UnitedHealthcare®
Oxford

COMPUTERIZED DYNAMIC POSTUROGRAPHY

Policy Number: DIAGNOSTIC 008.17 T2

Effective Date: May 1, 2018

Related Policies
None

INSTRUCTIONS FOR USE

This Clinical Policy provides assistance in interpreting Oxford benefit plans. Unless otherwise stated, Oxford policies do not apply to Medicare Advantage members. Oxford reserves the right, in its sole discretion, to modify its policies as necessary. This Clinical Policy is provided for informational purposes. It does not constitute medical advice. The term Oxford includes Oxford Health Plans, LLC and all of its subsidiaries as appropriate for these policies.

When deciding coverage, the member specific benefit plan document must be referenced. The terms of the member specific benefit plan document [e.g., Certificate of Coverage (COC), Schedule of Benefits (SOB), and/or Summary Plan Description (SPD)] may differ greatly from the standard benefit plan upon which this Clinical Policy is based. In the event of a conflict, the member specific benefit plan document supersedes this Clinical Policy. All reviewers must first identify member eligibility, any federal or state regulatory requirements, and the member specific benefit plan coverage prior to use of this Clinical Policy. Other Policies may apply.

UnitedHealthcare may also use tools developed by third parties, such as the MCG™ Care Guidelines, to assist us in administering health benefits. The MCG™ Care Guidelines are intended to be used in connection with the independent professional medical judgment of a qualified health care provider and do not constitute the practice of medicine or medical advice.

APPLICABLE LINES OF BUSINESS/PRODUCTS

This policy applies to Oxford Commercial plan membership.

BENEFIT CONSIDERATIONS

Before using this policy, please check the member specific benefit plan document and any federal or state mandates, if applicable.

Essential Health Benefits for Individual and Small Group

For plan years beginning on or after January 1, 2014, the Affordable Care Act of 2010 (ACA) requires fully insured non-grandfathered individual and small group plans (inside and outside of Exchanges) to provide coverage for ten categories of Essential Health Benefits ("EHBs"). Large group plans (both self-funded and fully insured), and small group ASO plans, are not subject to the requirement to offer coverage for EHBs. However, if such plans choose to provide coverage for benefits which are deemed EHBs, the ACA requires all dollar limits on those benefits to be removed on all Grandfathered and Non-Grandfathered plans. The determination of which benefits constitute EHBs is made on a state by state basis. As such, when using this policy, it is important to refer to the member specific benefit plan document to determine benefit coverage.

Computerized dynamic posturography (CDP) testing, also called balance board testing or equilibrium platform testing (EPT), is unproven and/or not medically necessary for evaluating any condition including but not limited to balance disorders.
Overall, there is weak evidence in the peer-reviewed literature regarding the efficacy of CDP for evaluating vestibular and other disorders. There is a lack of well-designed, randomized controlled trials (RCTs) with blinded assessments to demonstrate the diagnostic utility of CDP compared with standard tests. Furthermore, there is insufficient evidence demonstrating consistent and beneficial effects of CDP testing on patient-relevant outcomes. Therefore, CDP is considered unproven and not medically necessary.

APPLICABLE CODES

The following list(s) of procedure and/or diagnosis codes is provided for reference purposes only and may not be all inclusive. Listing of a code in this policy does not imply that the service described by the code is a covered or non-covered health service. Benefit coverage for health services is determined by the member specific benefit plan document and applicable laws that may require coverage for a specific service. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment. Other Policies may apply.

CPT Code	Description
92548	Computerized dynamic posturography

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DESCRIPTION OF SERVICES

Computerized dynamic posturography (CDP), also known as moving platform posturography or dynamic posturography, uses a platform device for evaluating a patient's ability to maintain balance. CDP has been used to measure a patient's ability to maintain balance under varying conditions when the usual cues that one relies upon to remain upright, vision, proprioception, and vestibular function, are manipulated. The goal of testing is to isolate vestibular symptoms to a specific cause that can often be treated.

Standard diagnostic tests include electronystagmography and rotational chair tests, which evaluate eye movements in response to a number of different stimuli including the position and rotation of the head.

CLINICAL EVIDENCE

The evidence in the published peer-reviewed medical literature examining the safety and effectiveness of CDP includes mostly older studies, some poorly designed, with inconsistent results (Morgan, et al., 2002; Di Fabio, 1996; Di Fabio, 1995). 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 20 to 216 (Palm 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; Artuso, et al., 2004; Amin; et al., 2002). Studies included patients with various disorders including vertigo, vestibular schwannoma, and Ménière's disease. Overall, small sample sizes and poor study design limit the generalizability of study results. The data do not reliably demonstrate beneficial effects of CDP evaluation on patient outcomes.

Ahmed et al. (2017) performed a study to evaluate the relation between gait parameters and postural stability in early and late stages of Parkinson's disease (PD). Forty-one PD patients were divided into two groups. Group A (n=20) were considered early stage PD and group B (n=21) were considered late stage ambulant PD. A control group (n = 18) consisted of eighteen healthy elderly subjects. The individuals were evaluated for postural stability by computerized dynamic posturography (CDP) device and gait analysis using an 8 m-camera Vicon 612 data capturing system set. The study results found postural instability in early PD and late PD groups with a significant decline of composite equilibrium score and Unified Parkinson Disease Rating Scale motor part score in early PD and late PD groups as compared with control group. The authors concluded that this suggests that particularly highly mobile PD patients benefit from visual feedback-based balance training in early PD and that computerizing dynamic posturography assists in the analysis of the functional aspects of the body imbalance, treatment and prognosis of PD. There was insufficient data for the long follow-up effect of visual feedback-based balance training for PD.

