



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.

Effective Date 3/15/2011
Next Review Date 3/15/2013
Coverage Policy Number 0066

Subject Tilt Table Testing

Table of Contents

Coverage Policy	1
General Background	2
Coding/Billing Information	4
References	5
Policy History	7

Hyperlink to Related Coverage Policies

Cardiac Event Monitors
Chronic Fatigue Syndrome: Diagnostic and Treatment Services

INSTRUCTIONS FOR USE

Coverage Policies are intended to provide guidance in interpreting certain **standard** CIGNA HealthCare benefit plans. Please note, the terms of a customer'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 customer'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 customer'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 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 ©2011 CIGNA

Coverage Policy

CIGNA covers tilt table testing as medically necessary for EITHER of the following indications:

- evaluation of syncope in an individual with or without structural heart disease, when the cause of syncope has not been established following a complete history and physical examination and appropriate diagnostic testing, including a twelve-lead electrocardiogram (ECG), echocardiogram, and formal exercise tolerance testing
- evaluation of an individual in whom the apparent cause of syncope, such as asystole or high-degree atrioventricular (AV) block, has already been established, but results of tilt table testing are needed to determine the treatment plan.

CIGNA does not cover tilt table testing for the diagnosis, treatment or management of ANY of the following because it is considered not medically necessary (this list may not be all-inclusive):

- single syncopal episode, when clinical features support a diagnosis of vasovagal syncope
- syncope in which a specific alternate cause has been established and in which the potential demonstration of neurally mediated syncope would not alter treatment plan
- differentiation of convulsive syncope from epilepsy, in an individual with recurrent loss of consciousness with associated tonic-clonic activity
- evaluation of an individual with unexplained recurrent falls, without a history of symptoms associated with vasovagal syncope

- recurrent near syncope or dizziness presumed to be neurally mediated in origin
 - evaluation of unexplained syncope, when neuropathies or dysautonomias may contribute to symptomatic hypotension
 - follow-up evaluation of therapy to prevent syncope recurrences
 - chronic fatigue syndrome
 - recurrent vertigo
 - recurrent transient ischemic attacks
-

General Background

Syncope, a transient loss of consciousness, is a common clinical problem and accounts for 3.5% of all emergency room visits and one to six percent of all hospital admissions in the United States each year. Neurocardiogenic syncope is the most common type of syncope. Also referred to as neurally mediated, vasodepressor and vasovagal syncope, neurocardiogenic syncope is characterized by a sudden failure of the autonomic nervous system to maintain blood pressure, and sometimes heart rate, at a level that adequately maintains cerebral perfusion and consciousness. Structural heart disease and ischemia are also frequent causes of syncope. Additional, less frequent causes of syncope include long QT syndrome, Wolff-Parkinson-White syndrome, and conversion reactions (Grubb, 2005; Strickberger, et al., 2006).

The cause of syncope may be accurately determined by a detailed history and physical exam, although the cause remains unexplained in 40% of episodes. In some patients, the hemodynamic response to standing may be sufficient to identify postural orthostatic tachycardia syndrome or orthostatic hypotension, which may be treated without further testing. An electrocardiogram (ECG) provides important information about the heart rhythm and atrioventricular (AV) conduction. An echocardiogram may be helpful if a diagnosis is not provided by history, physical examination and ECG, or if underlying heart disease is suspected. Exercise-tolerance testing, Holter monitoring, electrophysiological testing and loop-event monitoring may be used. A diagnosis of neurocardiogenic syncope is considered when there is no structural heart disease and the ECG is normal. Although syncope is not associated with excess mortality in the absence of underlying heart disease, physical harm may occur with recurrent syncope. Determining the origin of syncope can be challenging, however. Tilt table testing may be considered for a select subset of individuals when the diagnosis remains uncertain (Bloomfield, et al., 1999; Goldschlager, et al., 2003; Kapoor, 2002; Strickberger, et al., 2006).

