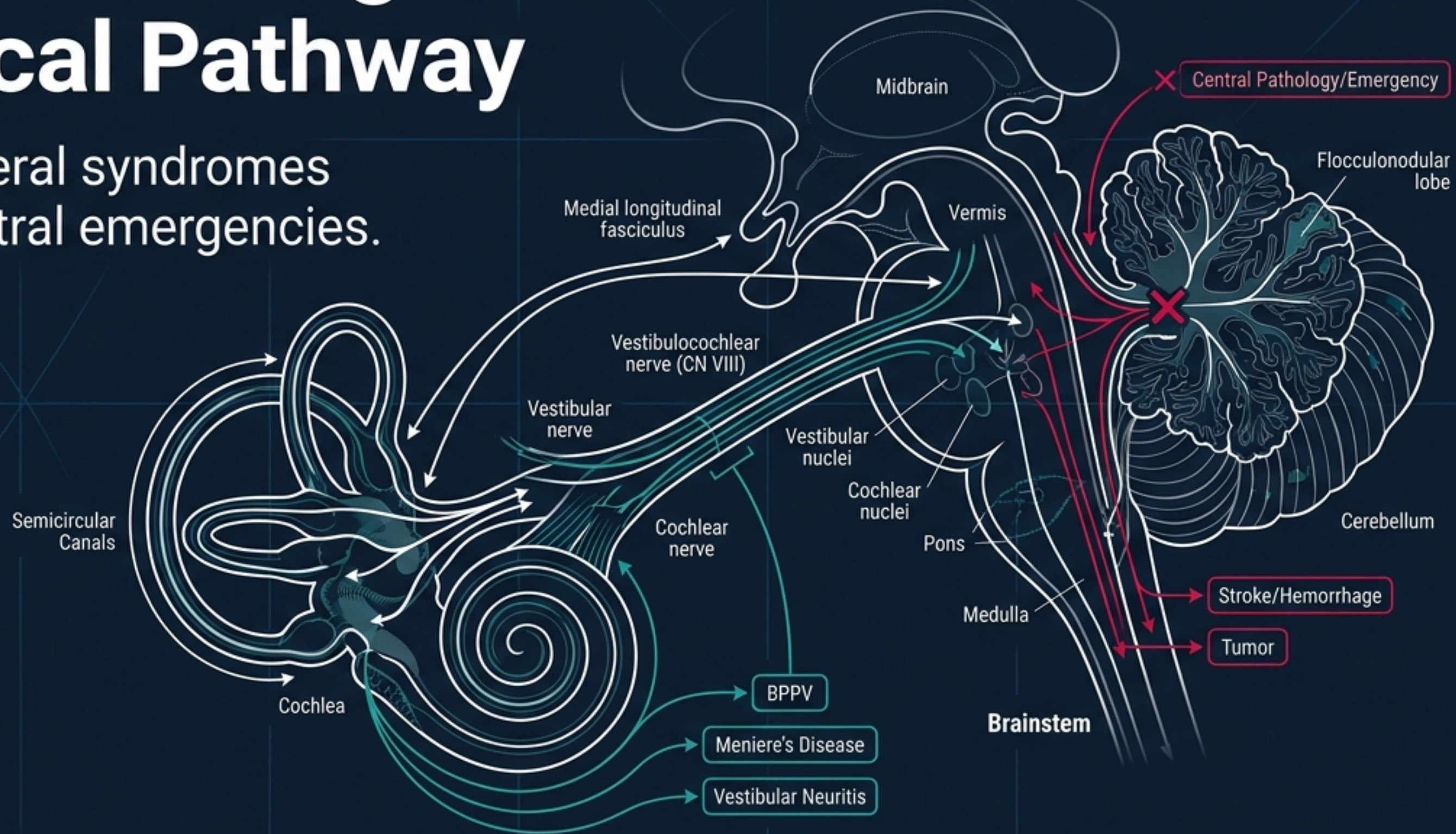


Dizziness & Vertigo: The Clinical Pathway

Navigating peripheral syndromes
and ruling out central emergencies.

