

**VP 05  
CHEAT  
SHEET**

**Bilateral Vestibulopathy — Cheat Sheet for Physiotherapists**

*Substitution-led rehab, oscillopsia management, falls prevention.*

► **Why BVH rehab matters**

*Adaptation training fails when both labyrinths are deficient. Substitution-led rehab plus environmental and behavioural change drives functional recovery; falls risk is 30–50 percent annually if untreated.*

**Indications — when this approach fits**

► **When to use this pathway**

- Bárány 2017 — definite BV requires any one of: vHIT gain less than 0.6 bilaterally, caloric sum bithermal SPV less than 6°/s per side, or rotational chair gain less than 0.1.
- Ototoxic exposure (gentamicin, cisplatin); presbyvestibulopathy in older adults; bilateral Ménière, AIED.
- Patients reporting oscillopsia with head movement and imbalance worse in darkness or on uneven ground.

**Why substitution beats adaptation in BVH**

Mechanism	Why it matters	Lead exercise / strategy
Adaptation	Fails — no peripheral signal	Limit to severe-incomplete BVH only
Cervico-ocular reflex	Cervical proprioception fills VOR gap	Slow head turns 0.25–0.5 Hz with fixation
Saccadic substitution	Pre-emptive eye saccades before head	Fixate-saccade-then-rotate-head sequence
Sensory reweighting	Visual + somatosensory upweighted	Foam stance, tandem, dark training, light touch

► **Pearl: BVH rehab is substitution-led**

*Time spent on classic VOR x1 / x2 in pure bilateral loss is wasted. Re-allocate the same minutes to cervico-ocular reflex training, saccadic substitution and proprioceptive-led balance work.*

**Assessment battery**

Domain	Test	Why
Canal function	vHIT bilaterally, caloric	Confirms diagnosis (vHIT gain less than 0.6 / caloric sum less than 6°/s)
Otolith function	cVEMP / oVEMP	Reduced or absent in advanced BVH
Functional VOR	Dynamic Visual Acuity	Greater than 3-line drop = functional gaze deficit
Static balance	Romberg eyes-closed, foam	Dark-induced sway = key BVH sign
Dynamic balance	FGA + tandem	FGA less than 22/30 = falls risk
Self-report	DHI + ABC	Baseline for re-test at 6 weeks

**Prescription / treatment cheat list**

Category	Frequency	Duration	Progress when...
Cervico-ocular	3–5x daily	1 min/axis	Symptom-stable; add visual context
Saccadic substitution	2x daily	10 reps each side	Saccade lands cleanly without overshoot
Proprioceptive balance	Daily	10–15 min	Reduce BoS; close eyes; add foam
Dark / dim training	Daily	5–10 min	Add stepping, head turns, dual task
Behavioural cueing	Throughout day	—	Patient self-reports applying cues

► **Pearl: a cane outdoors is part of the prescription**

*In established BVH, a cane in darkness or outdoors is not optional — it is part of standard care. Outdoor falls in BVH carry a high fracture rate; clinic gait alone under-rates the real-world risk.*

► **Red flags — escalate**

*Sudden hearing change, fluctuating tinnitus, new neurology, progressive bilateral loss without clear cause → urgent ENT or neuro-otology referral and imaging as indicated.*

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**Outcome measures — re-test every 4–6 weeks**

Domain	Tool	MCID / threshold
Self-report	DHI	Greater than 18-pt drop = clinically meaningful
Confidence	ABC scale	Less than 67% = falls risk; up 10 pts
Dynamic gait	FGA	Less than 22/30 falls risk; up 4 pts
Functional balance	mini-BESTest	Up 4 pts clinically meaningful
Functional VOR	DVA	Improvement of 1–2 lines

▶ **Compliance — what helps adherence**

*Open with the substitution rationale (not adaptation); written + video home program; symptom diary; engineer one functional win at session 1 (e.g., dark walk to bathroom safely). Telehealth check-in at week 2 doubles 6-week adherence.*

▶ **When to refer onward**

- ▶ Plateau by 8–12 weeks despite combined programme → vestibular physician for re-testing and review.
- ▶ Suspected progressive aetiology (bilateral Ménière, AIED) → ENT and immunology co-management.
- ▶ Severe vestibular anxiety or housebound function → clinical psychology for CBT.
- ▶ New or worsening hearing loss with vestibular decline → urgent ENT and neuro-otology.

▶ **Twelve-second tips**

*Confirm diagnosis on any one Bárány-criterion modality (vHIT, caloric, or rotational chair). Substitution-led, not adaptation-led. Dark = the diagnostic and the training environment. Cane and home safety bundle by week 2. Maintenance proprioceptive work indefinitely.*

▶ **Common pitfalls — and how to avoid them**

- ▶ Prescribing VOR x1 / x2 to pure BVH — wasted time; switch to cervico-ocular and saccadic substitution.
- ▶ Skipping the home safety assessment — most falls happen in the bathroom and on stairs at night.
- ▶ Stopping the maintenance programme at discharge — proprioception decays without ongoing dose.
- ▶ Missing comorbid BPPV — Dix-Hallpike and supine roll on every BVH patient at presentation.
- ▶ Withholding mobility aids because the patient refuses — re-frame the cane as part of the programme.

▶ **Special populations**

- ▶ Older adults — pair BVH rehab with strength, vision check, and orthostatic screen.
- ▶ Ototoxic exposure — document baseline before next cycle of gentamicin or cisplatin.
- ▶ Comorbid peripheral neuropathy — proprioceptive substitution is harder; add visual and cane.
- ▶ Active bilateral Ménière — co-manage with ENT for medical control alongside rehab.

▶ **Patient communication scripts**

*"Both balance organs are quiet — your brain learns to use vision and feet instead." | "Bright light is your friend; the dark is where we train and where we use the cane." | "Maintenance exercise three times a week, indefinitely — like brushing your teeth for balance."*

▶ **References / further reading**

- ▶ Strupp M et al. Bilateral vestibulopathy criteria. *J Vestib Res* 2017;27(4):177–189.
- ▶ Hall CD et al. VRT clinical practice guideline. *J Neurol Phys Ther* 2022;46(2):118–177.
- ▶ Lucieer F et al. BVH etiologies and clinical subtypes. *Front Neurol* 2016;7:26.
- ▶ Herdman SJ et al. DVA recovery in BVH. *Arch Otolaryngol HNS* 2007;133(4):383–389.
- ▶ Sun DQ et al. BVH quality of life and economic implications. *JAMA Otolaryngol HNS* 2014;140(6):527–534.