Tilt table testing is performed by using a tilting table with a footboard. The patient rests in the supine position for 20–45 minutes before beginning the test. At least three ECG leads record simultaneously during the study, and continuous blood pressure readings are recorded. The table rapidly moves to an upright position (60–90°). A tilt test response is considered positive for vasovagal syncope if sudden drops in heart rate, blood pressure or both are induced during the test in association with syncope or near syncope. Intravenous medications that can cause venous pooling or increase adrenergic stimulation, such as isoproterenol, may be used to induce a positive test result if syncope is not produced by tilt table testing alone (Lamarre-Cliché, et al., 2001).

Tilt table testing has not been evaluated in randomized controlled trials, and the clinical utility of the procedure has not been definitively established. The pretest probability of neurocardiogenic syncope is high in a patient without evidence of ischemia or structural heart disease, and even if the test is negative, neurocardiogenic syncope remains the most likely diagnosis. The results of testing therefore contribute little to establishing a diagnosis (Strickberger, et al., 2006). Despite the lack of strong evidence, tilt table testing has become an established procedure in the clinical evaluation of patients with syncope when the cause cannot be established based on a detailed history and physical examination and routine diagnostic testing. The procedure is also widely used when the cause of syncope has been established but the results of tilt table testing will contribute to establishing appropriate treatment. Numerous other applications for tilt table testing have emerged, including evaluation of near syncope, frequent falls, evaluation of therapy to prevent syncope recurrence, and evaluation of syncope related to neuropathies or dysautonomias. Other emerging conditions for which tilt table testing has been proposed include evaluation of chronic fatigue syndrome to determine if neurally mediated hypotension and bradycardia are contributing factors, and evaluation of recurrent vertigo and recurrent transient ischemic attacks. The use of tilt table testing for these indications has not gained widespread acceptance, and the diagnostic utility of tilt table testing to evaluate these conditions has not been established in the published medical literature.

Professional Societies/Organizations

European Society of Cardiology (ESC) Task Force for the Diagnosis and Management of Syncope

ESC guidelines for the management of syncope, updated in 2009, include recommendations for tilt table testing. The guideline states that in most studies, the main indication for tilt testing has been to confirm a diagnosis of reflex syncope in patients in whom this diagnosis is suspected but not confirmed by initial evaluation. Tilt testing is usually not needed in patients whose reflex syncope is already diagnosed by clinical history, and in patients with single or rare syncope, unless special circumstances exist (e.g., injury, anxiety, occupational implications).

Indications and levels of evidence are classified in the ESC guideline as follows:

- Class I: Evidence and/or general agreement that a given treatment or procedure is beneficial, useful, effective.
 - Class II: Conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of the given treatment or procedure
 - IIa: Weight of evidence/opinion is in favor of usefulness/efficacy.
 - IIb: Usefulness/efficacy is less well established by evidence/opinion.
 - Class III: Evidence or general agreement that the given treatment or procedure is not useful/effective and in some cases may be harmful
-
- Level of evidence A: Data derived from multiple randomized clinical trials or meta-analyses
 - Level of evidence B: Data derived from a single randomized clinical trial or large non-randomized studies
 - Level of evidence C: Consensus of opinion of the experts and/or small studies, retrospective studies, registries.

The ESC guideline includes the following recommendations:

Class I, level of evidence B: Tilt testing is indicated in the case of an unexplained single syncopal episode in high risk-settings (e.g., occurrence of or potential risk of physical injury or with occupational implications), or recurrent episodes in the absence of organic heart disease, or in the presence of organic heart disease, after cardiac causes of syncope have been excluded.

Class I, level of evidence C: Tilt testing is indicated when it is of clinical value to demonstrate susceptibility to reflex syncope to the patient.