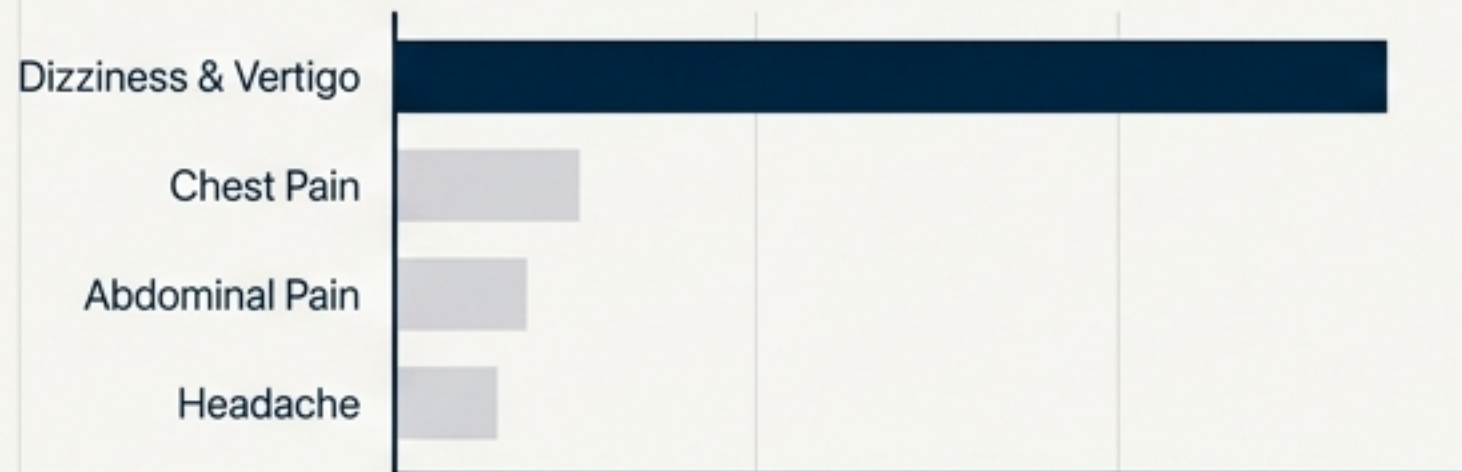


High Frequency Presentation

**3–5% of all
ED presentations**

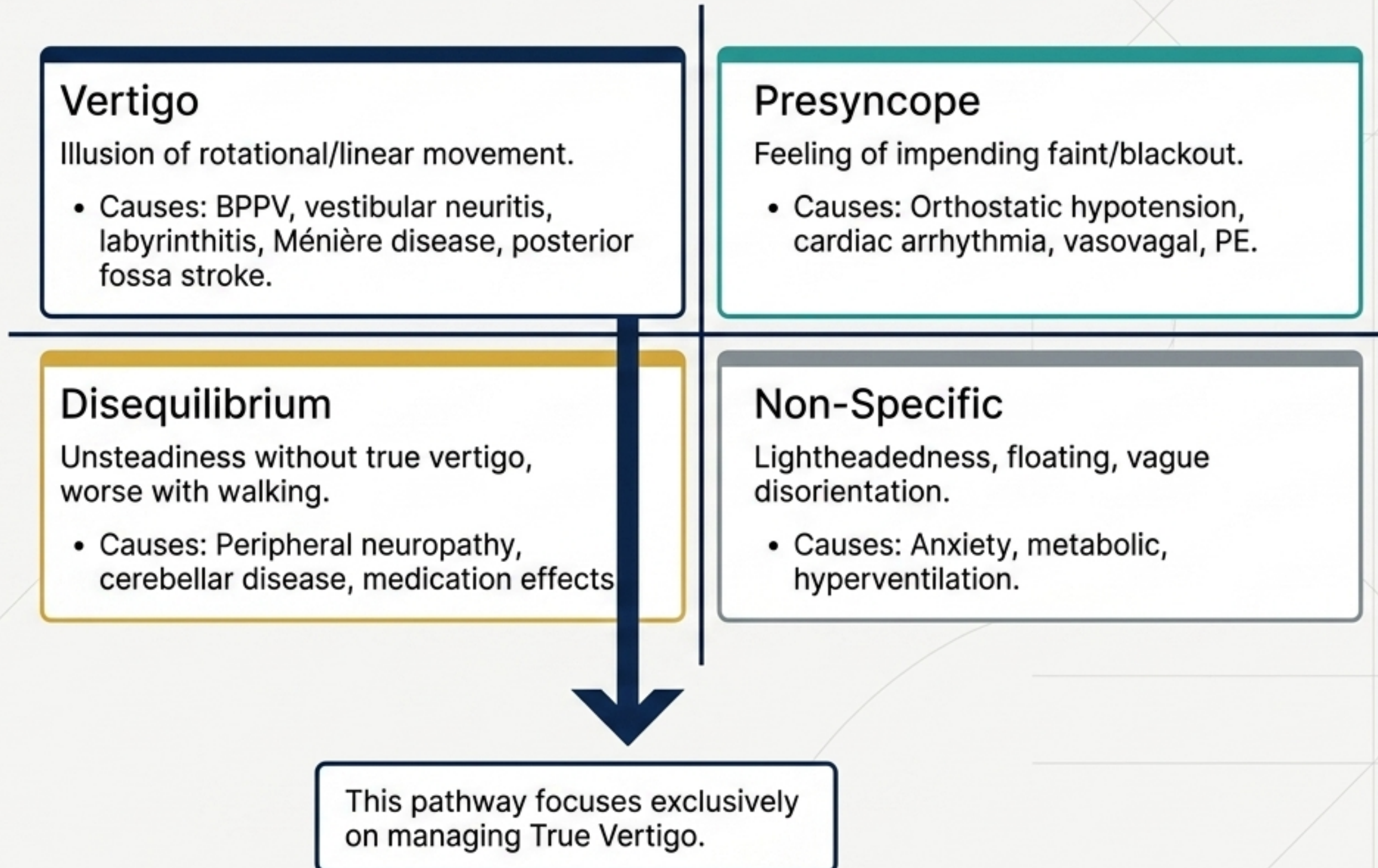
**1–2% of GP
consults annually**

Relative Volume of Dizziness Presentations

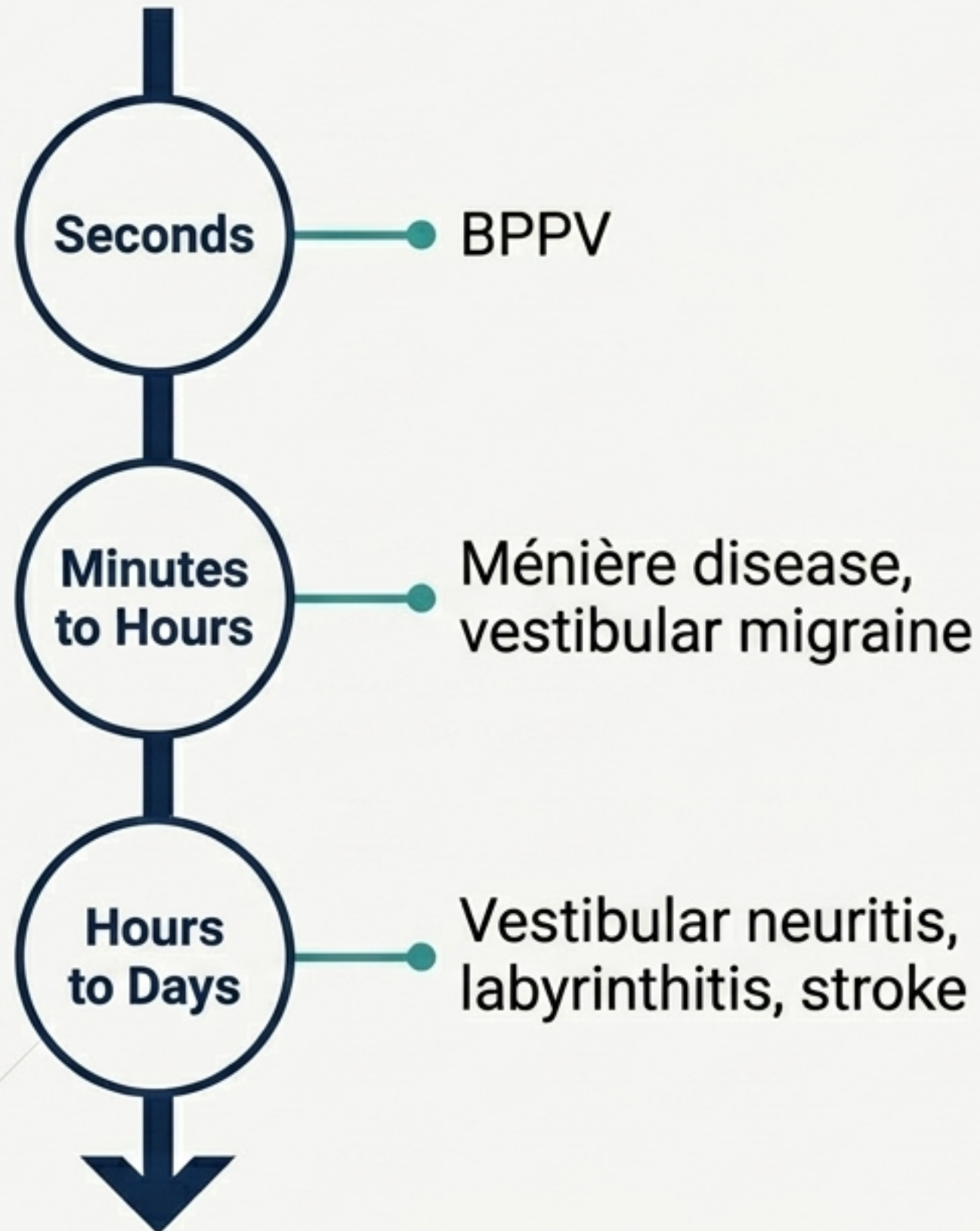


**The Critical Imperative:
Separating benign
self-limiting syndromes
from catastrophic
posterior fossa strokes.**

Dizziness Typology Matrix: The First Triage Point



The Triage Timeline

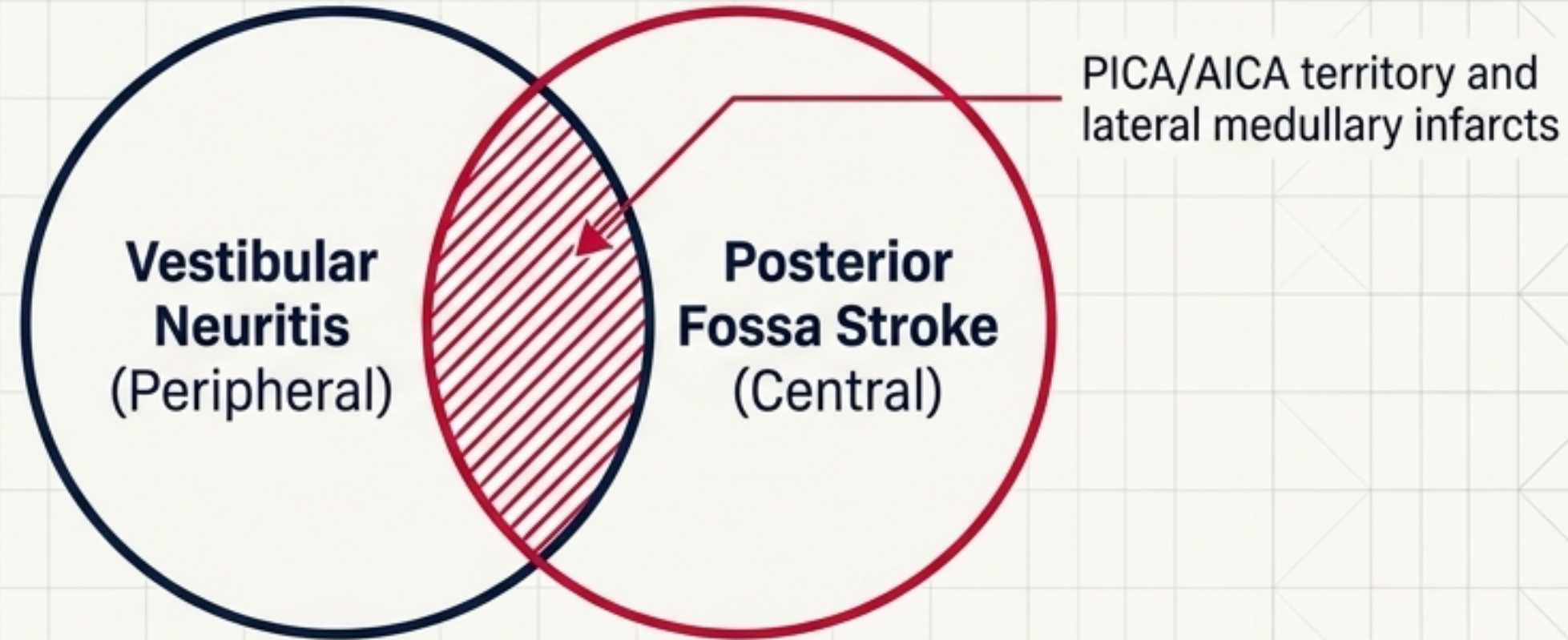


Absolute Red Flags

Mandate urgent neuroimaging (CT/CTA ± MRI)

- ⚠ • New 'thunderclap' headache (SAH)
- ⚠ • Focal neurological deficits (hemiparesis, ataxia, dysarthria)
- ⚠ • Diplopia or visual loss
- ⚠ • Crossed signs (ipsilateral face + contralateral body)
- ⚠ • Hearing loss + cardiovascular risk factors (AICA infarct)
- ⚠ • Anticoagulant use with new vertigo

The Stroke Mimic Concept



10–25% of isolated acute vertigo cases in the ED are posterior fossa strokes.

These strokes can present with isolated vertigo and nausea—clinically indistinguishable from vestibular neuritis in the early phase. Early CT sensitivity is incredibly low (16–42% in first 24h). **We need a better bedside tool.**

The HINTS Exam: Head Impulse, Nystagmus, Test of Skew



Golden Rule: Only valid if continuous, spontaneous nystagmus is present at the time of examination. Do not perform on asymptomatic patients.

