



# Medical Coverage Policy

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## Computerized Dynamic Posturography (CDP)

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### Related Coverage Resources

#### INSTRUCTIONS FOR USE

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### Overview

This Coverage Policy addresses computerized dynamic posturography (CDP) for the evaluation of and treatment planning for balance disorders.

### Coverage Policy

**The use of computerized dynamic posturography (CDP) is considered experimental, investigational or unproven for ANY indication.**

### General Background

Computerized dynamic posturography (CDP) testing is a technique used to assess underlying sensory and motor control impairments associated with balance disorders. It does not identify the site of pathology, but rather documents the impairments that are functional manifestations of the pathology. Neurological evaluation, electronystagmography (ENG), vestibular evoked myogenic potentials (VEMP), vestibular ocular reflex (VOR), video head impulse testing (vHIT), subjective visual vertical (SVV) and in some instances magnetic resonance imaging (MRI) or computed tomography (CT) scans, are typically used to diagnose and plan treatment for

balance disorders (Furman and Barton, 2020). CDP testing has been proposed as a complement to clinical tests that localize and categorize the pathology of balance disorders. During CDP testing, the patient stands on a movable, enclosed platform. A computer controls the platform's orientation and can move it in a horizontal plane or rotate it out of a horizontal plane. The computer also assesses and records the patient's postural stability and motor reactions during platform tilting.

The protocol for CDP testing includes sensory organization, motor control and adaptation testing. During sensory organization testing (SOT), visual, vestibular and proprioceptive information is manipulated to evaluate the effect on standing balance. This protocol creates conditions of conflicting sensory impressions to isolate vestibular balance control and stress the adaptive responses of the central nervous system (CNS). The motor control test (MCT) evaluates the patient's recovery from unexpected platform movements. Adaptation testing (ADT) assesses the patient's ability to modify motor reactions when the platform moves unexpectedly in a "toes up" or "toes down" direction. This adaptive test simulates daily life conditions, such as irregular support surfaces.

The role of CDP testing in the evaluation of and treatment planning for balance disorders is controversial. It has been proposed that patients in the following categories may be candidates for testing with CDP (Monsell, et al., 1997):

- Patients who are undergoing balance rehabilitation
- Patients who have symptoms of disequilibrium for whom conventional tests of vestibular function have not detected an abnormality
- Patients who are being evaluated for balance impairment after trauma
- Disability and return-to-work assessment for patients with vestibular and neurological disorders
- Patients who are receiving potentially vestibulotoxic medications or are in environments that alter inner ear function or where the vestibular structures of the inner ear may be damaged
- Patients with a history of falls and aging patients with disequilibrium
- Patients who may have a nonorganic sensation of imbalance (e.g., malingers)

Varying sensitivity and specificity rates have been reported in the literature for CDP used to evaluate a variety of balance disorders. A sensitivity range of 57–89% and specificity range of 88–100% has been reported for differentiating malingers from both patients with a genuine balance disorder and healthy controls. Sensitivity and specificity rates of 77% and 71% respectively have been reported for differentiating between simulated vertigo and acute vertigo due to vestibular neuritis. The clinical utility of CDP has not been established. CDP reportedly provides additional information to conventional testing for balance disorders. However, the impact of this information on diagnosing, treatment planning, and monitoring has not been clearly defined. CDP does not localize the site of a lesion. Currently, vestibular disorders are typically diagnosed using established testing methods such as electronystagmography and rotational chair testing combined with imaging studies.

### **U.S. Food and Drug Administration (FDA)**

The EquiTest™ system, introduced by NeuroCom® International (Clackamas, OR) in 1985, is approved by the FDA for computerized posturography testing.

### **Literature Review**

The evidence in the published peer-reviewed medical literature examining the safety and effectiveness of CDP includes older studies, some poorly designed, with varying results (Morgan, et al., 2002; El-Kashlan, et al., 1998; Di Fabio, 1996; Di Fabio, 1995). A systematic review by Piirtola and Era (2006) evaluated prospective studies (n=9) and reported that measures related to dynamic posturography (i.e., moving platforms) were not found to be predictive of falls among elderly populations. It was found that while certain aspects of force platform data may have predictive value for subsequent falls, the small number of available studies made it difficult to draw conclusions.

