



# CIGNA MEDICAL COVERAGE POLICY

The following Coverage Policy applies to all plans administered by CIGNA Companies including plans administered by Great-West Healthcare, which is now a part of CIGNA.

**Subject Vestibular Rehabilitation and Particle Repositioning Maneuvers**

**Effective Date ..... 1/15/2009**  
**Next Review Date ..... 1/15/2011**  
**Coverage Policy Number ..... 0021**

## Table of Contents

Coverage Policy .....	1
General Background .....	2
Coding/Billing Information .....	6
References .....	6
Policy History.....	9

## Hyperlink to Related Coverage Policies

Computerized Dynamic Posturography (CDP)  
Meniett™ Device

### INSTRUCTIONS FOR USE

Coverage Policies are intended to provide guidance in interpreting certain **standard** CIGNA HealthCare benefit plans as well as benefit plans formerly administered by Great-West Healthcare. Please note, the terms of a participant's particular benefit plan document [Group Service Agreement (GSA), Evidence of Coverage, Certificate of Coverage, Summary Plan Description (SPD) or similar plan document] may differ significantly from the standard benefit plans upon which these Coverage Policies are based. For example, a participant's benefit plan document may contain a specific exclusion related to a topic addressed in a Coverage Policy. In the event of a conflict, a participant's benefit plan document **always supercedes** the information in the Coverage Policies. In the absence of a controlling federal or state coverage mandate, benefits are ultimately determined by the terms of the applicable benefit plan document. Coverage determinations in each specific instance require consideration of 1) the terms of the applicable group benefit plan document in effect on the date of service; 2) any applicable laws/regulations; 3) any relevant collateral source materials including Coverage Policies and; 4) the specific facts of the particular situation. Coverage Policies relate exclusively to the administration of health benefit plans. Coverage Policies are not recommendations for treatment and should never be used as treatment guidelines. Proprietary information of CIGNA. Copyright ©2009 CIGNA

## Coverage Policy

**CIGNA covers up to three (3) visits of particle repositioning maneuvers (e.g., Epley canalith maneuver or Semont maneuver) per episode as medically necessary for the treatment of benign paroxysmal positional vertigo (BPPV).**

**Under many benefit plans, coverage for vestibular rehabilitation is subject to the terms, conditions and limitations of the applicable benefit plan's Short-Term Rehabilitative Therapy benefit and schedule of copayments. Many benefit plans include a maximum allowable benefit for duration of treatment or number of visits. When the maximum allowable benefit is exhausted, coverage will no longer be provided even if the medical necessity criteria described below are met.**

**If coverage is available for vestibular rehabilitation, the following conditions of coverage apply.**

**CIGNA covers vestibular rehabilitation, vestibular exercise or balance retraining as medically necessary for the treatment of vertigo when ALL of the following medical necessity criteria have been met:**

- The vestibular lesions are stable, resulting in symptoms that are vestibular in origin and can be reliably reproduced.
- Symptoms interfere with activities of daily living.
- Failure of medical management.

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## General Background

Vertigo is defined as the illusory sensation of motion, either of the body or of the surrounding environment, occurring while an individual is stationary. It is often associated with a feeling of spinning, nausea, emesis and diaphoresis. Sudden simple movements or change of posture may provoke vertigo, which can be accompanied by disequilibrium. The condition of vertigo can arise from disturbances in the vestibular system, central nervous system (brainstem or cerebellum) or cardiovascular system, or it can be idiopathic or psychological in origin. Lesions of the vestibular system may result in pathologic vertigo.

Conditions associated with peripheral vertigo include benign paroxysmal positional vertigo, Ménière's disease, acoustic neuroma, labyrinthitis, and vestibular neuronitis. Vertigo associated with Ménière's disease differs from BPPV in that the vertigo occurs spontaneously, lasts for minutes to hours and is accompanied by unilateral hearing loss and tinnitus. Although the pathophysiology is not completely understood, Ménière's disease has been linked to damage to the labyrinth from viral labyrinthitis. Vestibular neuronitis is a disease thought to be a neuronitis that is viral in origin, affecting the vestibular division of the eighth cranial nerve. Acoustic neuroma is usually associated with a progressive unilateral deafness and tinnitus.