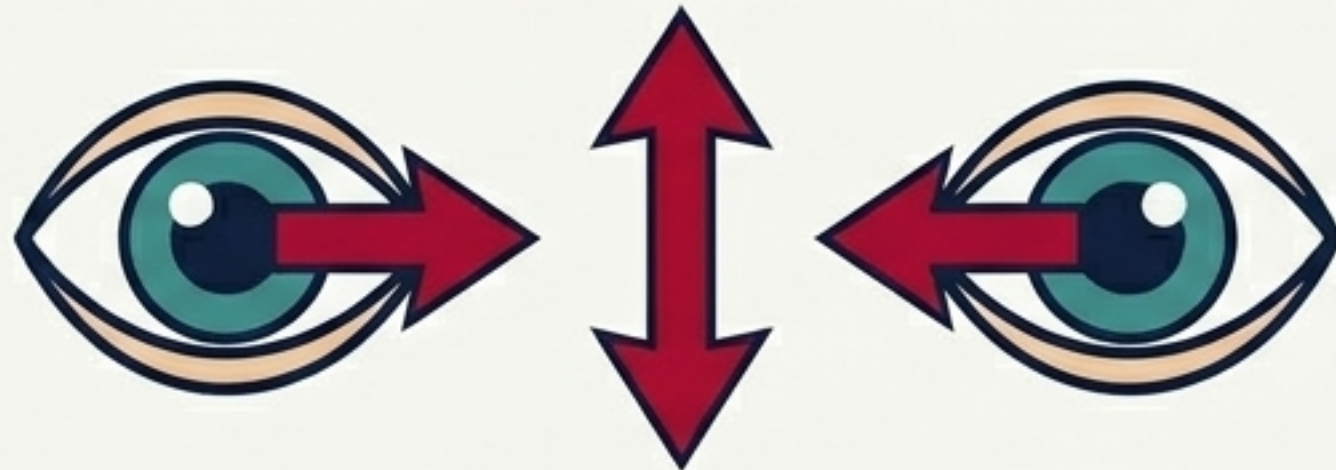
The Nystagmus Tracker

Peripheral Pattern



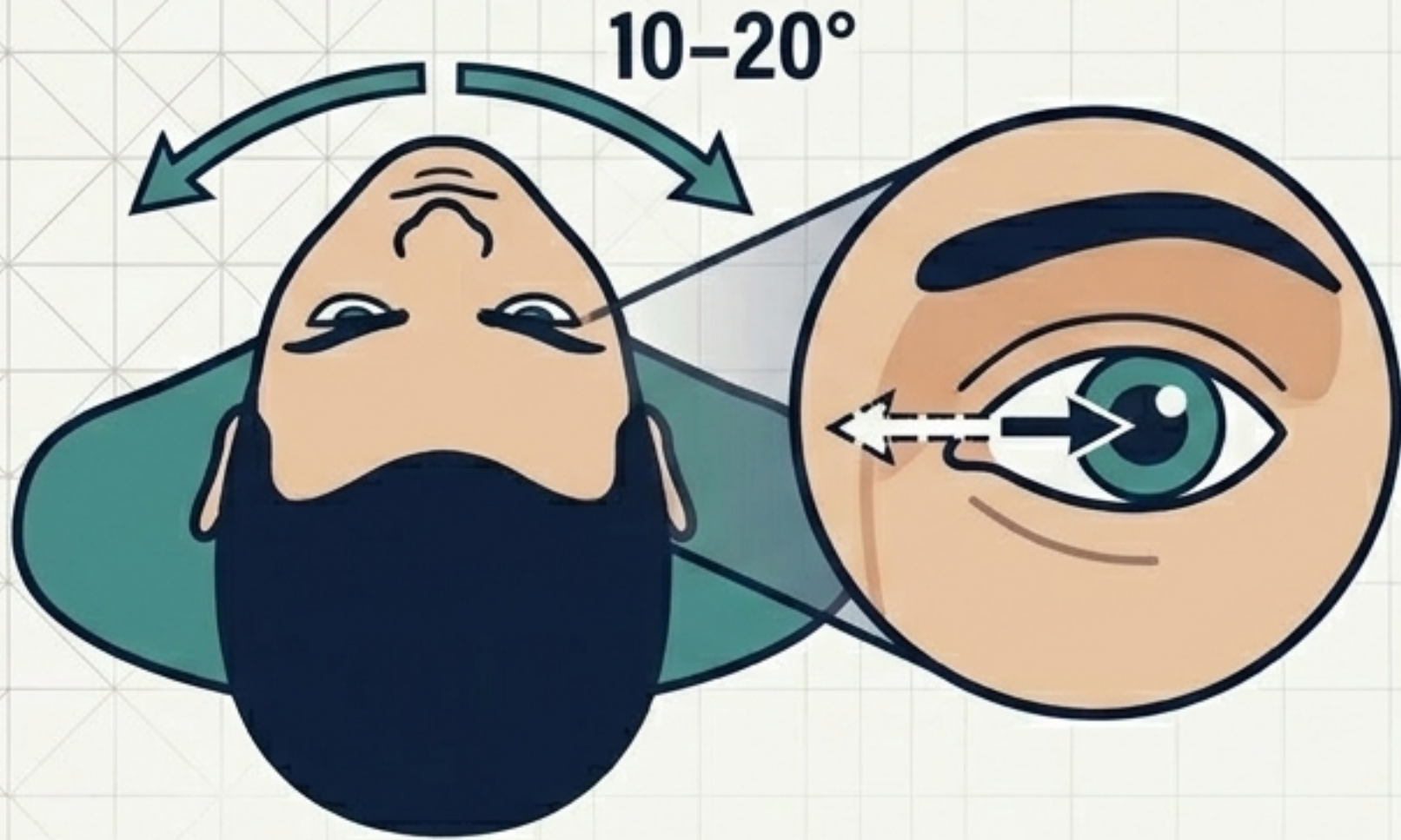
Unidirectional, horizontal-torsional, beating away from the lesion side. Suppresses with visual fixation.

Central Pattern



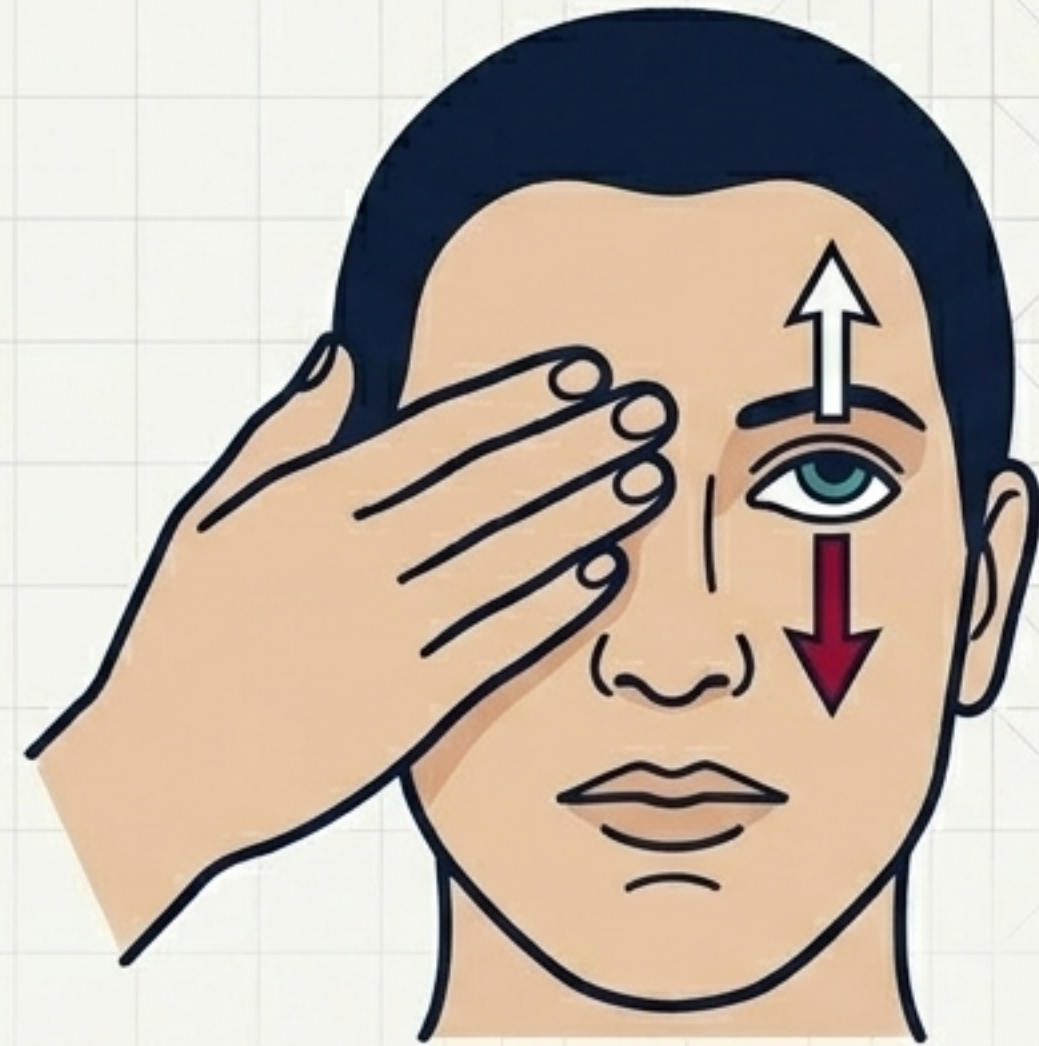
Direction-changing (beats right on right gaze, left on left gaze), or purely vertical/torsional.

Head Impulse Test









Patient fixates on examiner's nose.
Corrective saccade = vestibular hypofunction (**peripheral**).

Test of Skew



Look for vertical corrective refixation.
Skew deviation = brainstem/cerebellar pathology (**central**).

