Nonpharmacologic treatments for chronic vertigo

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Policy contains: Dynamic posturography; particle (canalith) repositioning maneuvers; transtympanic micropressure; vestibular rehabilitation.

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Coverage policy

Particle repositioning maneuvers (either the Epley maneuver or the Semont maneuver) for treatment of benign paroxysmal positioning vertigo is clinically proven and, therefore, and may be medically necessary when all of the following criteria are met (Bhattacharyya, 2017):

- Confirmed by a positive Dix-Hallpike maneuver, characterized by:
    - Vertigo is associated with a mixed torsional and vertical nystagmus.
    - Latency period between the completion of the maneuver and the onset of vertigo and nystagmus.
    - Limited duration of vertigo and nystagmus, typically less than 60 seconds.

For lateral (horizontal) canal BPPV: Confirmed by a positive supine roll test, characterized by:

- Horizontal nystagmus changing direction based on head position.
- Geotropic or apogeotropic nystagmus.

Patient History:
• Reports recurrent, brief episodes of vertigo triggered by changes in head position.

Vestibular rehabilitation may be clinically proven and, therefore, medically necessary when all of the following criteria are met (McDonnell, 2015; Porciuncula, 2012; Wegner 2014):

- Diagnosis of vestibular hypofunction has been confirmed by vestibular function tests.
- Symptoms of vestibular hypofunction have existed for at least one month.
- Rehabilitation is performed by a physical therapist or occupational therapist as part of a therapy plan of care.

Dynamic posturography and tympanic micropressure for treatment of vestibular disorders are investigational/not clinically proven and, therefore, not medically necessary (Ahsan, 2015; Syed 2014, 2015).

Limitations

All other uses of particle repositioning maneuvers (the Epley maneuver or the Semont maneuver) or vestibular rehabilitation are not medically necessary, including:

- For particle repositioning maneuvers, benign paroxysmal positioning vertigo is usually in remission within two visits. Beyond two visits, there should be justification in the medical record for continued treatment. Beyond four visits with no remission, there should be consideration of referral back to the attending physician.
- For vestibular rehabilitation:
    - Members with certain comorbidities may not be appropriate candidates or may need specialized, individually tailored vestibular rehabilitation protocols. Examples of such comorbidities include cervical stenosis, Down syndrome, severe rheumatoid arthritis, cervical radiculopathies, Paget's disease, morbid obesity, ankylosing spondylitis, low back dysfunction, and spinal cord injuries (Bhattacharyya, 2017).
    - One visit per week for six weeks is considered medically necessary. Six additional visits are considered medically necessary if, upon medical review, there is evidence of clinically significant improvement. If there is no evidence of improvement after 12 visits, additional visits are not considered medically necessary.

Alternative covered services

- Surgical treatment.
- Medical treatment such as antiepilepsy pharmacologics, antivertigo drugs, beta-receptor blockers, betahistine, ototoxic antibiotics, corticosteroids, calcium-channel blockers, carboanhydrase inhibitors and serotonin reuptake inhibitors.

Background

The vestibular system uses sensory input from the eyes, muscles and joints, and inner ear to maintain balance and stable vision (Vestibular Disorders Association, 2023). Vestibular disorders can result from disease or injury that damages the processing areas in the inner ear and brain. The most common causes of vestibular disorders in adults are head trauma and age-related degeneration of the otolithic membrane, but in many cases the cause is unknown (Vestibular Disorders Association, 2023). In children, the most common disorders known to cause dizziness and vertigo are benign paroxysmal vertigo of childhood, migraine, trauma, vestibular neuritis and otitis media (Gioacchini, 2014, McCaslin, 2011).

Common symptoms of vestibular disorders include imbalance or unsteadiness, dizziness, blurred or bouncing vision, nausea, hearing changes, problems with coordination, and vertigo (Vestibular Disorders Association, 2023). Symptoms of vestibular dysfunction may be mild, lasting perhaps only seconds or minutes, or they may be severe, resulting in total disability.

There is no consensus on the precise definition of vertigo, but it is generally recognized as a distinct type of dizziness with the sense of rotation, rocking, or of the world spinning, even when the person is perfectly still, also known as illusion of motion (Strupp, 2013). In the United States, 1.7% of ambulatory medical care visits recorded vertigo or dizziness among the chief complaints (Nguyen-Huynh, 2012).

