Medical Coverage Policy

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Coverage Policy Number 0066

Tilt Table Testing

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Related Coverage Resources

Autonomic Nerve Function Testing
Transthoracic Echocardiography in Adults

INSTRUCTIONS FOR USE
The following Coverage Policy applies to health benefit plans administered by Cigna Companies. Certain Cigna Companies and/or lines of business only provide utilization review services to clients and do not make coverage determinations. References to standard benefit plan language and coverage determinations do not apply to those clients. Coverage Policies are intended to provide guidance in interpreting certain standard benefit plans administered by Cigna Companies. Please note, the terms of a customer's particular benefit plan document [Group Service Agreement, 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 supersedes 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. In certain markets, delegated vendor guidelines may be used to support medical necessity and other coverage determinations.

Overview

This Coverage Policy addresses tilt table testing used as a diagnostic tool in the evaluation of select patients with syncope.

Coverage Policy

Tilt table testing with or without the administration of provocative agents (e.g., isoproterenol) is considered medically necessary for the evaluation of syncope for ANY of the following indications:

- 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
- individual in whom the suspected 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
- differentiation of convulsive syncope from epilepsy

Tilt table testing is considered not medically necessary for ANY other indication including the following:

- 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
- 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 is a syndrome in which a transient loss of consciousness (TLOC) is triggered by a period of inadequate oxygen delivery to the brain, most frequently caused by a period of systemic hypotension. The differential diagnosis of syncope most often involves vascular and cardiac causes. Vascular causes of syncope, particularly reflex-mediated syncope and orthostatic hypotension, are the most common causes and account for at least one third of all syncopal episodes. Causes of reflex-mediated syncope include carotid sinus hypersensitivity, neurally mediated syncope (common faint, vasodepressor, neurocardiogenic, vasovagal), glossopharyngeal syncope and situational (acute hemorrhage, cough, defecation, laugh, micturition, sneeze) syncope. Syncope due to orthostatic hypotension can be associated with primary autonomic failure, secondary autonomic failure (diabetes, amyloidosis, uremia, spinal cord injuries), drug-induced orthostatic hypotension or volume depletion (Calkins and Zipes, 2019; Benditt, 2019; Benditt and Adkisson, 2013).

Cardiac causes of syncope, particularly tachyarrhythmias and bradyarrhythmias, are the second most common causes of syncope and account for 10% to 20% of all syncopal episodes. Anatomic causes of syncope include obstruction to blood flow, such as massive pulmonary embolism, atrial myxoma, or aortic stenosis (Calkins and Zipes, 2019; Benditt, 2019).

The evaluation of syncope begins with a careful history, physical examination, supine and upright blood pressure, and a 12-lead electrocardiogram (ECG). Additional testing may be needed in select patients, which can include carotid sinus massage, echocardiography, ECG monitoring, and tilt-table testing. The cause of syncope may be accurately determined in a majority of patients by a detailed history and physical exam. 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 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 also be used. A diagnosis of reflex (neurally-mediated) 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. The clinician must consider and exclude conditions that mimic syncope but are not true syncope. The most common of these conditions are seizures, sleep disturbances, accidental falls, and some psychiatric conditions (e.g., psychogenic nonepileptic seizures and pseudoseizures). Tilt table testing may be considered for a select subset of individuals when the diagnosis remains uncertain (Calkins and Zipes, 2019; Benditt, 2019; Brignole, et al., 2018; Strickberger, et al., 2006; Goldschlager, et al., 2003; Kapoor, 2002).

Postural orthostatic tachycardia syndrome (POTS) is a multisystem disorder of the autonomic nervous system, defined as the presence of symptoms of orthostatic intolerance for more than six months, accompanied by a heart rate increase of more than 30 beats per minute within ten minutes of standing or upright tilt, in the absence of orthostatic hypotension. The syndrome must occur in the absence of prolonged bed rest, medications that impair autonomic regulation (e.g., diuretics, vasodilators, sympatholytics or certain antidepressants) or other conditions that may cause tachycardia (e.g., dehydration, anemia, or hyperthyroidism). The etiology of POTS is

not clear; and may be heterogeneous. Symptoms of POTS include lightheadedness, shortness of breath, palpitations, tremulousness, chest discomfort, headache, visual disturbances, mental clouding and nausea. Syncope is relatively unusual, but does occur in about 40% of patients. The diagnosis of POTS is established from patient history and head-up tilt testing which demonstrates a heart rate increase of > 30 beats per minute (bpm) over baseline or > 120 bpm (Kaufmann and Freeman, 2018; Nwazue and Raj, 2013).