The HINTS Interpretation Matrix

Reassuring / Peripheral Pattern	Red Flag / Central Pattern (Stroke)
<ul style="list-style-type: none">• Head Impulse: POSITIVE (Corrective saccade present) 	<ul style="list-style-type: none">• Head Impulse: NEGATIVE (Normal / Bilateral intact) 
<ul style="list-style-type: none">• Nystagmus: Unidirectional 	<ul style="list-style-type: none">• Nystagmus: Direction-changing or vertical 
<ul style="list-style-type: none">• Test of Skew: Absent 	<ul style="list-style-type: none">• Test of Skew: Present 

Paradoxical Danger: A negative/normal Head Impulse Test in a patient with acute continuous vertigo is a stroke until proven otherwise.
Sensitivity is ~97% for stroke, surpassing early MRI.

Path 1: Benign Paroxysmal Positional Vertigo (BPPV)

The Canalith Map



Most common cause of vertigo (20–30% of cases).

Posterior canal accounts for ~85%.

Risk factors: Age > 50, head trauma (20% of young cases), Vitamin D deficiency.

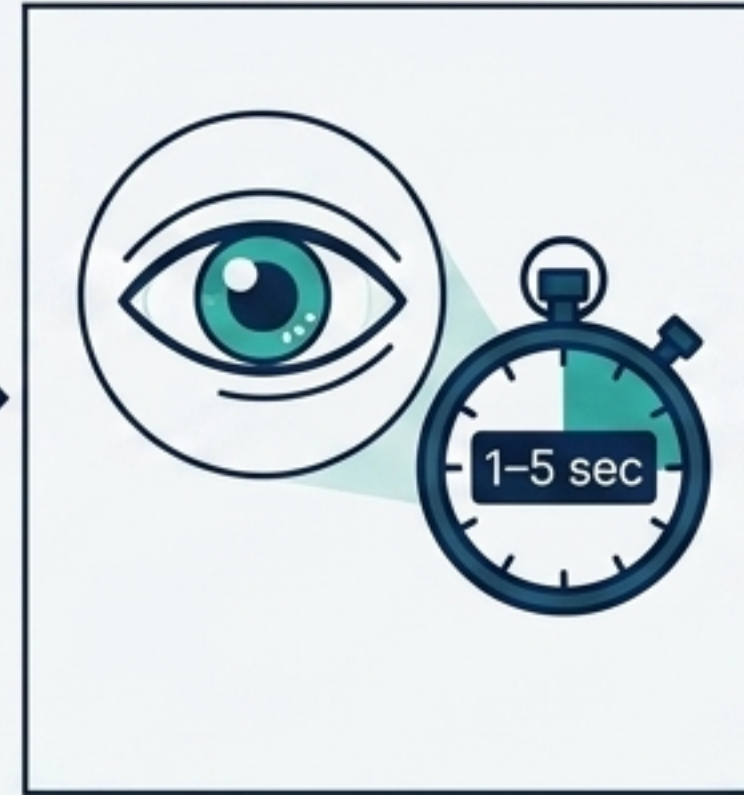
Diagnosing BPPV: The Dix-Hallpike Maneuver



Patient upright, head turned exactly 45° toward tested side.



Rapid recline, head hanging 20° below horizontal.



Observe: 1–5 sec latency, then torsional-upbeating nystagmus lasting < 60 seconds.

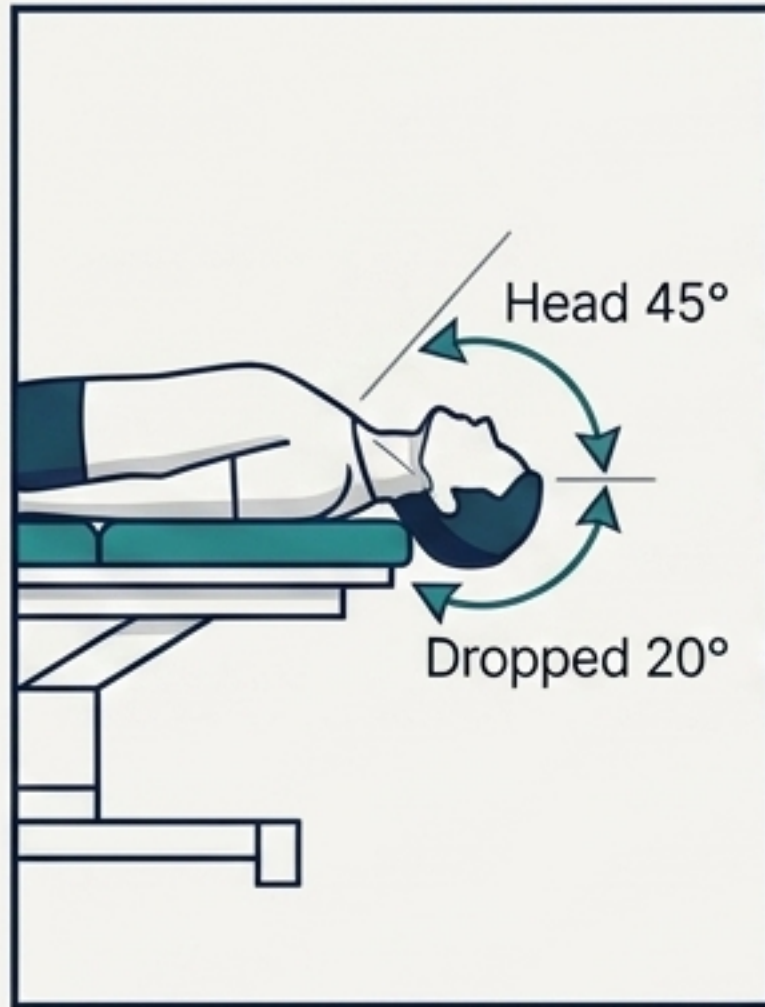


Return upright, observe for reverse nystagmus. Repeat opposite side.

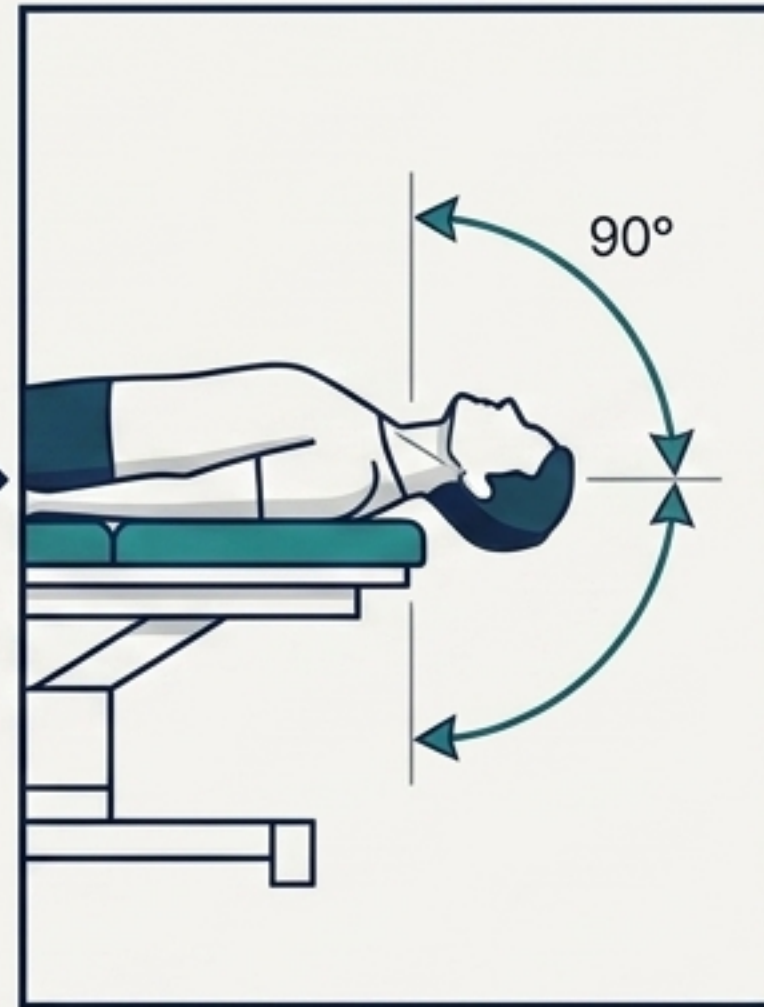
Note: If nystagmus is purely horizontal and direction-changing, suspect Lateral Canal BPPV (~10-15%).