Hebert and Manago (2017) performed a study to determine the reliability and discriminant validity of the computerized dynamic posturography sensory organization test (CDP-SOT) in people with multiple sclerosis (MS). The CDP-SOT was performed on 30 participants with MS. A 2-week–interval, repeated-measures design was implemented to investigate test-retest reliability of the CDP-SOT and the ability of the CDP-SOT to discriminate between participants with lower versus higher disability. The CDP-SOT had excellent reliability for composite scores. Composite scores were significantly greater in the lower-disability group versus the higher-disability group at session 1 (70.89

vs. 48.60) and session 2 (74.82 vs. 48.85). The authors concluded that the CDP-SOT is a reliable measure of balance and accurately differentiates disability status in people with MS. A study limitation identified was the recognition that smaller sample sizes can lead to large variances in measures, prohibiting valid minimal detectable change analyses. Larger longitudinal studies investigating clinically meaningful changes in CDP-SOT scores due to the natural course of MS and in response to treatment need to be conducted.

A single center, retrospective review was conducted by Morisod et al. (2018) to look for a specific posturographic pattern among patients diagnosed with chronic subjective dizziness (CSD) and to visualize improvement after vestibular rehabilitation. The study included 114 patients who underwent computerized dynamic posturography (CDP). Sixty-two percent of the assessment posturographies were abnormal. The most affected sub-items were limit of stability and composite score of sensory organization tests. In the 42 patients who had vestibular rehabilitation and a post rehabilitation posturography, the proportion of abnormal posturography significantly dropped from 79% to 33%. The authors concluded that patients with CSD have a high rate of abnormal posturography, but without a specific pattern. The findings of this study need to be validated by well-designed studies.

A study was conducted by Buster et al. (2016) which compared Computerized Dynamic Posturography (CDP) scores from individuals with traumatic brain injuries (TBI) to controls to determine if CDP could differentiate between the two groups and determine if there was a learning effect associated with testing that could be used to guide evaluation of baseline balance. Ten ambulatory individuals with a history of severe TBI and 10 individuals without participated in three CDP sessions (24-72 hours apart). Participants performed the Berg Balance Test, Dynamic Gait Index and three trials of a standardized balance assessment during each session. Dynamic Movement Analysis (DMA) scores were recorded for each test. Individuals with TBI scored 93% higher (i.e., reflecting poorer balance) than the control group. The group with TBI exhibited 6.6-times more variability compared to the control group. A learning effect was detected in the group with TBI on the first day of testing. The authors concluded that the CDP system detected balance differences between individuals with TBI and controls and given the documented learning effect, the best of three trials should be used to accurately assess baseline scores. The significance of this study is limited by small sample size and short follow-up period.

Smoot et al (2015) conducted a feasibility study with ten children; five with autism spectrum disorder (ASD) and five with typical development (TD) using posturography to monitor changes following vestibular input. Each child participated in a 10 min vestibular swing activity with pre- and post-intervention evaluations under four different sensory testing conditions. Sway ranges, mean sway velocity, sway root mean square (RMS), and sample entropy were calculated from center of pressure (COP) data. All five children with ASD demonstrated decreased mean sway velocity in the eyes open/flat plate condition post-intervention. Four of the five children with ASD demonstrated an increase in RMS and a decrease in anterior/posterior sample entropy post-intervention in the eyes closed, foam pad condition and eyes open, flat plate condition respectively. The authors concluded that using posturography with sensory integration warrants further investigation. This is an uncontrolled study with a small sample size. Due to limited studies, small sample sizes, and weak study designs, there is insufficient evidence to conclude that CDP is useful for evaluating any condition. Further clinical trials demonstrating the clinical usefulness of CDP are needed.

Professional Societies
American Academy of Otolaryngology - Head and Neck Surgery (AAO-HNS)
In a 2014 position statement, AAO-HNS recognizes that the following tests or treatments are medically indicated and appropriate in the evaluation or treatment of persons with suspected balance or dizziness disorders:
- Static platform posturography
- Computerized static platform posturography
- Computerized dynamic platform posturography
- Dynamic (or moving) platform posturography

A 2017 clinical practice guideline for benign paroxysmal positional vertigo lists computerized posturography as one of the potential tools to consider for diagnosing this condition (Bhattacharyya, 2017).

U.S. FOOD AND DRUG ADMINISTRATION (FDA)

Devices for testing vestibular dysfunction are captured in the FDA 510(k) database under Product Code LXV (Vestibular Analysis Apparatus), IKN (Electromyograph, Diagnostic) and/or Product Code KHX (Force-Measuring Platforms). Note that devices in product categories LXV and KHX are Class I, 510(k) exempt devices. Devices in product category IKN are class II devices which are also 510(k) exempt. Although many manufacturers have voluntarily submitted product information via the 510(k) process, it is not a requirement. All manufacturers are, however, required to register their establishment and submit a "Device Listing" form; these records can be viewed in the Device Listing Database. See the following Web site for more information: http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfPCD/classification.cfm. (Accessed February 2, 2018)

The foregoing Oxford policy has been adapted from an existing UnitedHealthcare national policy that was researched, developed and approved by UnitedHealthcare Medical Technology Assessment Committee. [*2018T0208O*]

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POLICY HISTORY/REVISION INFORMATION

Date	Action/Description
05/01/2018	- Updated non-coverage rationale; replaced language indicating "[the listed service] is unproven *and* not medically necessary" with "[the listed service] is unproven *and/or* not medically necessary" - Updated supporting information to reflect the most current clinical evidence and references - Archived previous policy version DIAGNOSTIC 008.16 T2