



EFFECTIVE DATE: 10|01|2015

POLICY LAST UPDATED: 04|02|2019

OVERVIEW

Dynamic posturography tests a patient's balance control in situations intended to isolate factors that affect balance in everyday experiences. It provides quantitative information on the degree of imbalance present in an individual but is not intended to diagnosis specific types of balance disorders.

MEDICAL CRITERIA

Not applicable

PRIOR AUTHORIZATION

Not applicable

POLICY STATEMENT

BlueCHiP for Medicare

Dynamic posturography is considered not covered as the evidence is insufficient to determine the effects of the technology on health outcomes.

Commercial Products

Dynamic posturography is considered not medically necessary. There are no studies demonstrating the clinical utility of the test that would lead to changes in management that improve outcomes (eg, symptoms, function). The evidence is insufficient to determine the effects of the technology on health outcomes.

COVERAGE

Benefits may vary between groups and contracts. Please refer to the appropriate Evidence of Coverage or Subscriber Agreement for applicable not medically necessary benefits/coverage.

BACKGROUND

Complaints of imbalance are common in older adults and contribute to the risk of falling in this population. Falls are an important cause of death and disability in this population in the United States. Maintenance of balance is a complex physiologic process, requiring interaction of the vestibular, visual, and proprioceptive/somatosensory system, and central reflex mechanisms. Balance is also influenced by the general health of the patient (ie, muscle tone, strength, range of motion). Therefore, identifying and treating the underlying balance disorder can be difficult. Commonly used balance function tests (eg, electronystagmography, rotational chair tests) attempt to measure the extent and site of a vestibular lesion but do not assess the functional ability to maintain balance.

Dynamic posturography aims to provide quantitative information on a patient's functional ability to maintain balance. The patient, wearing a harness to prevent falls, stands on an enclosed platform surrounded by a visual field. By altering the angle of the platform or shifting the visual field, the test assesses movement coordination and the sensory organization of visual, somatosensory, and vestibular information relevant to postural control. The patient undergoes 6 different testing situations designed to evaluate the vestibular, visual, and proprioceptive/somatosensory components of balance. In general terms, the test measures an individual's balance (as measured by a force platform to calculate the movement of the patient's center of mass) while visual and somatosensory cues are altered. These tests vary by whether eyes are open or closed,

the platform is fixed or sway-referenced, and whether the visual surround is fixed or sway-referenced. Sway-referencing involves making instantaneous computer-aided alterations to the platform or visual surround to coincide with changes in body position produced by sway. The purpose of sway-referencing is to cancel out accurate feedback from somatosensory or visual systems that are normally involved in maintaining balance. In the first 3 components of the test, the support surface is stable, and visual cues are either present, absent, or sway-referenced. In tests 4 to 6, the support surface is sway-referenced to the individual, and visual cues are either present, absent, or sway-referenced. In tests 5 and 6, the only accurate sensory cues available for balance are vestibular cues. Results of computerized dynamic posturography have been used to determine what type of information (ie, visual, vestibular, proprioceptive) can and cannot be used to maintain balance. Dynamic posturography cannot be used to localize the site of a lesion.

Posturography tests a patient's balance control in situations intended to isolate factors that affect balance in everyday experiences. Balance can be rapidly assessed qualitatively by asking the patient to maintain a steady stance on a flat or compressible surface (ie, foam pads) with the eyes open or closed. By closing the eyes, the visual input into balance is eliminated. Use of foam pads eliminates the sensory and proprioceptive cues. Therefore, only vestibular input is available when standing on a foam pad with eyes closed.

For individuals with suspected balance disorders who receive dynamic posturography, the evidence for dynamic posturography includes technical performance studies, cross-sectional comparisons of results in patients with balance disorders and healthy controls, and retrospective case series reporting outcomes for patients assessed with dynamic posturography as part of clinical care. Relevant outcomes are test accuracy and validity, symptoms, and morbid events. There are no generally accepted reference standards for dynamic posturography, which makes it difficult to determine how testing results can be applied in clinical care. There is a lack of evidence on test performance characteristics for clinically important conditions, such as identifying patients who are at risk of falls. There are no studies demonstrating the clinical utility of the test that would lead to changes in management that improve outcomes (eg, symptoms, function). The evidence is insufficient to determine the effects of the technology on health outcomes.

