Persistent Postural-Perceptual Dizziness

Rehabilitation — Triple-Track Therapy: VRT, CBT, and Pharmacotherapy

Vestibular Physiotherapy for Clinicians

Topic 10 of 12

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How to Use This Review

This literature review is part of the Vestibular Medicine for Physiotherapists series. It is written for physiotherapists with a special interest in vestibular rehabilitation. The review distils current evidence into a structured clinic-ready resource — read in a single 20-30 minute sitting, or use as a topic-specific reference. Body sections progress from mechanism and assessment through to rehabilitation and outcomes; callout boxes highlight pearls, pitfalls, snapshots, notes and cautions for rapid retrieval.

Five callout types appear throughout the document — Pearl (clinical insight), Pitfall (common mistake), Note (definition or framing), Caution (safety or red flag), Snapshot (quick summary). Each is colour-coded for visual scan-ability.

Callout Box Guide

Pearl: Pearls capture clinical insights worth memorising — they appear throughout the body of the review next to the most useful evidence for the clinic.
Pitfall: Pitfalls flag common mistakes — read these first if you have only five minutes with the document.
Note: Notes provide definitions or framing for key terms used in the section that follows.
Caution: Cautions flag safety concerns or red flags that demand immediate clinical action or onward referral.
Snapshot: Snapshots crystallise the section above into one or two memorable lines — useful for revision.

Contents

Persistent postural-perceptual dizziness (PPPD) is a chronic functional vestibular disorder defined by the Bárány Society in 2017 [1]. Patients present with persistent dizziness exacerbated by upright posture, motion, and visually complex environments — characteristic features that distinguish PPPD from peripheral vestibular disease [2,14].

I. Bárány Society 2017 Diagnostic Criteria

PPPD requires four diagnostic criteria — dizziness or unsteadiness for over fifty percent of days for at least three months, persistent rather than episodic symptoms, exacerbation by upright posture, active or passive motion, and visual complexity, and a precipitating event such as acute vestibular insult, panic attack, mild traumatic brain injury (mTBI), or illness [1].

Vestibular testing is typically normal — peripheral and central function preserved — yet symptoms are genuine and disabling [1,2]. The disorder reflects maladaptive central change rather than ongoing peripheral pathology, with visual-vestibular reweighting and threat amplification driving chronicity [6].

Figure 1. Bárány Society 2017 Diagnostic Criteria Tree

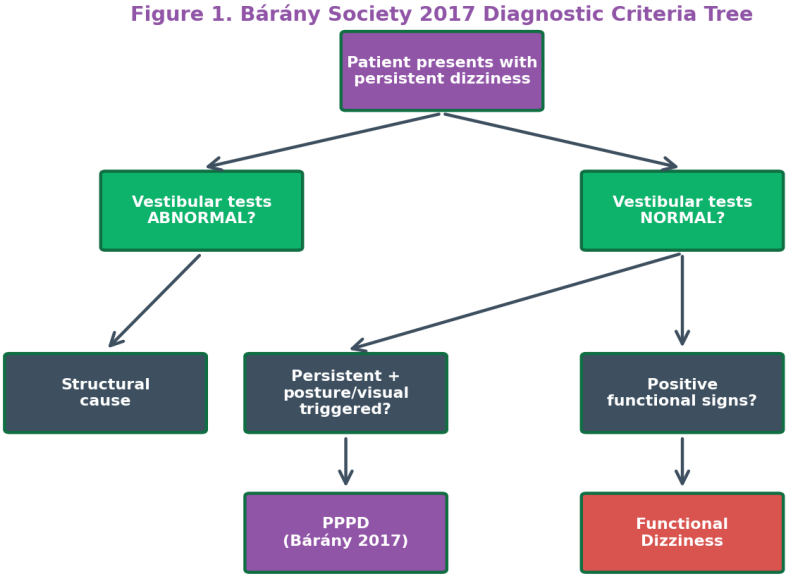

Figure 1. Bárány Society 2017 Diagnostic Criteria Tree.

