NEUROLOGICAL SYSTEM · MOVEMENT DISORDER

Parkinson's *Disease*

A chronic, progressive neurodegenerative disorder marked by the loss of dopamine-producing neurons in the substantia nigra — creating a profound dopamine/acetylcholine imbalance in the basal ganglia.

🧠 CNS Disorder | ⚕ NGN NCLEX 2026 | 🎯 NCJMM Integrated | 🧯 Fall & Aspiration Risk

1 Definition & Overview

What it is — and why it matters

WHAT

Progressive CNS Disorder

Chronic, slowly-progressive degeneration of dopaminergic neurons in the **substantia nigra** (basal ganglia).

WHO

Typical Onset

Usually >60 yrs; men > women. Etiology mostly idiopathic; may be drug-induced (antipsychotics) or genetic.

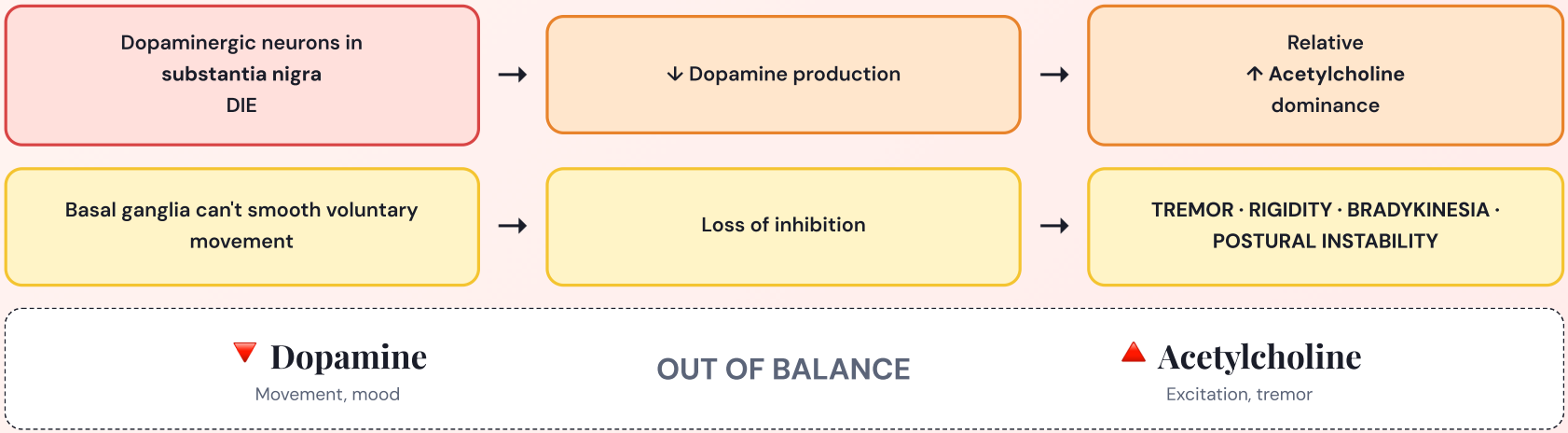
WHY IT MATTERS

Functional Impact

Affects **movement, posture, swallowing, speech** — high risk for falls, aspiration, and loss of independence.

2 Pathophysiology — Simplified

From cell death to tremor



Symptoms appear only after **~60–80%** of dopamine neurons are lost.

3 Signs & Symptoms

The cardinal "TRAP" of Parkinson's

T	R	A	P
Tremor	**Rigidity**	**Akinesia / Bradykinesia**	**Postural Instability**
"Pill-rolling" tremor at **rest**; ↓ with movement	"Cogwheel" resistance to passive movement	Slow or absent movement; difficulty initiating	Stooped posture, shuffling gait, **HIGH fall risk**

EARLY / MILD

- Unilateral tremor at rest (often hand)
- Subtle handwriting change — **micrographia** (small, cramped writing)
- Mild fatigue, soft voice
- Decreased arm swing when walking

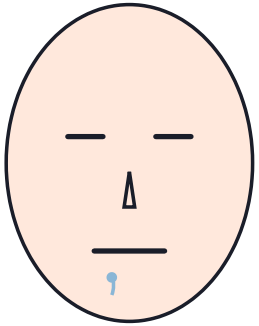
LATE / SEVERE

- **Mask-like facies** (blank expression, ↓ blinking)
- **Shuffling / propulsive gait** with festination
- Dysphagia → drooling / aspiration risk
- Monotone, hypophonic speech

- Loss of sense of smell (anosmia)

- Dementia, depression, hallucinations
- Autonomic: orthostatic hypotension, constipation, urinary issues

RED FLAGS: Sudden confusion + high fever + muscle rigidity in a patient on levodopa = **Neuroleptic Malignant-like Syndrome** (can occur when levodopa is abruptly stopped). Drooling + coughing with meals = aspiration danger.



