HIT
CHEAT SHEET

Head Impulse Test

Bedside VOR Assessment in Acute Dizziness

▸ What the HIT tells you

In Acute Vestibular Syndrome: ABNORMAL HIT (catch-up saccade) = reassuring peripheral. NORMAL HIT (no saccade) = HIGH RISK for posterior fossa stroke — escalate immediately.

Physiology in Brief

Concept	Detail
Peripheral lesion	Damaged labyrinth fails to signal rapid ipsilateral head turn — eyes lag, then make a catch-up saccade back to target
Central lesion	Brainstem/cerebellum still drives VOR via intact peripheral input — eyes stay on target; no catch-up saccade

Bedside Technique

Step	Action	Key Point
1	Patient upright; fix gaze on your nose	Remove glasses; good lighting
2	Grasp head with both hands; tilt chin 30° down	Aligns horizontal canal in test plane — essential
3	Deliver small (10–20°), rapid, unpredictable impulse to one side	HIGH velocity, small amplitude — not a slow turn
4	Watch immediately for catch-up saccade back to nose	Both overt and covert saccades = positive
5	Test both sides; vary timing; minimum 5 impulses per side	Vary timing to prevent anticipatory saccades

Result Interpretation

Result	Finding	Interpretation	Action
ABNORMAL	Catch-up saccade seen	Peripheral VOR deficit — ipsilateral labyrinth/nerve	Reassuring in AVS — complete full HINTS triad
NORMAL	No saccade — eyes stay on target	VOR intact — central pathology not excluded	Stroke protocol; full HINTS; MRI DWI
Bilateral abnormal	Saccades both sides	Bilateral vestibulopathy — ototoxicity, autoimmune	Vestibular specialist; falls risk management

Common Errors

Error	Problem	Fix
Too slow a head turn	Low velocity misses deficit — false normal	High velocity, small amplitude
Too large amplitude	Patient anticipates and uses smooth pursuit	Keep impulse 10–20° only
Chin not tilted 30°	Wrong canal plane — unreliable result	Always tilt before each impulse
HIT used alone	Cannot exclude central with HIT only	Always complete full HINTS: H + N + TS

HIT in the HINTS Triad

▸ Never use HIT in isolation

H (Head Impulse): Abnormal = peripheral. Normal = central risk.
N (Nystagmus): Unidirectional = peripheral. Direction-changing or purely vertical = central.
TS (Test of Skew): No skew = peripheral. Skew deviation present = central.
CENTRAL = ANY ONE central sign. PERIPHERAL = ALL THREE peripheral.

Head Impulse Test — *continued*

Video HIT (vHIT) — When Available

Feature	vHIT Advantage
Covert saccades	High-speed camera detects saccades occurring DURING the impulse — invisible to naked eye on bedside exam
Quantitative gain	Measures VOR gain (normal 0.8–1.0); identifies subclinical asymmetric deficit before overt saccade appears
Canal specificity	Can assess all 6 semicircular canals individually
Documentation	Objective printout; useful for medicolegal purposes and specialist referrals

Sensitivity Data

Metric	HINTS (Full Triad)	HIT Alone	Early MRI DWI (under 24 h)
Sensitivity — posterior stroke in AVS	96–100%	85–90%	72–80%
Specificity	95–98%	85–92%	95–99%
Take-home	Always use full HINTS	HIT alone insufficient	Negative MRI does not exclude stroke

Practical Scenarios

Scenario	HIT	Action
AVS — vertigo + nystagmus at rest	Abnormal	Complete HINTS — if all peripheral, vestibular neuritis pathway; discharge
AVS — as above	Normal	Central risk — HINTS; stroke protocol; MRI DWI; admit
Episodic vertigo — no current nystagmus	Often normal between episodes	HIT unreliable for EVS; use history + BPPV testing
Elderly, falls + oscillopsia	Bilateral abnormal	Bilateral vestibulopathy; vestibular rehab; falls prevention

Documentation

Element	Record
Left HIT	Abnormal (saccade present) or Normal (no saccade)
Right HIT	Abnormal (saccade present) or Normal (no saccade)
Technique	Chin angle, amplitude, impulses per side
Combined HINTS	Peripheral pattern or Central pattern — list each component

Vestibular Neuritis — After Peripheral HINTS

Intervention	Recommendation
Antiemetics	Prochlorperazine 12.5 mg IM or 5 mg oral; ondansetron 4 mg if sedation concern
Steroids	Prednisolone 50 mg/day x 5 days — moderate evidence for improved recovery
Vestibular suppressants	Short-term only (1–3 days) — prolonged use delays central compensation
Vestibular rehabilitation	Early physiotherapy referral — best evidence for functional recovery