Class IIa, level of evidence C: Tilt testing should be considered to discriminate between reflex and orthostatic hypotension

Class IIb, level of evidence C

- Tilt testing may be considered for differentiating syncope with jerking movements from epilepsy
- Tilt testing may be indicated for evaluating patients with recurrent unexplained falls
- Tilt testing may be indicated for evaluating patients with frequent syncope and psychiatric disease

Class III, level of evidence B: Tilt testing is not recommended for assessment of treatment

Class III, level of evidence C: Isoproterenol tilt testing is contraindicated in patients with ischemic heart disease

American Heart Association (AHA)/American College of Cardiology Foundation (ACCF) Scientific Statement

An AHA/ACCF Scientific Statement on the Evaluation of Syncope (Strickberger, et al., 2006) states that tilt table testing is used as an aid in establishing the diagnosis of neurocardiogenic syncope, but serious questions about the sensitivity, specificity, diagnostic yield and day-to-day reproducibility of the test exist. The reported sensitivity and specificity of tilt table testing depend on the technique used. The sensitivity ranges from 26% to 80%, and the specificity is approximately 90%. In patients with a negative evaluation (i.e., no evidence of ischemia or cardiac structural abnormalities), the pretest probability that the diagnosis is neurocardiogenic syncope is high. Tilt table testing therefore contributes little to establishing the diagnosis. In a patient with a normal evaluation

and a negative tilt table test, neurocardiogenic syncope remains the most likely diagnosis. The scientific statement also states that it may be more important to rule out other causes of syncope than it is to perform a tilt table test, since the risk of recurrent syncope in a patient with a normal cardiac evaluation and syncope is similar regardless of whether the tilt table test is positive or negative.

American College of Cardiology (ACC) Expert Consensus Document

The ACC Expert Consensus Document, Tilt Table Testing for Assessing Syncope (Benditt, et al., 1996, ACC website, 2010), states that there is general agreement that tilt table testing is warranted for the following indications:

- recurrent syncope or single syncopal episode of unknown cause that resulted in injury or occurred in a high-risk setting (e.g., commercial vehicle driver, machine operator, pilot, commercial painter, surgeon, window-washer, competitive athlete), when a thorough history and physical, 12-lead electrocardiogram, echocardiogram and formal exercise tolerance testing demonstrate no evidence of structural cardiovascular disease
- recurrent syncope or single syncopal episode of unknown cause that resulted in injury or occurred in a high-risk setting in patient with known structural cardiovascular disease, when vasovagal episode is suspected and other causes of syncope have been excluded by appropriate testing
- when apparent cause of syncope, such as asystole or high-degree atrioventricular (AV) block, has been established, but results of the tilt table test may impact the treatment plan
- recurrent exercise-induced syncope, when a thorough history and physical, 12-lead electrocardiogram, echocardiogram and formal exercise tolerance testing demonstrate no evidence of organic heart disease

The ACC document classifies the following as indications for which reasonable differences of opinion exist regarding the utility of tilt table testing:

- differentiating convulsive syncope from seizures
- assessing recurrent dizziness or presyncope
- evaluating unexplained syncope in the setting of peripheral neuropathies or dysautonomias
- follow-up evaluation to assess therapy of neurally mediated syncope

The following indications are listed in the ACC expert consensus document as conditions for which tilt table testing is not warranted:

- patients who have experienced a single syncopal episode, without injury and not in a high-risk setting, in which clinical features clearly support diagnosis of vasovagal syncope
- syncope in which a specific alternate cause has been established and in which the potential demonstration of neurally mediated syncope would not alter the treatment plan.

Summary

Although tilt table testing has not been evaluated in randomized controlled trials, it has become an established diagnostic tool in the evaluation of patients with syncope when the cause has not been established by appropriate testing as indicated, including a thorough history and physical examination, twelve-lead electrocardiogram, echocardiogram, and formal exercise tolerance testing. When positive for neurocardiogenic syncope, a tilt table test may guide treatment with appropriate medication and, when negative, evaluation of other possible causes may be explored when indicated.

Tilt table testing may also be used in cases where an apparent cause of syncope such as asystole or high-degree atrioventricular (AV) block is established but the results may alter the treatment plan, as well as in cases of recurrent exercise-induced syncope. Tilt table testing has been proposed for numerous other indications. Use of tilt table testing for these additional indications has not gained widespread acceptance, and the clinical utility of tilt table testing for the evaluation of these indications has not been established in the published medical literature.