Mask-like facies — flat affect, ↓ blinking, slight drooling from dysphagia

4 Priority Nursing Interventions

ABCs → Safety → Function

A

Airway / Aspiration

- Assess swallow before meals
- Thickened liquids; soft foods
- HOB ≥ 45° during & 30 min after meals

B

Balance / Safety

- Fall precautions — #1 priority
- Clear walkways; good lighting
- Rise slowly (orthostatic)

C

Cognition / Communication

- Allow extra time to respond
- Facial exercises; speech therapy
- Monitor for depression

- Suction at bedside
- Consistent, non-slip footwear
- Promote ROM daily to ↓ rigidity

Additional Priority Actions

- **Nutrition:** small frequent meals, high-fiber, ↑ fluids (for constipation)
- **Mobility:** daily ROM, PT/OT consult, assistive devices
- **Swallow:** chin-tuck position when eating
- **Sleep:** satin sheets help with turning
- **Hygiene:** allow extra time for ADLs
- **Skin:** reposition q2h if bedbound

5 Pharmacology

Goal: ↑ Dopamine or ↓ Acetylcholine

DRUG / CLASS	MECHANISM	KEY SIDE EFFECTS	NURSING CONSIDERATIONS
Levodopa-Carbidopa (Sinemet) *Dopamine precursor — #1 drug*	Levodopa → converts to dopamine in brain. Carbidopa ↓ peripheral breakdown.	N/V, orthostatic hypotension, dyskinesias, dark urine/sweat, hallucinations	**Avoid high-protein meals** (block absorption). **Never stop abruptly.** Avoid Vit B6 (pyridoxine) with levodopa alone. Watch for **on/off** phenomenon.
Dopamine Agonists *Ropinirole, Pramipexole, Bromocriptine*	Directly stimulate dopamine receptors	Somnolence, sudden sleep attacks, impulse-control disorders (gambling, shopping), hallucinations	Caution driving. Assess for behavioral changes. Rise slowly.
MAO-B Inhibitors *Selegiline, Rasagiline*	Block breakdown of dopamine → ↑ levels	Insomnia, HTN crisis with tyramine foods, serotonin syndrome w/ SSRIs	**Avoid tyramine foods** (aged cheese, wine, cured meats). No SSRIs/Demerol.
COMT Inhibitors *Entacapone, Tolcapone*	Block COMT enzyme → prolong levodopa action	Orange-brown urine (harmless), diarrhea, liver toxicity (tolcapone)	Always given **with levodopa.** Monitor LFTs with tolcapone.
Anticholinergics *Benztropine (Cogentin), Trihexyphenidyl*	↓ Acetylcholine to restore balance	Dry mouth, blurred vision, urinary retention, constipation, confusion	Best for tremor-dominant. **Avoid in elderly** (confusion, falls) & in glaucoma/BPH.

DRUG / CLASS	MECHANISM	KEY SIDE EFFECTS	NURSING CONSIDERATIONS
Amantadine *Antiviral w/ dopamine-releasing action*	Promotes dopamine release; NMDA antagonist	Livedo reticularis (mottled skin), ankle edema, confusion	Useful for dyskinesia. Monitor for CNS effects.

⚡ The "ON-OFF" Phenomenon

Fluctuations in levodopa response as disease progresses and drug "wearing off" occurs between doses.

✅ "ON" State

Drug working — mobility improves, symptoms controlled. May see **dyskinesias** (involuntary movements).

⛔ "OFF" State

Drug wearing off — tremor, rigidity, "freezing." Patient may appear frozen in place.

💊 ***Nursing:*** *Time meds exactly; give on schedule; report worsening fluctuations to HCP.*

6 Complications to Monitor

Progressive disease = cascading risks

💨 **Aspiration Pneumonia**

#1 cause of death. From dysphagia — assess swallow, thicken liquids.

🦴 **Falls & Fractures**

Postural instability + freezing. Hip fracture is a common outcome.

🧠 **Dementia & Depression**

Up to 40% develop Parkinson's dementia. Screen for suicidal ideation.

🚽 **Constipation**

📉 **Orthostatic Hypotension**

😵 **NMS-Like Syndrome**

From slowed GI motility + anticholinergics. ↑ fiber, fluid, activity.