Definitive Treatment: The Epley Maneuver

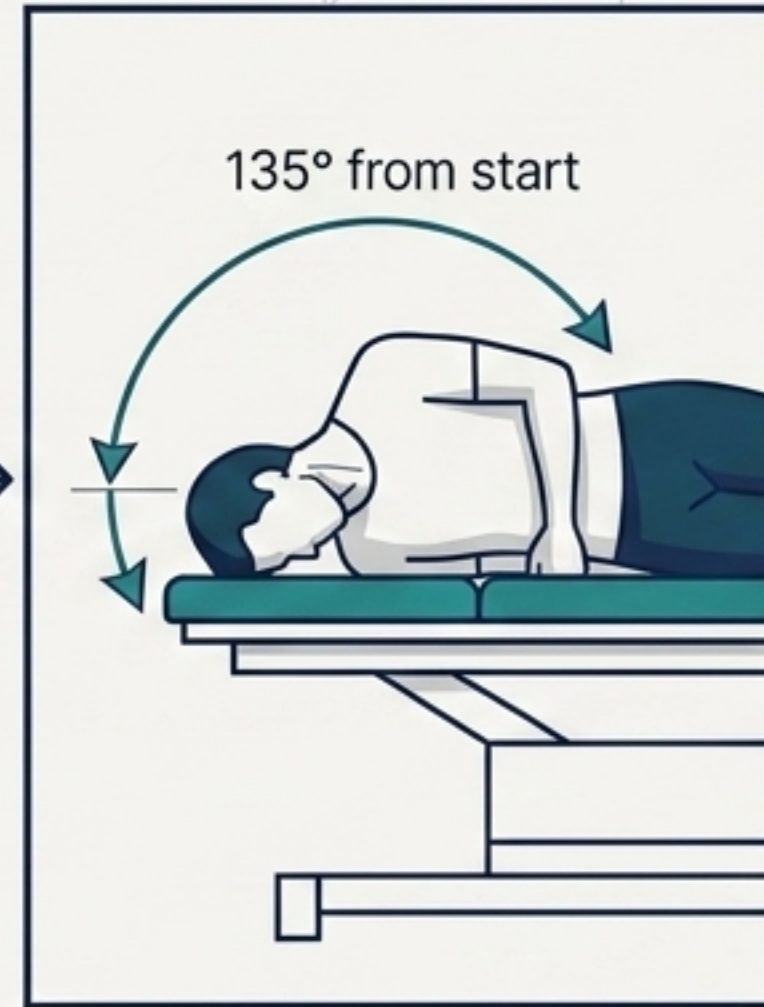
80% single-treatment success rate.
92% cumulative success after
three treatments.



Start in positive Dix-Hallpike position. Hold 30–60s.



Rotate head 90° to opposite side (maintaining extension). Hold 30–60s.



Roll body onto side, head rotates further to face floor. Hold 30–60s.



Sit upright.

Post-Maneuver Mechanics



Sleep elevated (2-3 pillows) for 48 hours.



Avoid head-hanging positions for 48 hours.



Recurrence stats:
30–50% within 5 years.
Teach home Epley/Brandt-Daroff exercises.

Pharmacotherapy Limits

Meclizine
(25-50 mg TDS)

Prochlorperazine
(5-10 mg TDS)

MAXIMUM 48-72 HOURS

Suppressants are strictly for short-term symptom relief. Prolonged use **delays central vestibular** compensation. Definitive treatment is mechanical, not chemical.

Path 2: Vestibular Neuritis & Labyrinthitis

The Differentiator Matrix

Neuritis

Vestibular nerve inflammation only.

Acute vertigo, nausea.

NO hearing loss.

Viral Labyrinthitis

Vestibular + Cochlea involved.
Vertigo present.

Concurrent sensorineural hearing loss / tinnitus.

The Bacterial Red Flag Flowchart

Condition:

Secondary to acute otitis media or meningitis.
Profound hearing loss, severe vertigo, fever.

Medical emergency. Urgent ENT referral + IV Ceftriaxone (2 g daily). Do not delay for imaging.

Pharmacotherapy Dashboard: Acute Symptomatic Relief

Ondansetron

4–8 mg PO/IV/ODT every 8h.

Benefit: Does not impair vestibular compensation.

Promethazine

12.5–25 mg PO/IM every 6–8h.

Caution: Sedation impairs compensation.