Additional evidence evaluating the use of CDP is primarily in the form of prospective and retrospective case series and validation studies with patient populations ranging from 26–216 (Mallinson, et al., 2019; Ahmed, et al., 2017; Hebert and Manago, 2017; Morisod, et al., 2017; Rossi-Izquierdo, et al., 2014; Ebersbach, et al., 2011; Mockford, et al., 2010; Gouveris, et al., 2007; Mbongo, et al., 2005; Sataloff, et al., 2005; Soto, et al., 2004).

Studies have included patients with a various disorders including vertigo, vestibular schwannoma, Parkinson’s disease and Ménière’s disease. Overall, small sample sizes and poor study design have limited the generalizability of these study results. The data have not reliably demonstrated any beneficial effects of CDP evaluation on patient outcomes.

In 2020, Hayes published an Evolving Evidence Review on computerized dynamic posturography for the diagnosis of vestibular disorders. Following review of clinical studies, Hayes concluded that there was a lack of support for using CDP for diagnosing vestibular disorders as there were not any clinical studies identified that met inclusion criteria. Additionally, following review of systemic reviews there is a lack of evidence of any potential benefit or advantage to the patient due to the low sensitivity and specificity reported and absence of information on clinical utility. Lastly, based on a review of clinical practice guidelines and position statements, there is weak support for the use of CDP in diagnosing vestibular disorders (Hayes, 2020).

A Hayes Search and Summary on computerized dynamic posturography (CDP) for diagnosis of vestibular disorders included four abstracts (a prospective comparative study, a prospective uncontrolled study, a retrospective uncontrolled study, and a review article). Hayes concluded there is sufficient published evidence to evaluate this technology. However, the study abstracts in the most recent literature present conflicting findings regarding this technology (Hayes, 2018).

**Professional Societies/Organizations**

**The American Academy of Otolaryngology—Head and Neck Surgery (AAO-HNS):** The AAO-HNS stated in a position statement on posturography that computerized dynamic platform posturography testing is medically indicated and appropriate in the evaluation of individuals with suspected balance or dizziness disorders (AAO-HNS, 2007; 2014).

In 2017, an AAO-HNS clinical position on benign paroxysmal positional vertigo listed computerized posturography as a diagnostic tool to consider when diagnosing benign paroxysmal positional vertigo. No additional information was provided (Bhattacharyya, et al., 2017).

**Use Outside of the US**

No relevant information found.

**Medicare Coverage Determinations**

	<b>Contractor</b>	<b>Policy Name/Number</b>	<b>Revision Effective Date</b>
NCD		No National Coverage Determination found	
LCD	Palmetto GBA	Local Coverage Determination (LCD): Outpatient Occupational Therapy (L34427)	11/14/2019
LCD	Palmetto GBA	Local Coverage Determination (LCD): Outpatient Physical Therapy (L34428)	11/14/2019

Note: Please review the current Medicare Policy for the most up-to-date information.

**Coding/Billing Information**

- Note:** 1) This list of codes may not be all-inclusive.  
 2) Deleted codes and codes which are not effective at the time the service is rendered may not be eligible for reimbursement.

**Considered Experimental/Investigational/Unproven for any indication:**

CPT®* Codes	Description
92548	Computerized dynamic posturography sensory organization test (CDP-SOT), 6 conditions (ie, eyes open, eyes closed, visual sway, platform sway, eyes closed platform sway, platform and visual sway), including interpretation and report
92549	Computerized dynamic posturography sensory organization test (CDP-SOT), 6 conditions (ie, eyes open, eyes closed, visual sway, platform sway, eyes closed platform sway, platform and visual sway), including interpretation and report with motor control test (MCT) and adaptation test (ADT)

\*Current Procedural Terminology (CPT®) ©2020 American Medical Association: Chicago, IL.

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