From autonomic dysfunction + meds. Rise slowly, compression stockings.

If levodopa stopped abruptly: fever, rigidity, ↑ BP, confusion. Emergency.

7 NCLEX Test Traps ⚠

What students get wrong

⚠ **Trap #1 — Tremor Timing**

Parkinson's tremor is at **REST** (pill-rolling). It **decreases** with purposeful movement. Don't confuse with essential tremor (worse with activity).

⚠ **Trap #2 — Protein & Levodopa**

High-protein meals **BLOCK** levodopa absorption. Teach the patient to separate protein from doses, not avoid it entirely.

⚠ **Trap #3 — "Just Hold the Dose"**

NEVER abruptly stop levodopa — can trigger a neuroleptic malignant-like syndrome (fever, rigidity, ↑BP). Doses must be given on time.

⚠ **Trap #4 — Vitamin B6 Confusion**

Vit B6 (pyridoxine) blocks *levodopa alone*, but with **carbidopa** this is no longer a major issue (still avoid multivitamin megadoses).

⚠ **Trap #5 — Mask Face ≠ Ignoring You**

Flat affect is the disease — not depression or rudeness. Always assess mental status verbally; don't assume cognition from facial expression.

⚠ **Trap #6 — Anticholinergics in the Elderly**

Benztropine can worsen confusion, urinary retention, and fall risk in older adults. Not first-line for elderly clients.

⚠ **Trap #7 — Priority Action When "Freezing"**

Patient freezes mid-step → teach to **rock side to side** or **march in place** to break the freeze. Don't pull them — that's a fall risk.

8 Patient & Family Education

Empower + protect

💊 Medication Mastery

- Take levodopa on an **empty stomach** if tolerated
- Separate high-protein meals from doses
- Never skip or double doses — keep a log
- Report dark urine/sweat (normal) vs hallucinations (call HCP)

🚶 Movement & Safety

- Walk with wide base, swing arms, heels first
- Remove rugs; install grab bars
- If you freeze: rock, march, or imagine stepping over a line
- Use a walker/cane as prescribed

🍽️ Nutrition Tips

- Small, frequent meals
- Soft foods, thickened liquids if dysphagic
- ↑ fiber + ≥ 2 L fluid/day (if allowed)
- Sit fully upright to eat; stay up 30 min after

🗣️ Communication & Wellbeing

- Do facial & voice exercises daily (smile, exaggerate speech)
- Join a support group — isolation worsens depression
- Report mood changes, sleep attacks, or impulse behaviors
- Stay active: tai chi, swimming, dance improve balance

9 NCJMM Clinical Judgment Framework

NGN NCLEX 2026 thinking pathway

Apply the Next Gen NCLEX **Clinical Judgment Measurement Model** when caring for a Parkinson's client:

1
RECOGNIZE CUES
Pill-rolling tremor, shuffling gait, mask-like face, drooling, micrographia, orthostatic BP drop.

2
ANALYZE CUES
Connect symptoms to dopamine deficit. Differentiate on/off phenomenon from NMS-like crisis. Identify fall & aspiration risk.

3
PRIORITIZE ACTIONS
Airway/aspiration first → fall prevention → administer levodopa on schedule → swallow eval → ROM.

4
EVALUATE OUTCOMES
↓ Tremor, steadier gait, no falls, maintained weight, intact swallow, no aspiration, mood stable.

10 Memory Boosters

Mnemonics that stick

TRAP Cardinal Signs

Tremor at rest · **R**igidity (cogwheel) · **A**kinesia/bradykinesia · **P**ostural instability

SHAKE Parkinson's Recognition

Shuffling gait · **H**ypokinesia · **A**kinesia · **K**inetic tremor at rest · **E**xpressionless face

"Dopa-MINE" Remember the Loss

Parkinson's = **"Dopa-MINE is MISSING."** Meds try to replace it (levodopa) or mimic it (agonists) or stop its breakdown (MAO-B/COMT).

DOPE Levodopa Teaching

Dark urine/sweat OK · **O**n-off phenomenon · **P**rotein blocks absorption · **E**mpty stomach best

STOP Never Stop Abruptly

If levodopa is discontinued suddenly → NMS-like crisis (fever, rigidity, hypertension, confusion). **Always taper!**

"Tyramine" MAO-B Diet

Avoid **A**ged cheese · **W**ine & beer · **C**ured meats · **F**ermented foods — to prevent HTN crisis.

Parkinson's Disease · NGN NCLEX 2026 High-Yield Infographic · Clinical Judgment · Prioritization · Pharmacology