Prochlorperazine

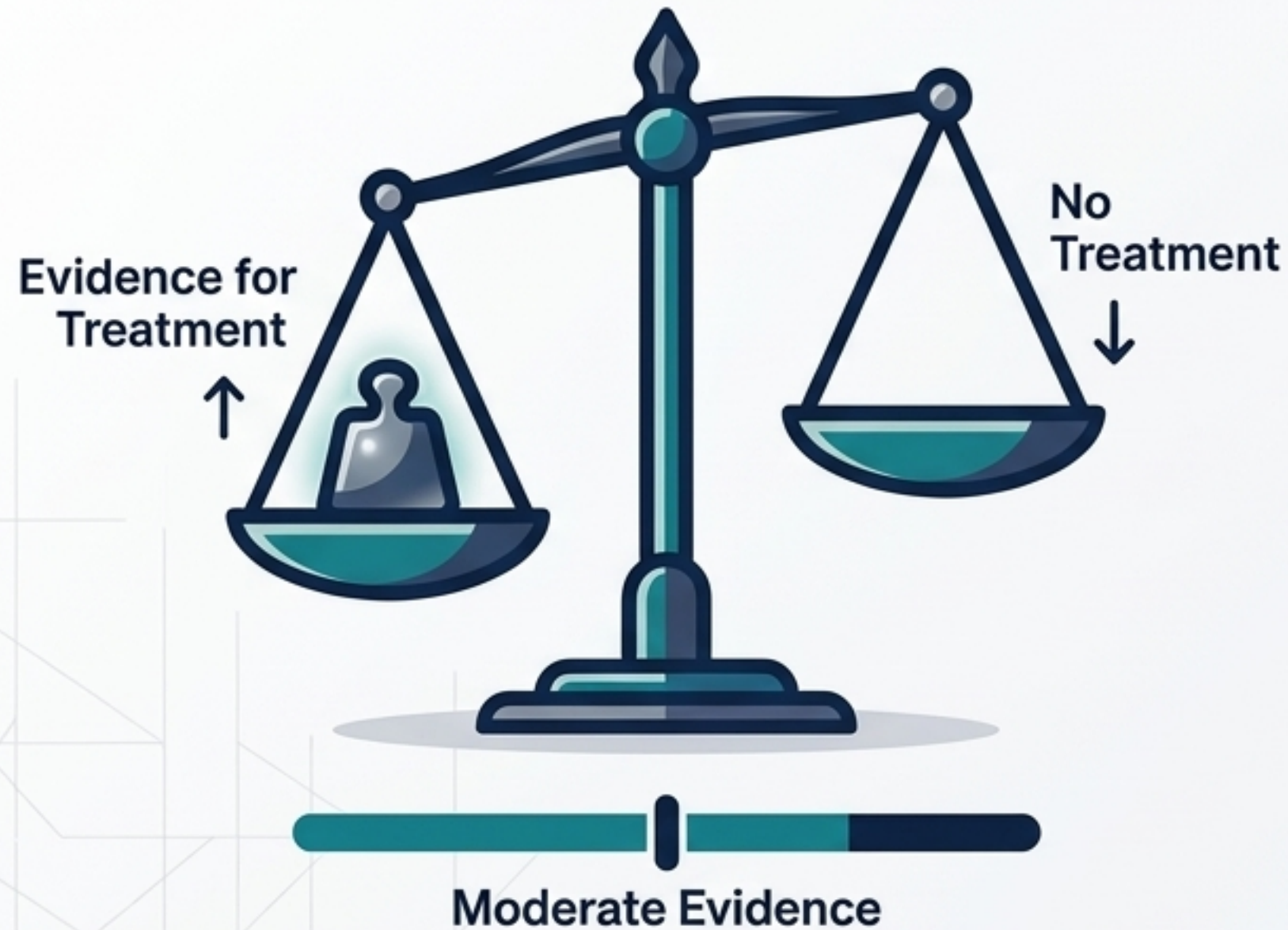
5–10 mg PO/IM TDS.

Caution: Risk of extrapyramidal symptoms; use extreme caution in elderly.

**MAXIMUM
48–72 HOURS**

Target 48–72 hours maximum duration for vestibular sedatives. Stop once severe acute vomiting subsides.

The Corticosteroid Question: Promoting Recovery



Dashboard List for Prescribing Parameters

Timing Imperative: Must initiate within first 72 hours of symptom onset.

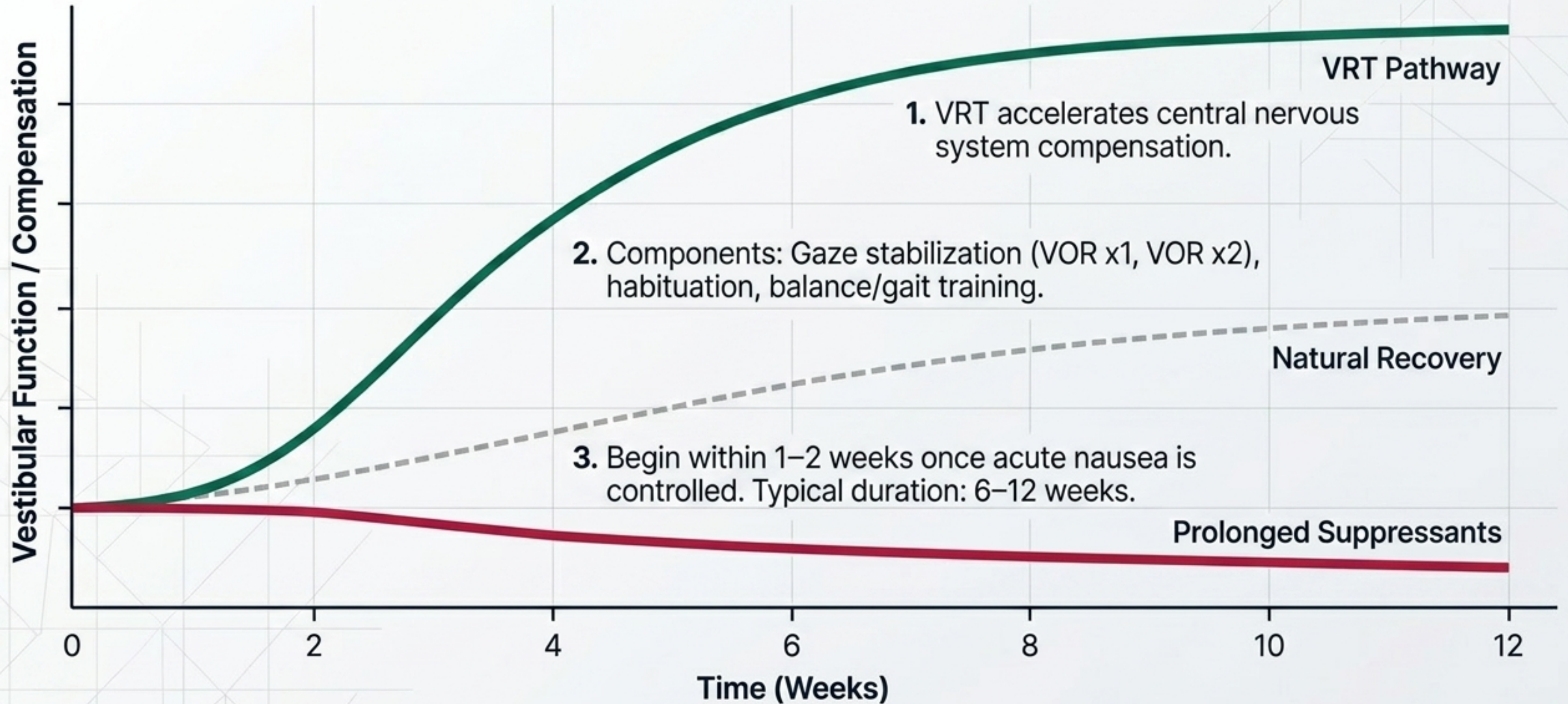
Primary Regimen: Prednisolone 1 mg/kg PO daily (max 60 mg) for 5 days, followed by a 2–3 week taper.

Severe Presentation: Methylprednisolone 100 mg IV daily for 3 days (if intractable vomiting prevents PO), then oral taper.

Rationale: Current international and Australian consensus favors offering steroids to improve long-term vestibular function, particularly in complete vestibular loss.

The Compensation Curve: Vestibular Rehabilitation Therapy (VRT)

The Activation/Suppression Graph



Special Populations & Clinical Nuances

Paediatrics

BPPV is rare; consider vestibular migraine or central causes. Adapt Dix-Hallpike with distraction.

Meclizine not recommended under 2 yrs.

Meclizine not recommended under 2 yrs.