Source: Australian Dizziness Clinics, 2026.

II. Perceptual-Mismatch Mechanism

The brain expects strong vestibular input as it did during the acute precipitant. The input has actually normalised, and the mismatch triggers a threat-detection mode with heightened attention to soma and over-reliance on vision [2,6]. The persistent perceptual error fuels both symptoms and the avoidance behaviour that maintains the loop [10].

Pearl: Communicate the mismatch model in plain language at session one. Patients who understand why they feel dizzy despite normal tests engage with retraining; patients who hear only that their tests are normal often disengage.

III. The 3P Model

Predisposing factors increase vulnerability — trait anxiety, prior vestibular events, history of anxiety or depression [2,14]. Precipitating factors trigger PPPD onset — acute vestibular insult, panic attack, mTBI, illness. Perpetuating factors maintain the disorder — visual dependence, somatic attention, avoidance behaviour, and untreated mood comorbidity [6,14].

Snapshot: Rehabilitation primarily targets perpetuating factors — these are modifiable and they sustain the disorder long after the precipitant resolves. Predisposing factors and precipitants are largely fixed.

Figure 2. Perceptual-Mismatch Mechanism Loop

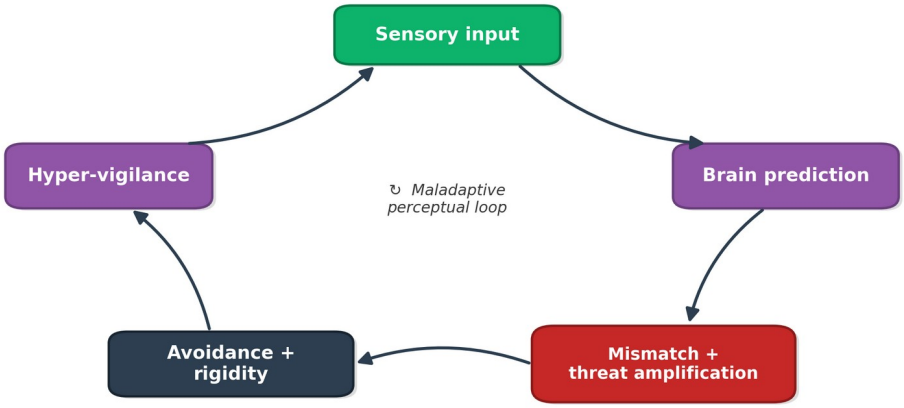

Figure 2. Perceptual-Mismatch Mechanism Loop.

Source: Australian Dizziness Clinics, 2026.

IV. Clinical Assessment

Use the Visual Vertigo Analogue Scale (VVAS) heavily — patients with visual dependence and environmental sensitivity score fifty to eighty out of one hundred and forty, and the tool tracks improvement uniquely well in this population [14]. Pair with the Dizziness Handicap Inventory (DHI) [4] and the Activities-specific Balance Confidence (ABC) scale [5] for the patient-reported core; the Falls Efficacy Scale-International (FES-I) quantifies fear of falling for those who avoid mobility [3].

Add a brief mood screen — Patient Health Questionnaire-9 (PHQ-9) and Generalised Anxiety Disorder-7 (GAD-7) — and screen for trauma history that may need psychology referral early [6,11]. Engagement risk drives outcome more than initial severity.

V. Graded Exposure Therapy

Build a hierarchy with the patient — quiet supermarket at low traffic, busy street, scrolling screens, crowds, public transport, driving [9,10]. Score baseline anxiety zero to ten and progress when scores fall by half on three consecutive sessions; this matches the methodology validated for phobic postural vertigo [9].

PPPD titration is gentler than peripheral vestibular rehabilitation therapy (VRT) — initial anxiety rises in the first ten to thirty minutes, then drops over thirty to sixty minutes [9,15]. If anxiety escalates to panic, scale back the exposure step rather than abandon it; pace is patient-led but progression is non-negotiable.

