rails up** (institutional policy)
- ▶ **Non-skid footwear** at all times when out of bed
- ▶ **Gait belt** for all transfers and ambulation
- ▶ **Assist with ambulation** — never leave unattended
- ▶ **Clear pathways** — remove cords, clutter, rugs
- ▶ **Adequate lighting** day and night

Neuro Assessment

- ▶ **Perform** cerebellar tests each shift (see Section 5)
- ▶ **Document** changes from baseline immediately
- ▶ **Assess** LOC, pupils, motor strength, sensation
- ▶ **Collaborate** with PT/OT for mobility plan
- ▶ **Refer** to speech therapy for dysarthria/dysphagia



NCLEX PRIORITY: When a client has cerebellar dysfunction, **FALL PREVENTION** is always the priority answer — patient safety supersedes diagnostic testing, education, or comfort measures.

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Cerebellar Assessment Tests (Master These)

1. Romberg Test

How: Patient stands with feet together, arms at sides. Observe with eyes *open*, then have them *close* eyes for 20–30 seconds. Stand close to catch if needed.

Positive (abnormal): Patient sways or loses balance. Cerebellar lesion → sways with eyes *open* AND *closed*.
Sensory/posterior column issue → only sways with eyes *closed*.

2. Finger-to-Nose Test

How: Patient touches own nose, then nurse's fingertip (held about arm's length away), then back to nose. Repeat on both sides, faster each time. Move target.

Abnormal: Misses target = **dysmetria**. Tremor worsens approaching target = **intention tremor**.

3. Heel-to-Shin Test

How: Supine patient places heel of one foot on opposite knee, then slides heel down the shin to the ankle smoothly. Repeat bilaterally.

Abnormal: Heel falls off shin, jerky/uncoordinated movement = cerebellar ataxia (ipsilateral side).

4. Rapid Alternating Movements (RAM)

How: Patient pats thighs alternating palm up/palm down as quickly as possible. Or taps thumb to each finger in sequence.

Abnormal: Slow, awkward, irregular = **dysdiadochokinesia**.

5. Tandem Gait (Heel-to-Toe Walking)

How: Patient walks in a straight line placing the heel of one foot directly in front of the toes of the other foot. Walk close by for safety.

Abnormal: Wide-based, staggering, or veering gait = cerebellar ataxia. *This is highly sensitive for cerebellar dysfunction.*

6. Pronator Drift

How: Patient extends both arms forward with palms up, eyes closed, for 20–30 seconds.

Abnormal: Arm drifts downward and pronates → suggests motor weakness (more cerebral than cerebellar, but part of standard neuro exam).

7. Observe Gait & Posture

How: Watch the patient walk across the room — note base width, arm swing, turning, and overall coordination.

Abnormal: Wide-based, staggering, "drunken" gait, truncal sway, falling to one side.

6

NCLEX Test Traps ⚠️

✗ WRONG THINKING

"Romberg test only assesses the cerebellum."

✓ RIGHT THINKING

Romberg primarily tests **proprioception (posterior columns)** and vestibular function. *Cerebellar lesions cause swaying with eyes open AND closed*, while sensory ataxia worsens with eyes closed.

✗ WRONG THINKING

"Intention tremor and Parkinson's tremor are the same."

✓ RIGHT THINKING

Intention tremor (cerebellar) *worsens* with purposeful movement and approaching a target. **Resting tremor** (Parkinson's) occurs at rest and *improves* with intentional movement.

✗ WRONG THINKING

"Cerebellar stroke causes weakness on the opposite side of the body."

✓ RIGHT THINKING

Cerebellar lesions produce **IPSILATERAL** symptoms (same side). This is the opposite of cerebral cortex strokes, which cause contralateral deficits.

✗ WRONG THINKING

"Educate the patient about fall prevention first."

✓ RIGHT THINKING

Implement physical safety measures FIRST (bed low, gait belt, non-skid socks, assist with ambulation). Education comes after the immediate environment is safe.

✗ WRONG THINKING

"A patient who can touch finger-to-nose has a normal cerebellum."

✓ RIGHT THINKING

One normal test does not rule out dysfunction. **Always assess multiple cerebellar tests** (RAM, heel-to-shin, tandem gait, Romberg) — subtle deficits may show in only one test.