The two primary tests of vestibular dysfunction are caloric testing and rotational testing. The vestibular function tests include: spontaneous nystagmus, including gaze nystagmus; positional nystagmus; caloric vestibular testing; optokinetic nystagmus testing; oscillating tracking test; and sinusoidal vertical axis rotational testing. Electronystagmography (ENG) is employed in many of these tests, where the differences in electrical potentials around the eyes is measured and recorded during nystagmus. The principle of the vestibulo-ocular reflex (VOR) is applied in the indirect measurement of vestibular function. Many of these tests are nonspecific and cannot identify the underlying pathology.

The standard of care for the definitive diagnosis of BPPV is a provocative test, the Dix-Hallpike test, which is based on the theory of canalolithiasis. This test, which is generally performed during a standard physician's office visit, involves rapidly changing the patient's position from sitting upright to lying down with the head to one side. The positionally-provoked nystagmus has both torsional and vertical components. A Dix-Hallpike test is considered positive for BPPV if the maneuver provokes paroxysmal vertigo and nystagmus. When the test is performed during a standard evaluation and management office visit, the Dix-Hallpike is considered integral and is not separately reimbursed.

Benign paroxysmal positional vertigo (BPPV), a disorder of the inner ear labyrinth, is one of the most common forms of vestibular positional vertigo. Positional pathologic vertigo is precipitated by a change in head position, usually recumbent, with the head turned to either the right or the left. BPPV is characterized by positional vertigo and positional nystagmus (i.e., repeated, rhythmic oscillations of the eye), which occur when the head moves in certain directions or positions. Patients report the sudden onset of vertigo associated with specific movements involving the head, such as rolling over in bed, bending over, or looking upward. Although BPPV can occur following head trauma, head surgery, viral labyrinthitis or stapes surgery, it is most often idiopathic in nature. BPPV typically involves a single semicircular canal, usually posterior, but may involve both posterior and lateral canals in the same inner ear (Parnes, et al., 2003). The attacks generally last fewer than 30 seconds, but may last several minutes. In most cases, the condition resolves spontaneously within a few weeks or months after onset; in some cases, however, symptoms may become protracted.

Initially, authors proposed cupulolithiasis as a theory causing BPPV. Cupulolithiasis refers to densities adhered to the cupula of the crista ampularis. Cupulolith particles reside in the ampulla of the semicircular canals and are not free-floating. Authors hypothesized the abnormal dense particles attached to the cupula resulted in sensitivity to gravity. A more recent and widely accepted theory that attempts to explain the underlying pathophysiology of BPPV is the mechanism of canalolithiasis, a condition that involves the presence of free-floating particulate matter within the posterior semicircular canal of the vestibular labyrinth, causing vertigo. The free-floating debris is thought to originate within the vestibular labyrinth. Recent studies suggest that variants of BPPV may also involve the anterior and horizontal canals. Superior canal involvement is rare. It is thought that BPPV results when the free-floating debris in the canal is deflected, causing a deflection of the cupula after provocative head movements (Haynes, 2002).

## **Components of Treatment for Vestibular Disorders**

The two approaches used in the treatment of patients with vestibular disorders are particle repositioning maneuvers and vestibular rehabilitation (also referred to as vestibular exercise therapy or balance retraining). The primary aim of particle repositioning maneuvers, such as the Epley canalith procedure, is to treat the underlying pathology causing the symptoms. Vestibular rehabilitation programs follow the compensatory and adaptive models, rather than the restorative approach, teaching and training patients to adapt to their vestibular dysfunction and increasing the tolerance level to the vertigo through a series of exercises.

### **Particle Repositioning Maneuvers**

The current standard of care for treating the underlying cause of BPPV is based on a maneuver first introduced by Epley. Canalith repositioning, as described by Epley, is a series of rotational maneuvers thought to clear the offending particles (i.e., canaliths) out of the semicircular canals via the common crus to the utricle, where they no longer affect the dynamics of the semicircular canals (Epley, 1992). Unlike vestibular exercise therapy interventions, particle repositioning maneuvers treat the underlying pathology of BPPV.

The Epley maneuver, also called the canalith repositioning maneuver, involves a five-position cycle in which the patient undergoes a series of timed head maneuvers and, in some cases, the application of mastoid vibration. The cycle is repeated until no nystagmus is observed during any of the position changes or until a total of five cycles has been completed. In general, resolution of symptoms occurs within one to two treatments. It should be noted, however, that the majority of studies report success rates of 75% or greater after just a single treatment. Mastoid vibration using a bone conduction vibrator may or may not be used during the procedure.

