VESTIBULAR NEURITIS CHEAT SHEET

Vestibular Neuritis (AUVP) — Cheat Sheet for Vestibular Physicians

Anchor on the HINTS exam for bedside stroke exclusion. Corticosteroids within 72h improve caloric recovery. VRT from day 3 — earlier start = better outcome.

► Why Vestibular Neuritis matters

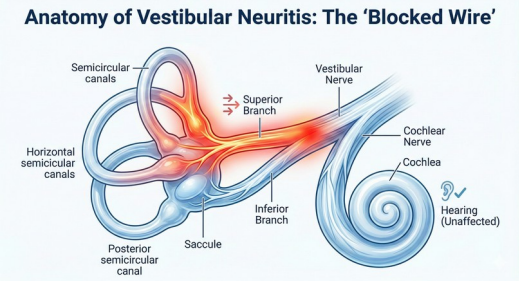
Incidence 3.5–15.5/100,000/year; peak age 40–60. Second most common peripheral vestibular disorder after BPPV. HSV-1 reactivation in Scarpa's ganglion underlies most cases (~2/3 at autopsy, Arbusow). Caloric recovery 83% at 12 months with corticosteroids vs 58% without (Strupp 2004). PPPD develops in 15–25% — early VRT and mobilisation are protective.

► Indications — when this pathway fits

- Acute, sustained (>24 h) severe vertigo WITHOUT hearing loss (hearing loss = labyrinthitis).
- Spontaneous horizontal-torsional nystagmus, direction-fixed, beating toward the healthy side.
- Positive head impulse test (corrective saccade) toward the affected side.
- No central features on HINTS exam — distinguish from posterior circulation stroke.

► Mechanism — viral inflammation of the vestibular nerve

Layer	Mechanism	Clinical relevance
Scarpa's ganglion	HSV-1 reactivation → viral neuritis; ~2/3 at autopsy (Arbusow)	Explains why antivirals add no benefit over steroids alone (Strupp 2004).
Canal paresis	Afferent asymmetry → tonic velocity imbalance toward healthy side	Drives spontaneous nystagmus + past-pointing (Ewald's second law).
Otolith involvement	Superior: HC+AC+saccule; Inferior: saccule+PC; Pan: all	Determines subtype by vHIT + cVEMP/oVEMP pattern.



► AUVP subtypes — vHIT + VEMP pattern

Subtype (prevalence)	vHIT deficit	VEMP pattern
Superior VN (85–90%)	HC gain ↓ + AC gain ↓	oVEMP absent; cVEMP intact
Inferior VN (5–10%)	PC gain ↓ only	cVEMP absent; oVEMP intact
Pan-VN (5–10%)	All 3 canals ↓	Both oVEMP + cVEMP absent

► Diagnostic criteria — Bárány Society AUVP 2019

Criterion	Required features
Definite AUVP	Acute sustained vertigo/dizziness >24 h + unilateral canal hypofunction (caloric or vHIT) + no acute central lesion on MRI DWI.
Probable AUVP	Acute sustained vertigo >24 h + positive HIT toward one side + no central features — MRI pending or not yet performed.

Pearl — *Superior VN (85–90%) is the default. If all three canals are normal on vHIT with spontaneous nystagmus, reconsider — inferior VN preserves HC and AC function.*

► HINTS exam — bedside stroke exclusion (Kattah 2009)

Test	Peripheral VN (benign)	Central / Stroke — HIGH RISK
Head Impulse Test (HIT)	Positive — corrective saccade back toward examiner after head thrust toward affected side	NORMAL — no corrective saccade. Posterior fossa lesion until proven otherwise.
Nystagmus direction	Direction-FIXED horizontal-torsional; obeys Alexander's law	Direction-CHANGING with gaze; or purely vertical/torsional nystagmus.
Test of Skew (cover-uncover)	No vertical skew deviation	Vertical skew deviation present — brainstem involvement.

Pearl — *HINTS sensitivity >100% (catches strokes DWI misses in first 24–48 h) and 96% specificity (Kattah 2009). A single abnormal HINTS element mandates urgent MRI. HINTS is only valid in Acute Vestibular Syndrome (continuous dizziness) — not for episodic presentations.*

► Differential diagnosis — high-yield mimics

Diagnosis	Key distinguishing features
Posterior circulation stroke	Normal HIT, direction-changing nystagmus, skew deviation, new neurological symptoms; AICA infarct can add hearing loss.
Labyrinthitis	Identical VN picture PLUS acute unilateral sensorineural hearing loss.
Vestibular migraine	Migraine history, photophobia/phonophobia, episodic attacks; HIT usually normal; no canal paresis.
BPPV	Positional nystagmus ONLY; no spontaneous nystagmus; positive Dix-Hallpike; normal vHIT.
Ramsay Hunt syndrome	Ipsilateral facial palsy, ear vesicles, severe otalgia, hearing loss; herpes zoster aetiology.

► Red flags — Posterior stroke mimics VN. A SINGLE abnormal HINTS element mandates urgent MRI.

- **Normal HIT + any other central feature = posterior stroke until proven otherwise.**
- **AICA infarct: VN + acute unilateral hearing loss — urgent MRI mandatory.**
- **Inability to stand at all even with support after 3+ days — central cause or bilateral loss.**

► Management — evidence-based stepwise approach

Phase	Intervention	Principles
Acute (0–72 h)	Vestibular suppressants (prochlorperazine/diazepam) PRN; antiemetics	SHORT-TERM ONLY (<72 h). Prolonged use blocks central compensation.
Acute (0–72 h)	Methylprednisolone 100 mg/day tapering over 22 days (Strupp 2004)	Improves caloric recovery at 12 months (83% vs 58%). Start within 72 h.
Antivirals	NOT recommended (Strupp 2004 — acyclovir + steroid = steroid alone)	No RCT benefit over steroids alone.
Day 3+	VRT: gaze stabilisation + habituation + balance retraining (Cochrane 2023)	30–50% faster recovery. Earlier start = better outcome.
If secondary BPPV	Epley / Semont manoeuvre for affected canal	Occurs in 10–30% during recovery. Suspect if positional nystagmus appears.

► Prognosis and counselling

- Caloric recovery: ~83% at 12 months with steroids vs ~58% without; functional recovery precedes caloric.
- PPPD risk: 15–25% — screen at 3 months; early CBT/VRT if anxiety or avoidance develops.
- Recurrence: <2% over 12 years (Huppert 2006); reassure patients this is not a recurring disorder.
- Driving: restricted while active vertigo present; return when clinically stable.
- Exercise: walking from day 2–3; avoid prolonged bed rest — it delays compensation.

Key references — Strupp M et al. NEJM 2004;351:354–61 · Kattah JC et al. Stroke 2009;40:3504–10 · Bárány Society AUVP criteria 2019 · Hillier SL & McDonnell M. Cochrane 2023 · Huppert D et al. J Neurol 2006;253:901–06