REGULATORY STATUS

In 1985, the NeuroCom EquiTest® (NeuroCom International, Portland, OR; now Clackamas, OR), a dynamic posturography device, was cleared for marketing by the U.S. Food and Drug Administration (FDA) through the 510(k) process. Other dynamic posturography device makers include Vestibular Technologies (Cheyenne, WY) and Medicapteurs (Balma, France). Companies that previously manufactured dynamic posturography devices include Metitur (Jyvaskyla, Finland) and Micromedical Technology (Chatham, IL). FDA product code: LXV.

CODING

The following code is not covered or not medically necessary:

92548 Computerized dynamic posturography

RELATED POLICIES

None

PUBLISHED

Provider Update, June 2019

Provider Update, September 2018

Provider Update, January 2018

Provider Update, January 2017

Provider Update, August 2015

REFERENCES

1. Honaker JA, Converse CM, Shepard NT. Modified head shake computerized dynamic posturography. *Am J Audiol.* Dec 2009;18(2):108-113. PMID 19949235

2. Pang MY, Lam FM, Wong GH, et al. Balance performance in head-shake computerized dynamic posturography: aging effects and test-retest reliability. *Phys Ther.* Feb 2011;91(2):246-253. PMID 21148260
3. Visser JE, Oude Nijhuis LB, Janssen L, et al. Dynamic posturography in Parkinson's disease: diagnostic utility of the "first trial effect". *Neuroscience.* Jun 30 2010;168(2):387-394. PMID 20381589
4. Whitney SL, Roche JL, Marchetti GF, et al. A comparison of accelerometry and center of pressure measures during computerized dynamic posturography: a measure of balance. *Gait Posture.* Apr 2011;33(4):594-599. PMID 21333541
5. Izquierdo-Renau M, Perez-Soriano P, Ribas-Garcia V, et al. Intra and intersession repeatability and reliability of the S-Plate(R) pressure platform. *Gait Posture.* Dec 02 2016;52:224-226. PMID 27936441
6. Fritz NE, Newsome SD, Eloyan A, et al. Longitudinal relationships among posturography and gait measures in multiple sclerosis. *Neurology.* May 19 2015;84(20):2048-2056. PMID 25878185
7. Ferrazzoli D, Fasano A, Maestri R, et al. Balance dysfunction in Parkinson's disease: the role of posturography in developing a rehabilitation program. *Parkinsons Dis.* 2015;2015:520128. PMID 26504611
8. Buatois S, Gueguen R, Gauchard GC, et al. Posturography and risk of recurrent falls in healthy non-institutionalized persons aged over 65. *Gerontology.* 2006;52(6):345-352. PMID 16905886
9. Girardi M, Konrad HR, Amin M, et al. Predicting fall risks in an elderly population: computer dynamic posturography versus electronystagmography test results. *Laryngoscope.* Sep 2001;111(9):1528-1532. PMID 11568601
10. Sinaki M, Lynn SG. Reducing the risk of falls through proprioceptive dynamic posture training in osteoporotic women with kyphotic posturing: a randomized pilot study. *Am J Phys Med Rehabil.* Apr 2002;81(4):241-246. PMID 11953540
11. Whitney SL, Marchetti GF, Schade AI. The relationship between falls history and computerized dynamic posturography in persons with balance and vestibular disorders. *Arch Phys Med Rehabil.* Mar 2006;87(3):402-407. PMID 16500176
12. Ganesan M, Pasha SA, Pal PK, et al. Direction specific preserved limits of stability in early progressive supranuclear palsy: a dynamic posturographic study. *Gait Posture.* Apr 2012;35(4):625-629. PMID 22225854
13. Lee JM, Koh SB, Chae SW, et al. Postural instability and cognitive dysfunction in early Parkinson's disease. *Can J Neurol Sci.* Jul 2012;39(4):473-482. PMID 22728854
14. Pierchala K, Lachowska M, Morawski K, et al. Sensory Organization Test outcomes in young, older and elderly healthy individuals - preliminary results. *Otolaryngol Pol.* Jul 2012;66(4):274-279. PMID 22890532
15. Biggan JR, Melton F, Horvat MA, et al. Increased load computerized dynamic posturography in prefrail and nonfrail community-dwelling older adults. *J Aging Phys Act.* Jan 2014;22(1):96-102. PMID 23416307
16. Lim KB, Lee HJ. Computerized posturographic measurement in elderly women with unilateral knee osteoarthritis. *Ann Rehabil Med.* Oct 2012;36(5):618-626. PMID 23185725
17. Alahmari KA, Marchetti GF, Sparto PJ, et al. Estimating postural control with the balance rehabilitation unit: measurement consistency, accuracy, validity, and comparison with dynamic posturography. *Arch Phys Med Rehabil.* Jan 2014;95(1):65-73. PMID 24076084
18. Teggi R, Caldirola D, Fabiano B, et al. Rehabilitation after acute vestibular disorders. *J Laryngol Otol.* Apr 2009;123(4):397-402. PMID 18549515
19. Badke MB, Miedaner JA, Shea TA, et al. Effects of vestibular and balance rehabilitation on sensory organization and dizziness handicap. *Ann Otol Rhinol Laryngol.* Jan 2005;114(1 Pt 1):48-54. PMID 15697162
20. Badke MB, Shea TA, Miedaner JA, et al. Outcomes after rehabilitation for adults with balance dysfunction. *Arch Phys Med Rehabil.* Feb 2004;85(2):227-233. PMID 14966706
21. Brown KE, Whitney SL, Marchetti GF, et al. Physical therapy for central vestibular dysfunction. *Arch Phys Med Rehabil.* Jan 2006;87(1):76-81. PMID 16401442
22. Hirsch MA, Toole T, Maitland CG, et al. The effects of balance training and high-intensity resistance training on persons with idiopathic Parkinson's disease. *Arch Phys Med Rehabil.* Aug 2003;84(8):1109-1117. PMID 12917847