Coding/Billing Information

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

Covered when medically necessary:

CPT* Codes	Description
93660	Evaluation of cardiovascular function with tilt table evaluation, with continuous ECG monitoring and intermittent blood pressure monitoring, with or without pharmacological intervention

ICD-9-CM Diagnosis Codes	Description
780.2	Syncope and collapse

Experimental/Investigational/Unproven/Not Covered:

ICD-9-CM Diagnosis Codes	Description
435.0-435.9	Transient cerebral ischemia
780.71	Chronic fatigue syndrome
780.4	Dizziness and giddiness
435.9	Unspecified transient cerebral ischemia

***Current Procedural Terminology (CPT®) © 2010 American Medical Association: Chicago, IL.**

References

1. Benditt DG, Ferguson DW, Grubb BP, Kapoor WN, Kugler J, Lerman BB. ACC expert consensus document: tilt table testing for assessing syncope. J Am Coll Cardiol. 1996 Jul 28;(1):263-75.
2. Benditt DG, Sutton R. Tilt-table testing in the evaluation of syncope. J Cardiovasc Electrophysiol. 2005 Mar;16(3):356-8.
3. Bloomfield DM, Sheldon R, Grubb BP, Calkins H, Sutton R. Putting it together: a new treatment algorithm for vasovagal syncope and related disorders. Am J Cardiol. 1999 Oct 21;84(8A):33Q-39Q.
4. Chen-Scarabelli C, Scarabelli TM. Neurocardiogenic syncope. BMJ. 2004 Aug 7;329(7461):336-41.
5. Costantino G, Perego F, Dipaola F, Borella M, Galli A, Cantoni G, et al., on behalf of the STePS Investigators. Short- and long-term prognosis of syncope, risk factors, and role of hospital admission: results from the STePS (Short-Term Prognosis of Syncope) study. J Am Coll Cardiol. 2008 Jan 22;51(3):284-7.
6. Faddis MN, Rich, MW. Pacing interventions for falls and syncope in the elderly. Clin Geriatr Med. 2002 May;18(2):279-94.
7. Garcia-Civera R, Ruiz-Granell R, Morell-Cabedo S, Sanjuan-Manez R, Perez-Alcala F, et al. Selective use of diagnostic tests inpatients with syncope of unknown cause. J Am Coll Cardiol. 2003 Mar 5;41(5):787-90.
8. Gatzoulis K, Sideris S, Theopistou A, Sotiropoulos H, Stefanadis C, Toutouzas P. Long-term outcome of patients with recurrent syncope of unknown cause in the absence of organic heart disease and relation to results of baseline tilt table testing. Am J Cardiol. 2003 Oct 1;92(7):876-9.