The most common vestibular disorder is benign paroxysmal positioning vertigo (Vestibular Disorders Association, 2023). Subtypes of benign paroxysmal positioning vertigo are distinguished by the particular semicircular canal involved (anterior, posterior, or horizontal) and whether the detached otoconia are free-floating within the affected canal (canalithiasis) or attached to the cupula (cupulolithiasis). Benign paroxysmal positioning vertigo is typically unilateral, and the most common form is canalithiasis in the posterior semicircular canal.

In most cases, the symptoms diminish or disappear without treatment as the vestibular system heals or the nervous system learns to compensate for the disorder (Strupp, 2013). Watchful waiting may be preferred, but the time to resolution of symptoms varies considerably across diagnoses. Some patients or providers may wish to expedite recovery and avoid further risk of injury. When symptoms persist, treatment can provide a complete cure or only control the symptoms. Treatment for vestibular disorders varies according to the diagnosis and may consist of positional head maneuvers, dietary changes, vestibular rehabilitation therapy, prescribed drugs or equipment, or, in some cases, surgery.

Findings

An expanding body of clinical practice guidelines continues to affirm particle repositioning maneuvers as the primary treatment approach for benign paroxysmal positional vertigo, with strong support for the Epley maneuver and acknowledgement of the Semont maneuver as an alternative (Bhattacharyya, 2017). Recent systematic reviews and meta-analyses have reinforced the efficacy of repositioning maneuvers while also broadening the comparative evidence base to include additional techniques such as the Gans, Gufoni, and modified Epley maneuvers (Si, 2025; Valsted, 2024). Other analyses extend the scope of inquiry by evaluating outcomes related to gait, falls, and recurrence following treatment, underscoring the broader functional impact of these maneuvers (Pauwels, 2023; Alfarghal, 2023; Saishoji, 2023). Evidence has also begun to clarify the role of pharmacologic adjuncts, particularly betahistine, in addressing residual dizziness after repositioning maneuvers, suggesting potential benefit with longer use (Alsolamy, 2024). Finally, reviews of vestibular rehabilitation and other therapeutic options provide context for the selective use of adjunctive strategies and delineate interventions with insufficient or low-quality evidence, such as transtympanic micropressure therapy and microvascular decompression (McDonnell, 2015; Syed, 2015; van den Berge, 2017).

Guidelines

The Clinical Practice Guideline on Benign Paroxysmal Positional Vertigo from the American Academy of Otolaryngology—Head and Neck Surgery strongly recommends the use of particle repositioning maneuvers, such as the Epley maneuver or the Semont maneuver, for the treatment of benign paroxysmal positional vertigo. The guideline identifies the Epley maneuver as the first-line treatment for posterior semicircular canal benign paroxysmal positional vertigo based on high-quality evidence from randomized controlled trials and systematic reviews. The Epley maneuver has been shown to be significantly more effective than placebo or alternative treatments such as Brandt-Daroff exercises for resolving symptoms and converting the Dix-Hallpike test to negative. Multiple studies cited in the guideline demonstrate high success rates when repeated Epley maneuvers are performed for patients not fully cleared after the initial treatment. Serious adverse effects are rarely reported. The Semont maneuver is also considered effective, though the Epley maneuver is more consistently recommended as the primary repositioning procedure (Bhattacharyya, 2017).

Vestibular rehabilitation

There is sufficient evidence to support vestibular rehabilitation for the treatment of chronic vertigo. Moderate- to strong-quality evidence indicates that vestibular rehabilitation is safe and effective for individuals with unilateral peripheral vestibular dysfunction (McDonnell, 2015). Vestibular rehabilitation improves symptoms and functional outcomes in the medium term, with standardized mean difference −0.83, 95% CI −1.02 to −0.64. For benign paroxysmal positional vertigo specifically, however, the evidence is less conclusive, and rehabilitation is more appropriately used as an adjunctive therapy. Patients with additional balance deficits, central nervous system disorders, or increased fall risk may derive greater benefit than those with isolated benign paroxysmal positional vertigo (McDonnell, 2015; Porciuncula, 2012; Wegner, 2014; Bhattacharyya, 2017).