23. Nocera J, Horvat M, Ray CT. Effects of home-based exercise on postural control and sensory organization in individuals with Parkinson disease. *Parkinsonism Relat Disord*. Dec 2009;15(10):742-745. PMID 19640769
24. Lundin F, Ledin T, Wikkelso C, et al. Postural function in idiopathic normal pressure hydrocephalus before and after shunt surgery: A controlled study using computerized dynamic posturography (EquiTest). *Clin Neurol Neurosurg*. Sep 2013;115(9):1626-1631. PMID 23489444
25. Surgery AAO-HaN. Position Statement: Posturography. 2014; <http://www.entnet.org/Practice/policyPosturography.cfm>. Accessed January, 2017.
26. Bhattacharyya N, Baugh RF, Orvidas L, et al. Clinical practice guideline: benign paroxysmal positional vertigo. *Otolaryngol Head Neck Surg*. Nov 2008;139(5 Suppl 4):S47-81. PMID 18973840

CLICK THE ENVELOPE ICON BELOW TO SUBMIT COMMENTS

This medical policy is made available to you for informational purposes only. It is not a guarantee of payment or a substitute for your medical judgment in the treatment of your patients. Benefits and eligibility are determined by the member's subscriber agreement or member certificate and/or the employer agreement, and those documents will supersede the provisions of this medical policy. For information on member-specific benefits, call the provider call center. If you provide services to a member which are determined to not be medically necessary (or in some cases medically necessary services which are non-covered benefits), you may not charge the member for the services unless you have informed the member and they have agreed in writing in advance to continue with the treatment at their own expense. Please refer to your participation agreement(s) for the applicable provisions. This policy is current at the time of publication; however, medical practices, technology, and knowledge are constantly changing. BCBSRI reserves the right to review and revise this policy for any reason and at any time, with or without notice. Blue Cross & Blue Shield of Rhode Island is an independent licensee of the Blue Cross and Blue Shield Association.