Pitfall: Pushing through panic-level anxiety reinforces avoidance and prolongs recovery. Back off to the previous mastered rung and re-attempt at a lower intensity.

Figure 3. 3P Model — Predisposing, Precipitating, Perpetuating

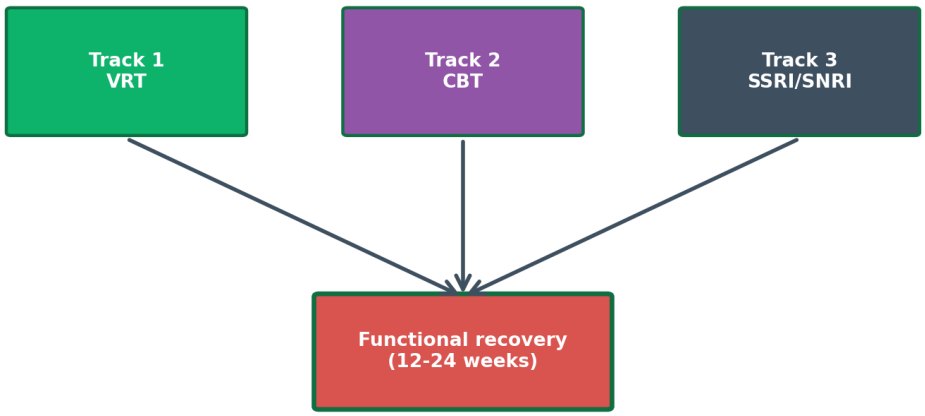

Figure 3. 3P Model — Predisposing, Precipitating, Perpetuating.

Source: Australian Dizziness Clinics, 2026.

VI. Visual Desensitisation

Optokinetic training uses rotating-stripe drum or scrolling visual backgrounds [7,15]. Start one to two minutes seated, progress to standing, then to dynamic balance under visual motion. Real-world translation matters — virtual-reality grocery store and similar paradigms produce measurable change in visual-motion sensitivity [8].

VII. Balance Retraining and Visual-Dependence Reduction

Reduce visual over-reliance — eyes-closed balance, foam-surface balance, moving visual background while maintaining stance, progressive removal of handholds and mirrors [7,15]. Reactive balance challenges with unpredictable surface or visual disturbance retrain the postural set; gait deviations seen in phobic postural vertigo respond to similar mechanism-based work [10].

Figure 4. Graded Exposure Hierarchy with In-Session Anxiety Curve

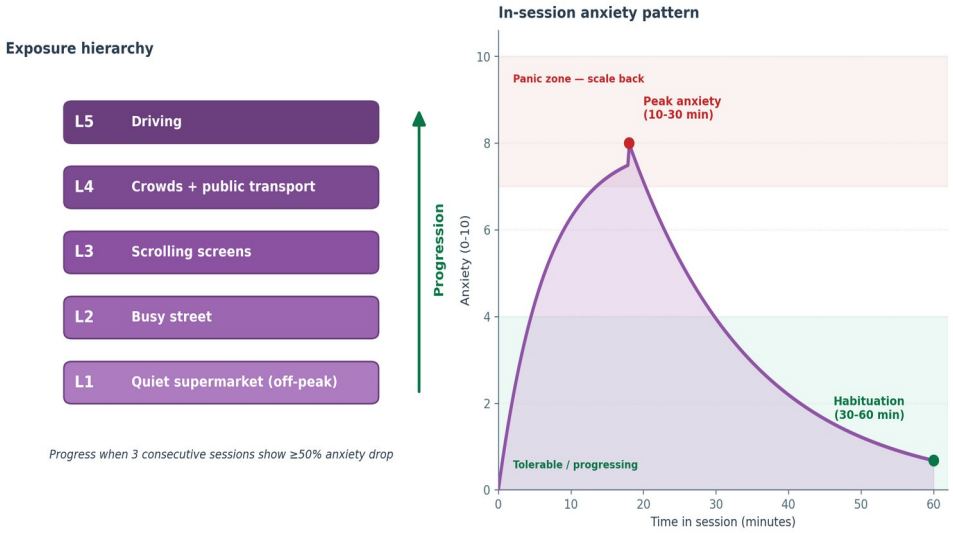

Figure 4. Graded Exposure Hierarchy with Anxiety Curve.