The Semont maneuver, also called the liberatory maneuver, involves moving the seated patient quickly from sitting to lying with the affected ear down, then quickly over so that the other ear is down, and then back to a sitting position. This maneuver requires abrupt head movements, making it more difficult to perform and potentially more uncomfortable for the patient than the Epley maneuver.

### **Literature Review for Particle Repositioning Maneuvers**

The scientific literature contains evidence that particle repositioning maneuvers, such as the Epley canalith and Semont maneuvers, are safe and effective for the treatment of patients with BPPV. Evidence exists primarily in the form of numerous case series, with the majority of the studies evaluating the Epley canalith maneuver. A small number of randomized controlled trials have been performed. The reported success rates range from 44–90%, with several studies reporting no effect. Epley's initial study in 1992 noted an 80% success rate after a single treatment and 100% success when more than one treatment session was involved. Subsequent open, clinical trials report more widely varying success rates. Outcome measures used in studies have included self-reported resolution of symptoms and the presence or absence of positional nystagmus, demonstrated through follow-up Dix-Hallpike testing.

Von Brevern et al. (2006) conducted a randomized trial to determine the short-term efficacy of the Epley maneuver for the treatment of posterior canal (PC) BPPV. Sixty-seven patients with acute unilateral PC-BPPV were included and randomly assigned to treatment with the Epley maneuver (n=36) or to a sham procedure (which consisted of the Epley maneuver but performed on the unaffected side) (n=31). After 24 hours, 28 (80%) of the 35 patients in the treatment group were free of positional vertigo and nystagmus compared to three (10%) of the 31 patients in the sham group. The patients in the sham group then received the Epley maneuver to the affected side and 24 hours after treatment, 26 (93%) of the 28 patients were symptom-free. At four weeks, 85% of all patients were free of positional vertigo. No serious side effects were reported. The authors concluded that treatment of PC-BPPV using the Epley maneuver is more effective than sham in the short-term.

Prokopakis et al. (2005), in a prospective study, assessed the long-term efficacy of canalith repositioning procedures (CRP) in the treatment of BPPV. The study consisted of 592 patients who were either treated with the Epley maneuver (for those patients with either posterior or anterior canal involvement) or the Barbeque maneuver (for those patients with horizontal canal involvement). Follow-up occurred every six months for a mean of 46 months. At that time, 544 (92%) of the 592 patients treated reported no symptoms of vertigo. The authors concluded that the long-term data collected suggests that CRP is an efficient and long-lasting noninvasive treatment for BPPV.

A recent meta-analysis was conducted by White et al. (2005) evaluating the efficacy of repositioning maneuvers compared to the rate of resolution in the untreated controls. Nine randomized controlled trials consisting of 505 patients suggested that canalith repositioning is safe and effective for the treatment of BPPV.

The value of applying concurrent mastoid vibration remains controversial, and there is no consensus on its role in particle repositioning procedures. Li et al. (1995) advocated the use of a vibratory stimulus applied to the mastoid of the affected ear to facilitate the movement of the particle. Reported success rates for the treatment, however, were no different than those from studies which did not include mastoid vibration during treatment. Motamed et al. (2004) in a prospective randomized study and Hain et al. (2000) in a retrospective case review obtained similar results which demonstrated that the concurrent use of mastoid vibration with the canalith repositioning procedure does not affect the outcome.

Insufficient evidence exists in the scientific literature to support the use of particle repositioning maneuvers for conditions other than BPPV.

### **Vestibular Rehabilitation/Vestibular Exercise Therapy/Balance Retraining**

The second approach used to treat vestibular disorders is vestibular rehabilitation, also referred to as vestibular exercise therapy or balance retraining. Physical or occupational therapists provide these rehabilitation programs using a custom-designed series of training exercises. Vestibular rehabilitation is often used in the treatment of patients with chronic balance disorders other than BPPV, such as neuronitis, labyrinthitis, Ménière's disease, and acoustic neuroma. Studies have suggested that patients with conditions that demonstrate fluctuating symptoms, such as Ménière's disease, and conditions that exhibit spontaneous vertigo will experience poorer outcomes from a program of vestibular exercise therapy than those with stable deficits and positional vertigo. During the evaluation process, specific functional deficits related to motion-provoked symptoms or abnormalities in gait or postural control are assessed.