9. Goldschlager N, Epstein AE, Grubb BP, Olshansky B, Prystowsky E, Roberts WC, Scheinman MM; Practice Guidelines Subcommittee, North American Society of Pacing and Electrophysiology. Etiologic considerations in the patient with syncope and an apparently normal heart. *Arch Intern Med*. 2003 Jan 27;163(2):151-62.
10. Grubb BP. Clinical practice. Neurocardiogenic syncope. *N Engl J Med*. 2005 Mar 10; 352(10):1004-10.
11. Grubb BP. Neurocardiogenic syncope and related disorders of orthostatic intolerance. *Circulation*. 2005 Jun 7;111(22):2997-3006.
12. Kapoor WN. Current evaluation and management of syncope. *Circulation*. 2002 Sep 24;106(13):1606-9.
13. Krediet CT, van Dijk N, Linzer M, van Lieshout JJ, Wieling W. Management of vasovagal syncope. *Circulation*. 2002 Sep 24;106(13):1684-9.
14. Lamarre-Cliché M, Cusson J. The fainting patient: value of the head-upright tilt table test in adult patients with orthostatic intolerance. *CMAJ*. 2001 Feb 6;164(3):372-6.
15. Libby: Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine, 8th ed. Saunders, an imprint of Elsevier; 2007.
16. Miller TH, Kruse JE. Evaluation of syncope. *Am Fam Physician*. 2005 Oct 15;72(8):1492-500. Review. Erratum in: *Am Fam Physician*. 2006 Mar 1;73(5):776.
17. Naschitz JE, Rosner I, Rozenbaum M, Gaitini L, Bistrizki I, Zuckerman E, et al. The capnography head-up tilt test for evaluation of chronic fatigue syndrome. *Semin Arthritis Rheum*. 2000 Oct;30(2):79-86.
18. Nashitz JE, Sabo E, Naschitz S, Shaviv N, Rosner I, Rozenbaum M, et al. Hemodynamic instability in chronic fatigue syndrome: indices and diagnostic significance. *Semin Arthritis Rheum*. 2001 Dec;31(3):199-208.
19. No authors listed. Guidelines for the diagnosis and management of syncope (version 2009). Task force for the diagnosis and management of syncope of the European Society of Cardiology (ESC). Developed in collaboration with European Heart Rhythm Association (EHRA), Heart Failure Association (HFA), and Heart Rhythm Society (HRS). Accessed Jan 25, 2010. Available at URL address: <http://www.escardio.org/guidelines-surveys/esc-guidelines/GuidelinesDocuments/guidelines-syncope-FT.pdf>
20. Passman R, Horvath G, Thomas J, Kruse J, Shah A, Goldberger J, Kadish A. Clinical spectrum and prevalence of neurologic events provoked by tilt table testing. *Arch Intern Med*. 2003 Sep 8;163(16):1945-8.
21. Poole J, Herrell R, Ashton S, Goldberg J, Buchwald D. Results of isoproterenol tilt table testing in monozygotic twins discordant for chronic fatigue syndrome. *Arch Intern Med*. 2000 Dec 11-25;160(22):3461-8.
22. Sheldon R. Tilt testing for syncope: a reappraisal. *Curr Opin Cardiol*. 2005 Jan;20(1):38-41.
23. Strickberger SA, Benson DW, Biaggioni I, Callans DJ, Cohen MI, Ellenbogen KA, Epstein AE, et al. AHA/ACCF scientific statement on the evaluation of syncope: from the American Heart Association Councils on Clinical Cardiology, Cardiovascular Nursing, Cardiovascular Disease in the Young, and Stroke, and the Quality of Care and Outcomes Research Interdisciplinary Working Group; and the American College of Cardiology Foundation In Collaboration With the Heart Rhythm Society. *J Am Coll Cardiol*. 2006 Jan 17;47(2):473-84.
24. Tan MP, Parry SW. Vasovagal syncope in the older patient. *J Am Coll Cardiol*. 2008 Feb 12;51(6):599-606.

25. Topol EJ: Textbook of Cardiovascular Medicine, 3rd ed. Lippincott Williams & Wilkins; 2007.
26. van Dijk N, Boer MC, De Santo T, Gropvale N, Aerts AJJ. Daily, weekly, monthly, and seasonal patterns in the occurrence of vasovagal syncope in an older population. Europace. 2007 Sep;9(9):823-8. Epub 2007 Jun 4.

Policy History

<u>Pre-Merger Organizations</u>	<u>Last Review Date</u>	<u>Policy Number</u>	<u>Title</u>
CIGNA HealthCare	03/15/2008	0066	Tilt Table Testing

“CIGNA”, “CIGNA HealthCare” and the “Tree of Life” logo are registered service marks of CIGNA Intellectual Property, Inc., licensed for use by CIGNA Corporation and its operating subsidiaries. All products and services are provided by such operating subsidiaries and not by CIGNA Corporation. Such operating subsidiaries include Connecticut General Life Insurance Company, CIGNA Health and Life Insurance Company, CIGNA Behavioral Health, Inc., CIGNA Health Management, Inc., and HMO or service company subsidiaries of CIGNA Health Corporation and CIGNA Dental Health, Inc. In Arizona, HMO plans are offered by CIGNA HealthCare of Arizona, Inc. In California, HMO plans are offered by CIGNA HealthCare of California, Inc. In Connecticut, HMO plans are offered by CIGNA HealthCare of Connecticut, Inc. In North Carolina, HMO plans are offered by CIGNA HealthCare of North Carolina, Inc. In Virginia, HMO plans are offered by CIGNA HealthCare Mid-Atlantic, Inc. All other medical plans in these states are insured or administered by Connecticut General Life Insurance Company or CIGNA Health and Life Insurance Company.