Source: Australian Dizziness Clinics, 2026.

VIII. CBT Integration

Open every session with the neurobiology rationale, deliver exposure with attention away from soma, restructure catastrophic interpretations, and link sessions to value-driven activity goals. Cognitive behavioural therapy (CBT) delivered alongside vestibular rehabilitation has the strongest evidence in chronic functional dizziness [11,15].

Caution: Refer to formal psychology when fear-avoidance is severe, trauma history is present, or catastrophic thinking is entrenched. Combination care almost always outperforms physiotherapy alone.

IX. SSRI and SNRI Pharmacotherapy

Selective serotonin reuptake inhibitors (SSRIs) and serotonin-norepinephrine reuptake inhibitors (SNRIs) are first-line medical management — sertraline, paroxetine, venlafaxine and escitalopram have evidence in PPPD [12]. Onset is gradual at four to eight weeks, and dose escalation is guided by tolerability and response.

Coordinate with prescribing clinicians at the start of physiotherapy — combination outperforms physiotherapy alone by a clear margin [11,12,15]. If response is suboptimal at eight weeks, reconsider dose, agent, or add formal CBT.

Figure 5. Triple-Track Therapy Convergence Diagram

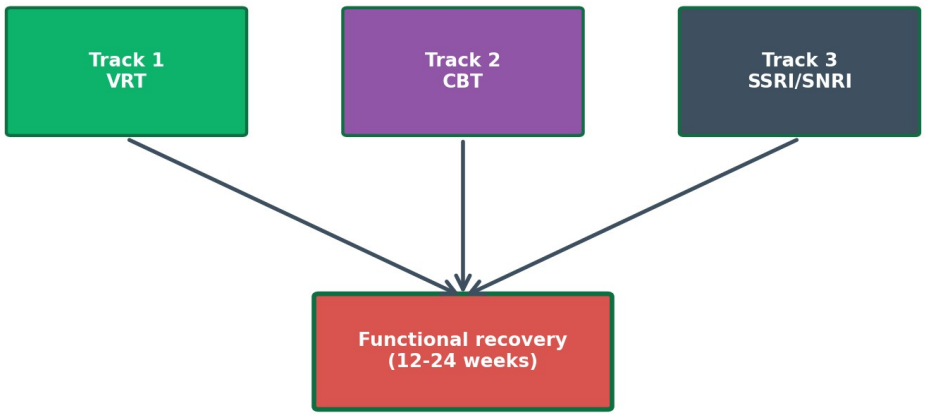

Figure 5. Triple-Track Therapy Convergence Diagram.

Source: Australian Dizziness Clinics, 2026.

X. Long-term Outcomes

Seventy to eighty percent achieve substantial improvement, fifty to sixty percent achieve complete resolution with optimal multidisciplinary management [14,15]. Predictors of better outcome include shorter duration of symptoms, prompt diagnosis, and early engagement with combined therapy [13,14].

Maintenance plan at discharge — relapse signature, two or three rescue exercises, monthly self-assessment, low-threshold check-in pathway [14]. Plan for graded re-entry to challenge environments and pre-empt the relapse triggered by future vestibular insults.

11. References

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Accuracy and Currency

While every effort has been made to ensure the accuracy and completeness of the information contained in this document at the time of publication, the field of vestibular medicine is rapidly evolving. Readers are encouraged to consult primary literature and current guidelines.

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