Systematic Reviews and Meta Analysis

Particle repositioning maneuvers

Systematic reviews and meta-analyses consistently support particle repositioning maneuvers as the first-line treatment for benign paroxysmal positional vertigo. A meta-analysis of 22 studies (n=5,196) reported that 58.9% of patients achieved symptom resolution after a single maneuver, 18.3% required two sessions, and 4.4% required three (Alfarghal, 2023). A review of 20 studies (n=2,597) found significant improvements in gait velocity, reduced fall rates, and decreased fear of falling after repositioning maneuvers (Pauwels, 2023). Another systematic review of 27 randomized controlled trials (n=1,629) confirmed that the Epley maneuver consistently reduces vertigo symptoms and yields negative Dix-Hallpike tests in both primary and specialty care settings (Saishoji, 2023).

Newer comparative evidence expands on these findings. A Bayesian network meta-analysis of 22 randomized controlled trials (n=2,507) showed that the Epley maneuver (odds ratio 7.9, 95% CI 3.21 to 23.31) and the Semont maneuver (odds ratio 6.1, 95% CI 1.97 to 18.46) were significantly more effective than usual treatment. Other maneuvers also demonstrated benefit, with the Gans maneuver (odds ratio 11, 95% CI 1.65 to 83.85) showing the highest ranking probability (Si, 2025). A separate review of 9 randomized controlled trials (n=413) reported no significant difference between Epley and Semont (relative risk 1.13, 95% CI 0.89 to 1.44), transient superiority of Epley over Gans at 24 hours (relative risk 1.44, 95% CI 1.04 to 2.00), and comparable results for the Li maneuver (Valsted, 2024). Together, these findings indicate that while the Epley maneuver remains the most strongly endorsed, other maneuvers can achieve similar outcomes and may be preferable in patients with limited cervical mobility or specific canal variants.

Pharmacologic adjuncts

Beyond maneuvers, there is emerging evidence on the use of medication for residual dizziness. A systematic review and meta-analysis of 8 randomized controlled trials (n=516) compared the Epley maneuver plus betahistine with the Epley maneuver alone. No clinically significant difference was observed in Dizziness Handicap Inventory scores or visual analog scale for vertigo at 1 week. However, pooled data with 4 weeks of follow-up demonstrated a statistically significant reduction in visual analog scale scores, standardized mean difference −0.89, 95% CI −1.30 to −0.49, suggesting that adjunct betahistine may provide a time-dependent benefit in managing persistent symptoms (Alsolamy, 2024).

Other evidence

Randomized controlled trials provide additional support for alternative maneuvers. A trial comparing the Epley and Gans maneuvers (n=234) found both effective, with negative Dix-Hallpike tests in 82.2% of the Epley group and 78.4% of the Gans group at 24 hours. At one month, 95% of both groups maintained remission, confirming that the Gans maneuver is a viable option, particularly for patients with cervical spine disorders (Dhiman, 2023).

Evidence for other interventions remains limited. For Ménière’s disease, systematic reviews have not demonstrated a significant benefit of transtympanic micropressure therapy compared with placebo, and the evidence for microvascular decompression of the cochleovestibular nerve remains low in quality with only

modest benefit (Syed, 2015; van den Berge, 2017).

In 2025, we expanded the Findings section by integrating three new systematic reviews and meta-analyses on pharmacologic adjuncts and comparative repositioning maneuvers (Alsolamy, 2024; Valsted, 2024; Si, 2025), reorganized the evidence into clearer subsections for vestibular rehabilitation, particle repositioning maneuvers, pharmacologic adjuncts, and other therapies, and streamlined older reviews to reduce redundancy while maintaining coverage-relevant detail. No policy changes warranted,

References

On August 16, 2025, we searched PubMed and the databases of the Cochrane Library, the U.K. National Health Services Centre for Reviews and Dissemination, the Agency for Healthcare Research and Quality, and the Centers for Medicare & Medicaid Services. Search terms were “transtympanic micropressure treatment” (MeSH), “physical therapy modalities” (MeSH), “vestibular diseases” (MeSH), “Dizziness” (MeSH). We included the best available evidence according to established evidence hierarchies (typically systematic reviews, meta-analyses, and full economic analyses, where available) and professional guidelines based on such evidence and clinical expertise.

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Policy updates

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