Pregnancy

BPPV common, safe to treat via Epley.

Meclizine/Prochlorperazine are Category A.

Meclizine/Prochlorperazine are Category A.

Ondansetron Category B1.

Avoid MRI with gadolinium.

Elderly

Extremely high fall risk. BPPV often misattributed to 'old age'.

Prochlorperazine contraindicated/high risk (extrapyramidal side effects/falls).

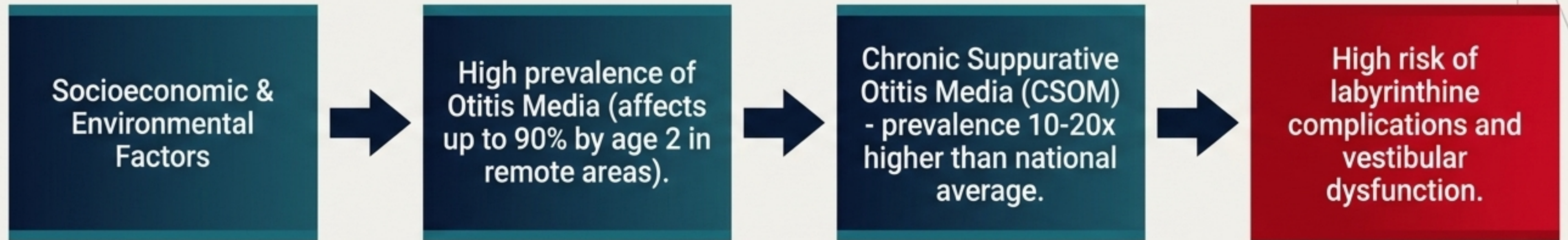
Use lowest effective dose of sedatives.

Immunocompromised

Broaden differential (CMV, VZV, Syphilis).

Ramsay Hunt Syndrome: vertigo + hearing loss + ear vesicles → Aciclovir 800 mg 5x daily (7-10 days) + steroids.

Aboriginal & Torres Strait Islander Health: The CSOM Pathway

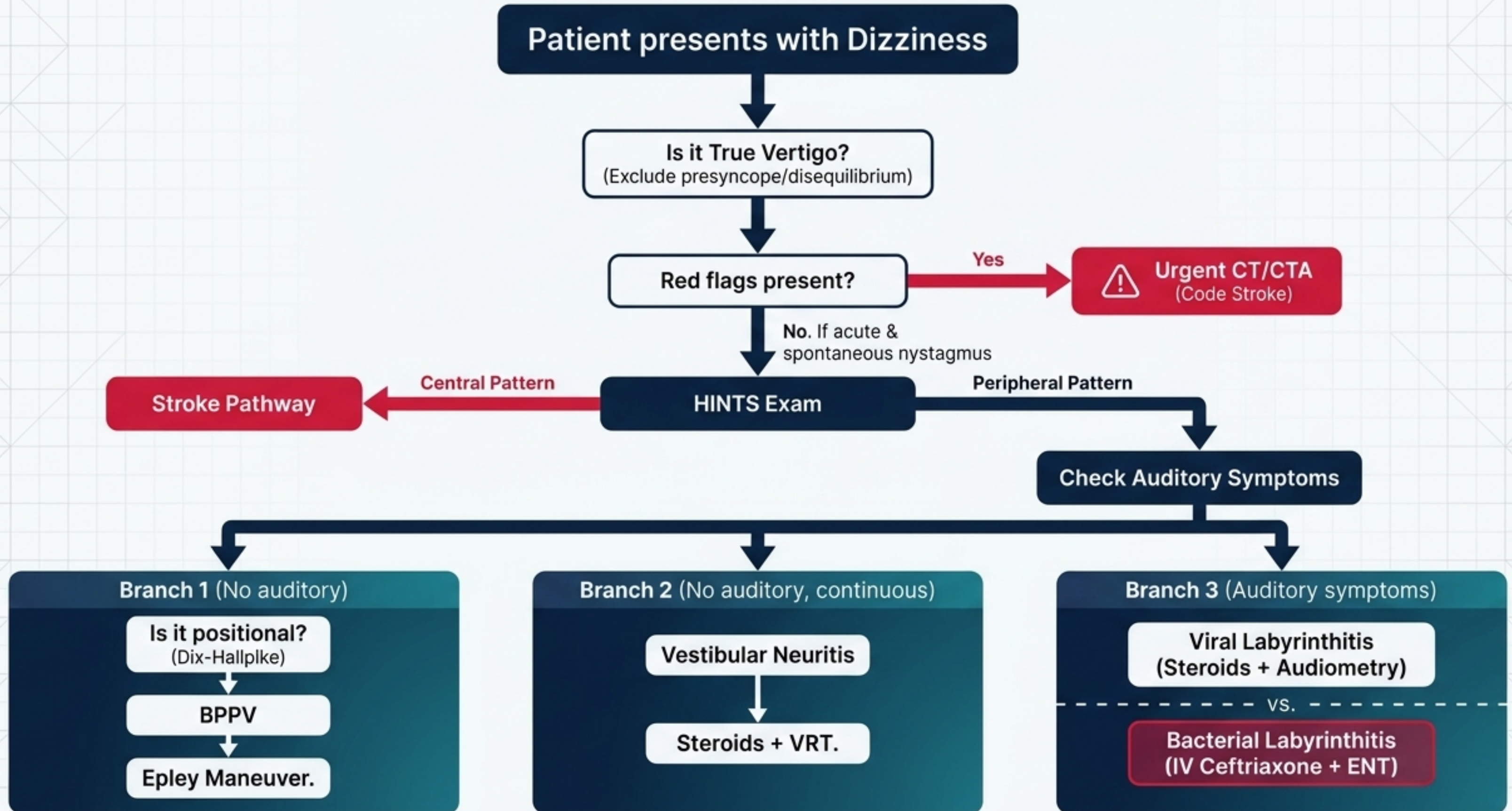


Always assess for CSOM in Aboriginal and Torres Strait Islander patients presenting with vertigo and hearing loss. Bacterial labyrinthitis secondary to CSOM is an emergency.

Closing the Gap in Remote Vestibular Care Solution Matrix

Barrier	Clinical Strategy
Lack of specialist imaging/assessment.	Telehealth pathways; RFDS for urgent central transfers. Note: <u>1.4x higher stroke incidence</u> in this population.
Medication access.	Utilize Remote Area Aboriginal Health Services (RAAHS) and s100 provisions.
Communication/Cultural Safety.	Utilize Aboriginal Health Workers as cultural brokers; avoid dismissive approaches to dizziness.
Lack of VRT Physios.	Community-based exercise programs and culturally adapted home exercises.

Quick Reference Vestibular Algorithm



Key Clinical Takeaways

- 1** Not all dizziness is vertigo. Characterizing the symptom is the crucial first step to avoid misdiagnosis.
- 2** A **normal head impulse** is a **red flag**. In acute continuous vertigo, a **negative HIT indicates stroke** until proven otherwise.
- 3** **Suppressants delay healing**. Limit vestibular **sedatives** to 48–72 hours; definitive management requires mechanical repositioning or vestibular rehabilitation.