Training exercises taught during vestibular rehabilitation programs are aimed at reducing or eliminating motion-provoked and/or positional sensitivity. These exercises include gait and balance training, training in activities of daily living, and generalized conditioning. This approach does not treat the underlying cause of the symptoms. In general, a vestibular rehabilitation program consists of a six-week course of training exercises performed two to three times per week.

### **Literature Review for Vestibular Rehabilitation/Vestibular Exercise Therapy/Balance Retraining**

Hillier et al. (2007) in a Cochrane review, reported on the effectiveness of vestibular rehabilitation in people with symptomatic unilateral peripheral vestibular dysfunction. Twenty-one trials met the criteria for inclusion in the review which included 1383 subjects. Included studies addressed the effectiveness of vestibular rehabilitation against control/sham interventions, non-vestibular rehabilitation interventions or other forms of vestibular rehabilitation. Outcomes measures included: frequency and severity of dizziness or visual disturbance; changes in balance impairment, function or quality of life; and measures of physiologic status with known functional correlation. Four studies investigated benign paroxysmal positional vertigo, three investigated postoperative patients (either acoustic neuroma resection or ablative vestibular surgery), three investigated acute unilateral vestibular loss, two specifically investigated Ménière's (non-acute phase), and the rest reported their sample variously as having chronic unilateral vestibular weakness, hypofunction, dysfunction or dizziness of vestibular origin (including labyrinthitis, neuronitis and other mixed or idiopathic unilateral peripheral vestibular dysfunction pathologies). According to the authors, there was moderate to strong evidence that vestibular rehabilitation for the general diagnosis of unilateral peripheral vestibular disorders was safe and effective. When broken down into subgroups, the evidence was limited, and the authors reported that there was mixed evidence regarding the effectiveness of exercise-based vestibular rehabilitation compared to repositioning maneuvers for the specific diagnosis of BPPV. There was some evidence that vestibular rehabilitation was effective in improving function in post-surgical patients, patients with vestibular neuritis, or with acute unilateral peripheral vestibular dysfunction; there was some evidence for the use of vestibular rehabilitation in patients with Ménière's disease in reducing dizziness. The authors also stated that the evidence for dosage and specifics of vestibular rehabilitation was not clear from the largely heterogeneous studies. Limitations of these studies included the difficulty of differentially diagnosing the majority of unilateral peripheral vestibular dysfunction presentations into subgroups, the small subject numbers, and the heterogeneous nature of the studies.

Gottshall et al. (2005) reported on the effect of physical therapy intervention in patients with Ménière's disease with symptoms of unsteadiness and disequilibrium in which episodic vertigo had been controlled. The study

consisted of twenty-six patients who, after demonstrating abnormal function in any of the vestibular testing procedures, complained of disequilibrium or unsteadiness, and had episodic vertigo, were treated with diuretic therapy or a series of transtympanic steroid injections. When patients reported no vertigo attacks for three months, they were further assessed and entered into a vestibular rehabilitation program. Twenty-three patients (88%) responded with a resolution of their pretreatment unsteadiness. Results of the computerized posturography sensory organization test composite scores after physical therapy intervention improved 25%, from 51.1 to 68.5. Patient preintervention scores on the Dizziness Handicap Index (DHI) were a mean of 44.5/100. Postintervention scores on DHI were a mean of 15.6/100. The Dynamic Gait Index (DGI) scores improved 12% after intervention. The patient self-report on the Activities Balance Confidence (ABC) scale reflected a postintervention improvement of 28.7% over the preintervention scores. The postintervention ABC group mean score was 82.8%. This data suggests that vestibular physical therapy may play a role in a subset of patients with Ménière's disease; however, the study is limited by sample size and lack of control.

