

EFFECTIVE DATE: 10|01|2005

POLICY LAST UPDATED: 10|15|2013

OVERVIEW

Gait analysis is the quantitative laboratory assessment of coordinated muscle function, typically requiring a dedicated facility and staff and analysis of a video-recorded observation of a patient walking. Gait analysis has been proposed as an aid in surgical planning, primarily for children with cerebral palsy. It is also a potential tool to help plan rehabilitative strategies for ambulatory problems related to cerebral palsy, aging, stroke, spinal cord injury, and other conditions.

PRIOR AUTHORIZATION

Prior authorization is not required.

POLICY STATEMENT

BlueCHiP for Medicare and Commercial:

Gait analysis is covered with a diagnosis of cerebral palsy, for all other indications, it is considered not medically necessary as there is insufficient peer reviewed scientific literature that demonstrates the procedure/service is effective.

MEDICAL CRITERIA

None

BACKGROUND

Gait analysis is the quantitative assessment of coordinated muscle function; evaluation is conducted in a laboratory and typically involves a dedicated facility and staff. A visual assessment of walking is supplemented by video recording. Videos can be observed from several visual planes at slow speed, allowing detection of movements not observable at normal speed. Joint angles and various time-distance variables, including step length, stride length, cadence, and cycle time, can be measured. Electromyography (EMG), assessed during walking, measures timing and intensity of muscle contractions. This calculation allows determination of whether a certain muscle's activity is normal, out of phase, continuous, or clonic.

Kinematics is the term used to describe movements of joints and limbs, such as angular displacement of joints and angular velocities and accelerations of limb segments. The central element of kinematic assessment is some type of marker system that is used to represent anatomic landmarks, which are then visualized and quantitatively assessed during analysis of videotaped observations. Movement data are compiled by computer from cameras oriented in several planes, and the movement data are processed so that the motion of joints and limbs can be assessed in 3 dimensions. The range and direction of motion of a particular joint can be isolated from all the other simultaneous motions that are occurring during walking. Graphic plots of individual joint and limb motion as a function of gait phase can be generated.

Kinetics is the term used to describe those factors that cause or control movement. Evaluating kinetics involves the use of principles of physics and biomechanics to explain the kinematic patterns observed and to generate analyses that describe the forces generated during normal and abnormal gait analysis.

Gait analysis has been proposed as an aid in surgical planning, primarily for cerebral palsy but also for other conditions, such as clubfoot. In addition, gait analysis is being investigated as a means to plan rehabilitative strategies (i.e., orthotic-prosthetic devices) for ambulatory problems related to cerebral palsy, aging, stroke, spinal cord injury, etc.

Gait analysis is the quantitative assessment of coordinated muscle function. For patients with cerebral palsy undergoing surgery for gait disorders, one randomized controlled trial did not find improvement in health outcomes for patients who received gait analysis as part of surgical planning, and one non-randomized controlled trial did not find improvement in utilization parameters. Several studies conducted among patients with cerebral palsy and other conditions suggest that gait analysis recommendations impact treatment decisions, but the impact of these decisions on health outcomes is as yet unknown. Based on input from clinical reviewers, gait analysis, when comprehensive, may be medically necessary for planning prior to surgery in children with gait disorders associated with cerebral palsy. For all other indications, gait analysis is considered not medically necessary due to no proven efficacy.

COVERAGE

Benefits may vary between groups/contracts. Please refer to the Evidence of Coverage or Subscriber Agreement, for applicable services not medically necessary benefit.

CODING

BlueCHiP for Medicare and Commercial:

The following codes are considered medically necessary when filed with the below diagnosis codes:

96000, 96001, 96002, 96003, 96004

Gait Analysis ICD-9-CM codes:

343.0, 343.1, 343.2, 343.3, 343.4, 343.8, 343.9

Gait Analysis ICD-10-CM codes

G80.0, G80.1, G80.2, G80.4, G80.8, G80.9

RELATED POLICIES

None

PUBLISHED

Provider Update	Jan 2014
Provider Update	Feb 2013
Provider Update	Jan 2012
Provider Update	Aug 2011
Provider Update	Sep 2009
Provider Update	Sep 2009

REFERENCES

1. Blue Cross and Blue Shield Association Technology Evaluation Center (TEC). Gait analysis for pediatric cerebral palsy. TEC Assessments 2001; Volume 16, Tab 19.
2. Dobson F, Morris ME, Baker R et al. Gait classification in children with cerebral palsy: a systematic review. Gait Posture 2007; 25(1):140-52.
3. Noonan KJ, Halliday S, Browne R et al. Interobserver variability of gait analysis in patients with cerebral palsy. J Pediatr Orthop 2003; 23(3):279-87.

4. Wren TA, Otsuka NY, Bowen RE et al. Outcomes of lower extremity orthopedic surgery in ambulatory children with cerebral palsy with and without gait analysis: Results of a randomized controlled trial. *Gait Posture* 2012 [Epub ahead of print].
5. Wren TA, Kalisvaart MM, Ghatan CE et al. Effects of preoperative gait analysis on costs and amount of surgery. *J Pediatr Orthop* 2009; 29(6):558-63.
6. Lofterod B, Terjesen T, Skaaret I et al. Preoperative gait analysis has a substantial effect on orthopedic decision making in children with cerebral palsy: comparison between clinical evaluation and gait analysis in 60 patients. *Acta Orthop* 2007; 78(1):74-80.
7. Lofterod B, Terjesen T. Results of treatment when orthopaedic surgeons follow gait-analysis recommendations in children with CP. *Dev Med Child Neurol* 2008; 50(7):503-9.
8. Gough M, Shortland AP. Can clinical gait analysis guide the management of ambulant children with bilateral spastic cerebral palsy? *J Pediatr Orthop* 2008; 28(8):879-83.
9. Wren TA, Gorton GE, Ounpuu S et al. Efficacy of clinical gait analysis: a systematic review. *Gait Posture* 2011; 34(2):149-53.
10. Suda Y, Saitou M, Shibasaki K et al. Gait analysis of patients with neurogenic intermittent claudication. *Spine* 2002; 27(22):2509-13.
11. Sankar WN, Rethlefsen SA, Weiss J et al. The recurrent clubfoot: can gait analysis help us make better preoperative decisions? *Clin Orthop Relat Res* 2009; 467(5):1214-22.
12. Sponsored by the Hospital for Sick Children. Outcomes of orthopedic surgery using gait laboratory versus observational gait analysis in children with cerebral palsy (NCT00419432). Available online at: www.clinicaltrials.gov. Last accessed January, 2013..

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