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. Provocative agents are 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 (Benditt, 2019; Lamarre-Cliché, et al., 2001).

Literature Review
Evidence evaluating tilt table testing is primarily in the form of prospective case series, observational studies, retrospective reviews and review articles (Joo, et al., 2018; Furukawa, 2017; Saal, et al., 2016; Forleo, et al., 2013). The pretest probability of reflex (neurally-mediated) syncope is high in a patient without evidence of ischemia or structural heart disease, and even if the test is negative, reflex syncope remains the most likely diagnosis. The sensitivity of tilt table testing can be increased, along with an associated fall in specificity, by the use of longer tilt durations, steeper tilt angles, and provocative agents such as isoproterenol or nitroglycerin (Calkins and Zipes, 2019; 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. Tilt table testing is used when the cause of syncope cannot be established based on a detailed history, physical examination and routine diagnostic testing. It is also used to discriminate between suspected reflex syncope and orthostatic hypotension syncope, to evaluate for postural tachycardia syndrome, to differentiate between convulsive syncope and epilepsy, or to establish a diagnosis of psychogenic nonepileptic seizures. The procedure may also be 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 demonstrated in the published medical literature.

Professional Societies/Organizations
American College of Cardiology (ACC)/American Heart Association (AHA)/Heart Rhythm Society (HRS):
In 2017, the ACC/AHA/HRS issued guidelines for evaluating and managing patients with syncope. These guidelines included the following recommendations for the use of tilt table testing (Shen, et al., 2017):

1. If the diagnosis is unclear after initial evaluation, tilt-table testing can be useful for patients with suspected vasovagal syncope (VVS).
2. Tilt-table testing can be useful for patients with syncope and suspected delayed orthostatic hypotension (OH) when initial evaluation is not diagnostic.
3. Tilt-table testing is reasonable to distinguish convulsive syncope from epilepsy in selected patients.
4. Tilt-table testing is reasonable to establish a diagnosis of pseudosyncope.
5. Tilt-table testing is not recommended to predict a response to medical treatments for VVS.

The guidelines also stated that exercise stress testing can be useful to establish the cause of syncope in selected patients who experience syncope or presyncope during exertion (Shen, et al., 2017).

Centers for Medicare & Medicaid Services (CMS)

- National Coverage Determinations (NCD): No NCD found
- Local Coverage Determination (LCD): No LCD found

Use Outside the U.S.

European Society of Cardiology (ESC) Task Force for the Diagnosis and Management of Syncope: ESC 2018 guidelines for the diagnosis and management of syncope, included recommendations for tilt table testing. The guidelines stated that tilt table testing can be considered to confirm a diagnosis of reflex syncope in patients in whom this diagnosis is suspected but not confirmed by initial evaluation, for the assessment of autonomic failure, especially for the reproduction of delayed OH (which could not be detected by active standing because of its delayed onset) and postural orthostatic tachycardia syndrome (POTS). Tilt testing may be helpful in separating syncope from psychogenic pseudosyncope (PPS) and separating syncope with abnormal movements from epilepsy. Tilt testing has limited value in assessing treatment efficacy. However, tilt testing is widely accepted as a useful tool to demonstrate susceptibility of the patient to reflex syncope, especially a hypotensive (vasodepressive) tendency, and thereby to initiate treatment (Brignole, et al., 2018).

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 Medically Necessary when criteria in the applicable policy statements listed above are met:

Note: Code 93660 should not be billed to describe autonomic nerve testing

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-10-CM Diagnosis Codes	Description
R55	Syncope and collapse

Considered Experimental/Investigational/Unproven:

ICD-10-CM Diagnosis Codes	Description
	All other codes

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