Strupp et al. (1998) conducted a study to determine the efficacy of vestibular exercises on acute unilateral vestibular lesions. Initially, 82 patients with acute vestibular neuritis were included in the study and randomized into a control group or a therapy group. The control group did no vestibular exercises. The therapy group performed intensive physiotherapy for 10 minutes three times daily. The two groups did not differ in mean age or sex ratio. Forty-three of the 82 patients demonstrated a partial or complete recovery of labyrinth function on follow-up studies with caloric irrigation on day 30 after symptom onset and were therefore excluded from the study. The data of 20 patients in the control group and 19 in the therapy group were analyzed. On day 30, no difference between the two groups was noted in vestibulo-ocular function or perceptual functions. However, the authors did report a statistically significant difference between the two groups on day 30 with regard to balance function ( $p < 0.001$ ). This study suggests that vestibular exercises may improve balance function but had limited effect on vestibulo-ocular function and perceptual function. This study is limited by the small sample size and large exclusion rate.

Yardley et al. (1998) performed a randomized controlled trial ( $n=143$ ) with a mixed population of vestibular vertigo patients. Study participants were randomized to receive either exercise therapy or standard medical care. Results indicated that exercise therapy demonstrated improvement over conventional medical care on measures of anxiety, depression, provocative movements, and sharpened Romberg test. The authors reported that exercise therapy can reduce difficulties with balance and emotional stress caused by dizziness mediated by the vestibular canal. Several outcome measures used were subjective, and the population was heterogeneous.

Evidence in the published, peer-reviewed scientific literature is mixed regarding the efficacy of vestibular rehabilitation. Vestibular lesions are often self-limiting, and it is difficult to distinguish spontaneous recovery from therapy-induced recovery. Interventions used in studied programs vary widely, as well as patient selection criteria, making it difficult to draw conclusions regarding efficacy. Limitations noted in the available evidence include small sample sizes, wide variation in type, frequency and duration of treatment used, lack of randomization, subjective outcome measures and the absence of control groups. Many of the studies failed to control adequately for the confounding variable of spontaneous recovery. Definitive patient selection criteria for vestibular exercises have not been established. A moderate amount of evidence exists in the literature that vestibular rehabilitation, vestibular exercise therapy, and balance retraining may benefit patients with all of the following:

- stable lesions whose symptoms are vestibular in origin and can be reliably reproduced
- failed treatment with medications
- symptoms that interfere with activities of daily living

The use of vestibular rehabilitation for other indications, such as Ménière's disease, and when postural changes or body movements do not reliably provoke the sensation of dizziness is not supported in the published, peer-reviewed scientific literature.

### **Professional Societies/Organizations**

In May 2008, the American Academy of Neurology (AAN), in an evidence based review of therapies for BPPV, found strong evidence to support the use of canalith repositioning procedures as a safe and effective therapy for patients with posterior semicircular canal BPPV. The AAN reported weak evidence to support the effectiveness of the Semont maneuver for BPPV.

## Summary

Vertigo is defined as the illusory sensation of motion, either of the body or of the surrounding environment, occurring while an individual is stationary. The condition of vertigo can arise from disturbances in the vestibular system, central nervous system (brainstem or cerebellum) or cardiovascular system, or it can be idiopathic or psychological in origin. The two approaches used in the treatment of patients with vestibular disorders are particle repositioning maneuvers and vestibular rehabilitation (also referred to as vestibular exercise therapy or balance retraining). The evidence in the peer-reviewed scientific literature is strong regarding the use of particle repositioning maneuvers for the treatment of benign paroxysmal positional vertigo (BPPV) and moderate regarding the use of vestibular rehabilitation in the treatment of patients with stable lesions whose symptoms are vestibular in origin and can be reliably reproduced, who have failed treatment with medications, and whose symptoms interfere with activities of daily living.

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## Coding/Billing Information

**Note:** This list of codes may not be all-inclusive.

**Covered when medically necessary:**

CPT <sup>®</sup> * Codes	Description
95992	Canalith repositioning procedure(s), (eg, Epley maneuver, Semont maneuver), per day (new code 1/1/09)

HCPCS Codes	Description
S9476	Vestibular rehabilitation program, non-physician provider, per diem

ICD-9-CM Diagnosis Codes	Description
386.11	Benign paroxysmal positional vertigo
780.4	Dizziness and giddiness
	Multiple/Varied

\*Current Procedural Terminology (CPT<sup>®</sup>) © 2008 American Medical Association: Chicago, IL.

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## Policy History

<b>Pre-Merger Organizations</b>	<b>Last Review Date</b>	<b>Policy Number</b>	<b>Title</b>
CIGNA HealthCare	1/15/2008	0021	Vestibular Rehabilitation and Particle Repositioning Maneuvers

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