BPPV CHEAT SHEET — Benign Paroxysmal Positional Vertigo — Cheat Sheet for Vestibular Physicians

Diagnose on canal-specific nystagmus. Match the manoeuvre to the canal. Image only when the pattern does not fit.

► Why BPPV matters

The commonest peripheral vestibular disorder and the most reversible cause of vertigo in adult practice. Lifetime prevalence ~2.4%, annual incidence ~0.6%, F:M ≈ 2:1, peak 50–70 y. 20–30% of dizziness-clinic referrals and roughly one-third of all peripheral vertigo. Single-encounter cure rates exceed 90% with correct canal-specific repositioning — the cleanest outcome-cost ratio in vestibular medicine.

Indications — when this pathway fits

► When to apply this work-up

► Pure positional vertigo (lying down, rolling, looking up, bending forward); attacks seconds not minutes; no spontaneous attacks, auditory or neurological symptoms.

► Includes recurrent, post-traumatic, post-Epley conversion, and secondary BPPV (Ménière's, vestibular neuritis, post-otologic surgery).

► Distinguish from central positional vertigo, vestibular migraine, SCD, perilymph fistula, orthostatic dizziness, and PPPD overlay.

Mechanism — why BPPV happens

Subtype	Mechanism	Time profile
PC canalithiasis (80–90%)	Free-floating otoconia in posterior canal	Lat 1–5 s; <60 s; fatigues
HC canalithiasis (geotropic, 5–15%)	Otoconia in long arm of horizontal canal	Brief/no lat; <60 s; fatigues
HC cupulolithiasis (apogeotropic)	Otoconia adherent to horizontal canal cupula	No lat; persists >60 s; no fatigue
AC canalithiasis (rare, 1–5%) / multi-canal (2–10%)	Anterior canal; or post-trauma / post-Epley conversion	No/brief lat; mixed when multi-canal

Pearl — time the nystagmus, not the dizziness. Latency, duration and fatigability separate canalithiasis from cupulolithiasis and, more importantly, from central positional nystagmus.

Diagnostic manoeuvres

Manoeuvre	Indication	Technique
Dix–Hallpike	PC (and sometimes AC) BPPV	Head 45° to test side. Brisk move to head-hanging 20° below horizontal. Hold ≥30 s. Repeat opposite side.
Supine roll (Pagnini–McClure)	HC BPPV — both variants	Supine, head elevated 30°. Rapid 90° turn each side. Observe 30 s each.
Straight head-hang	AC BPPV (rare)	Supine with head extended ~30° below horizontal. Hold 30 s. Forms part of Yacovino sequence.
Side-lying diagnostic	Cervical-spine limitation	Sitting → side-lying with head rotated 45° away from dependent shoulder. Equivalent yield to DH.
Video-Frenzel / VNG	Routine in dedicated practice	Removes fixation, magnifies eyes. ~doubles bedside sensitivity. Records for documentation/peer review.

Pearl — Bárány tiers. Definite BPPV: history + provocation + canal-specific nystagmus + no alternative. Probable (spontaneously resolved): unambiguous history, negative provocation now. Possible: incomplete/atypical, alternatives excluded.

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Treatment — manoeuvre by canal and mechanism

Canal / mechanism	Manoeuvre(s)	Cure rate
PC canalithiasis	Epley (default) · Semont (cervical-spine alternative)	~80% single session; >90% over 2–3 sessions
HC geotropic	Lempert 360° BBQ roll · Gufoni	70–75% single session; 85–90% over 2–3
HC apogeotropic	Modified Gufoni or head-shake → convert → treat	50–70% single; 80–90% cumulative
AC canalithiasis	Yacovino deep head-hanging (side-independent)	~80% single; 95–100% over 2–3
Multi-canal / refractory	Sequential canal-by-canal · mechanical chair · PC occlusion surgery (last resort)	≥90% cumulative; surgical ~3–5% SNHL risk

Pearl — same-encounter re-test. A negative provocation immediately after the manoeuvre is the strongest bedside cure marker and predicts low one-week recurrence.

Pre-manoeuvre safety

Unstable cervical spine (RA C1–C2, atlanto-axial subluxation), symptomatic vertebrobasilar insufficiency on extension — use Semont or side-lying. Recent retinal detachment surgery, severe cardiac decompensation, acute spinal CSF leak — defer; consider Brandt–Daroff. Warn patients about provoked vertigo and transient nausea; emesis bag at hand; assistance for older or frail patients.

Investigations — order only when the picture does not fit

Test	When to order
MRI posterior fossa	Any red flag (see below). Modality of choice for central mimic.
CT temporal bones	Suspected SCD, or MRI contraindicated.
Audiometry	Any auditory symptom — redirects work-up.
vHIT / caloric / VEMP	Suspected second vestibular diagnosis; not routine in typical BPPV.
25-OH vitamin D, DXA	Recurrent BPPV; post-menopausal women.
Delayed-gadolinium MRI	Suspected Ménière's, not BPPV — no role here.

► **Red flags — escalate:** *Persistent downbeat without torsion. No latency or fatigability, nystagmus >2 min. Direction-changing nystagmus in supine. Any focal neurological sign (dysarthria, INO, ataxia). Acute unilateral hearing loss with vertigo. Failure to respond to two well-performed manoeuvres on different days. Each warrants MRI before further therapeutic manoeuvres.*

After the manoeuvre — counselling and follow-up

Postural restrictions not required (2017 AAO-HNS). Residual unsteadiness 24–72 h is normal — recheck if persists >1 wk. Private driving safe once attacks controlled; defer if severe nausea or anticipatory anxiety. Recurrence 15–30% at 1 y, 40–50% at 5 y — counsel as physiology, not failure. Vitamin D + DXA in recurrent disease. Avoid vestibular suppressants beyond 72 h. VRT not routine after single cure; add if PPPD overlay or chronic comorbidity.

Common diagnostic errors — sources of 'refractory BPPV'

Premature termination of Dix–Hallpike (hold ≥30 s, ideally 60). • Failing to test the horizontal canal when Dix–Hallpike is negative. • Misreading apogeotropic nystagmus — weaker side is the affected side. • Diagnosing AC-BPPV on pure persistent downbeat without torsion — central until MRI excludes. • Labelling normal 24–72 h residual unsteadiness as 'refractory' without re-testing.

► Key references

Bhattacharyya N et al. AAO-HNS BPPV CPG update. Otolaryngol Head Neck Surg 2017;156(3 Suppl):S1–S47. ► *von Brevern M et al. BPPV diagnostic criteria — Bárány Society. J Vestib Res 2015;25(3-4):105–117.* ► *Kim JS, Zee DS. BPPV. N Engl J Med 2014;370(12):1138–1147.* ► *Hilton MP, Pinder DK. Epley for BPPV. Cochrane Database Syst Rev 2014;(12):CD003162.*