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Patient & Family Education

1

Use assistive devices (cane, walker) consistently — never refuse them.

2

Remove throw rugs, cords, and clutter from walkways at home.

3

Install grab bars in bathroom, near toilet and tub.

4

Ensure adequate lighting — especially night lights for hallway/bathroom.

5

Avoid alcohol — directly toxic to cerebellum, worsens ataxia.

6

Change positions slowly — sit on edge of bed before standing.

7

Wear non-skid, well-fitting shoes — no loose slippers or socks.

8

Follow PT/OT exercises — balance training improves outcomes.

9

Regular vision and hearing checks — sensory input helps compensate.

10

Report worsening — increased falls, new vertigo, severe headache, vomiting (emergency).

8

Memory Boosters & Pattern Recognition



DANISH Mnemonic

- ▶ Dysdiadochokinesia
- ▶ Ataxia
- ▶ Nystagmus
- ▶ Intention tremor
- ▶ Slurred (scanning) speech
- ▶ Hypotonia



Quick Associations

- ▶ "Looks drunk but isn't" → think **cerebellum**
- ▶ Cerebellum **COORDINATES** — doesn't initiate
- ▶ Cerebellar lesion = **IPSI**lateral signs
- ▶ Cerebral stroke = **CONTRA**lateral signs
- ▶ Intention tremor → worsens *approaching* target
- ▶ Wide-based gait = **cerebellar ataxia**



Cerebellum vs. Cerebrum

- ▶ **Cerebellum:** Coordination, balance, fine motor → ipsilateral signs
- ▶ **Cerebrum (motor cortex):** Initiates movement, strength → contralateral signs
- ▶ **Basal ganglia:** Smooths movement (Parkinson's) → resting tremor



Documentation Tip

- ▶ "Pt with **wide-based, ataxic gait**; positive Romberg with eyes open and closed."
- ▶ "**Dysmetria noted** on finger-to-nose, right side."
- ▶ "**Slow, dysrhythmic RAM** bilaterally consistent with dysdiadochokinesia."

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NCJMM Clinical Judgment Scenario



Scenario

A 68-year-old client is admitted with a 2-day history of progressive unsteady gait, slurred speech, and right-sided clumsiness. The client reports a fall yesterday. Vital signs: BP 158/92, HR 88, RR 18, SpO₂ 96%. Recent history of atrial fibrillation, non-compliant with anticoagulant therapy. The HCP orders a neurologic assessment and CT scan of the brain.

1

Recognize Cues

Relevant cues: Progressive ataxia, dysarthria, right-sided clumsiness, recent fall, A-fib, non-compliance with anticoagulants, elevated BP. **Key signs:** Cerebellar dysfunction symptoms with embolic stroke risk factors.

2

Analyze Cues

The combination of *right-sided* cerebellar signs (ipsilateral) with A-fib + missed anticoagulation strongly suggests a **right cerebellar ischemic stroke** (possibly PICA distribution). Elevated BP may be compensatory. Fall = immediate safety concern.

3

Prioritize Hypotheses

#1 priority: Acute cerebellar stroke with risk of brainstem compression and herniation. **#2:** Fall injury risk. **#3:** Aspiration from dysarthria/dysphagia. Lower priority: medication non-compliance education (later).

4

Generate Solutions

Initiate fall and aspiration precautions; perform neuro checks q1h; keep NPO until swallow eval; obtain stat CT/MRI; establish IV access; prepare for possible thrombolytics or anticoagulation per protocol; monitor LOC, pupils, motor function for deterioration.

5

Take Action

Bed in lowest position with side rails up; apply gait belt for all transfers; place call light in reach; perform full cerebellar assessment (DANISH); notify HCP of findings; obtain stat imaging; maintain head of bed at 30°; document baseline neuro status.

6

Evaluate Outcomes

Desired: No falls, stable or improving neuro exam, intact airway, no aspiration, CT/MRI confirms diagnosis enabling targeted treatment. **Reassess:** If neuro deterioration (decreased LOC, new pupil changes, worsening ataxia) → escalate to rapid response / stroke team.

Diane's NGN NCLEX 2026 Visual Study Library · Neurological System

Cerebellum Nursing Assessment · For exam preparation only · Always defer to current clinical guidelines & facility protocols