

# MEDICAL POLICY

<b>SUBJECT: SLEEP STUDIES</b>	<b>EFFECTIVE DATE: 06/01/00</b> <b>REVISED DATE: 09/19/01, 11/21/02, 10/15/03, 08/19/04, 07/21/05, 04/20/06, 02/15/07, 03/20/08, 05/28/09, 03/18/10, 04/21/11, 03/15/12, 10/17/13, 07/17/14</b>
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<ul style="list-style-type: none"><li>• <i>If the member's subscriber contract excludes coverage for a specific service it is not covered under that contract. In such cases, medical policy criteria are not applied.</i></li><li>• <i>Medical policies apply to commercial and Medicaid products only when a contract benefit for the specific service exists.</i></li><li>• <i>Medical policies only apply to Medicare products when a contract benefit exists and where there are no National or Local Medicare coverage decisions for the specific service.</i></li></ul>	

## **POLICY STATEMENT:**

*Refer to Policy Guideline I for information regarding signs and symptoms of obstructive sleep apnea (OSA).*

### **I. Polysomnography (PSG)**

- A. Based upon our criteria and assessment of the peer-reviewed literature, polysomnography (PSG) has been medically proven to be effective and therefore **medically appropriate** for the evaluation of sleep disorders when performed for the following indications:
1. diagnosing sleep-related breathing disorders;
  2. continuous positive airway pressure (CPAP) titration in patients with sleep-related breathing disorders;
  3. to assess the quality and quantity of night-time sleep in a patient with suspected narcolepsy; PSG is performed the night prior to the Multiple Sleep Latency Test (MSLT);
  4. preoperative clinical assessment to document the presence of obstructive sleep apnea in patients prior to surgical procedures, such as uvulopalatopharyngoplasty (UPPP) or mandibular-maxillary advancement (MMA); and
  5. infants and children under seven years of age whose medical records document one or more of the following:
    - a. observations of gross or subtle snoring, cessation in breathing, difficulty breathing, and sleep disturbances. Snoring may be of a continuous nature rather than periodic as in adults; or
    - b. patients exhibiting symptoms associated with cardio-pulmonary, growth, behavior and/or developmental problems that are suspected to be caused by upper airway obstruction.
- B. Based upon our criteria and assessment of the peer-reviewed literature, polysomnography has been medically proven to be effective and, therefore, **medically appropriate** for the evaluation of sleep disorders when performed for the following indications when diagnostic questions remain after completion of the standard evaluation, when treatment decisions will be made based on the results of the study, and when the symptoms are of a severity to place the individual at risk for serious complications or injury:
1. patients with neuromuscular disorders and sleep-related symptoms;
  2. assistance with the diagnosis of paroxysmal arousals or other sleep disturbances thought to be seizure related;
  3. sleep-related epilepsy that does not respond to conventional therapy;
  4. infant or child under the age of seven years who is being considered for removal of a tracheostomy;
  5. an infant or child under the age of seven years with suspected Ondine's Curse (Central Alveolar Hypoventilation Syndrome) in which the patient stops breathing when they sleep;
  6. unexplained hypersomnolence;
  7. complicated/injurious parasomnias;
  8. periodic limb movement disorder; and
  9. central nervous system (CNS) hypoventilation.
- C. Based upon our criteria and assessment of the peer-reviewed literature, polysomnography does not improve patient outcomes and is **not medically necessary** for the following indications:
1. the diagnosis of chronic lung disease;

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2. cases of typical uncomplicated and non-injurious parasomnias (e.g., somnambulism, pavor nocturnus, or nocturnal seizures) when the diagnosis is clearly delineated;
3. patients with epilepsy who have no specific complaints consistent with a sleep disorder;
4. the diagnosis or treatment of restless leg syndrome, except where uncertainty exists in the diagnosis;
5. the diagnosis of circadian rhythm sleep disorders;
6. establishment of a diagnosis of depression;
7. determining risk of sudden infant death syndrome (SIDS);
8. the diagnosis of bruxism (grinding of teeth);
9. the diagnosis of drug dependency;
10. insomnia (inability to sleep);
11. night terrors/dream anxiety;
12. migraine headaches; or
13. male impotence, unless:
  - a. a nocturnal penile tumescence test is positive, or
  - b. brachiopenile impotence is suspected.

## II. Follow-up/ Repeat Polysomnography

Based upon our criteria and assessment of peer-reviewed literature, follow-up polysomnography is considered **medically appropriate** in the following circumstances:

- A. when an inadequate prior medically necessary PSG that was appropriately prepared and performed was not diagnostic due to limited sleep time or other variable (not an inconclusive or negative exam);
- B. for the re-evaluation of a patient diagnosed with OSA with adequate treatment and persistent symptoms;
- C. for a patient with a current OSA diagnosis seeking to discontinue positive airway pressure (PAP/CPAP/APAP) therapy as a result of expected symptom improvement after treatment;
- D. to assess treatment response after surgical intervention for OSA or after initiation of an oral appliance to ensure therapeutic benefit;
- E. after a substantial weight loss to determine if CPAP is still needed at the previously titrated pressures;
- F. after a substantial weight gain has occurred in the patient who was previously treated successfully with CPAP/APAP and who again is symptomatic, to assess whether pressure adjustments are needed.
- G. to re-evaluate a pediatric patient diagnosed with OSA after adequate treatment with:
  1. tonsillectomy and/or adenoidectomy or who is compliant with PAP therapy due to failure of or contraindication(s) to tonsillectomy and/or adenoidectomy and has continued signs and symptoms of OSA (including disturbed or restless sleep); or
  2. has a high risk of having persistent OSA after tonsillectomy or adenoidectomy.

## III. Ambulatory or home/portable sleep studies:

- A. Based upon our criteria and assessment of peer-reviewed literature, an ambulatory or home/portable sleep study (HST) using a FDA approved type III device is **medically appropriate** in carefully selected adult patients, when ordered and interpreted by a sleep medicine specialist, in the following circumstances:
  1. Initial diagnostic testing:
    - a. The patients symptoms demonstrate a high pre-test probability of moderate to severe obstructive sleep apnea (refer to Policy Guideline I): and
    - b. Persistent symptoms of OSA have been present for greater than 4 weeks in duration, and
    - c. There is an absence of significant comorbidities that would impair the sensitivity and specificity of the HST, and
    - d. The patient is developmentally and functionally capable of following instructions for the HST, and
    - e. A comprehensive sleep evaluation with an established diagnostic tool (e.g., Epworth Sleepiness Scale, Berlin questionnaire) has been completed.

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2. Repeat diagnostic testing:
  - a. A patient with a current diagnosis of OSA who is seeking to discontinue PAP therapy as a result of expected symptom improvement after:
    - i. PAP therapy has been successful following failure of non-CPAP treatment (e.g., positional change, oral airway device), or
    - ii. Patient has undergone upper airway surgery, significant weight loss, gastric bypass w/ significant weight loss (reduction in body weight/mass to a BMI of less than 30), or
  - b. A previous inadequate HST due to limited sleep time or other variable after a multi-night attempt to complete an initial study; not an inconclusive or negative exam.

- B. Ambulatory sleep studies are limited to a maximum of two nights of testing. If the study results remain inconclusive, after two nights of testing, referral to a sleep facility for additional testing may be appropriate.
- C. Based upon our criteria and the lack of peer-reviewed literature supporting its efficacy, an ambulatory or home/portable sleep study is considered **investigational** in pediatric patients.
- D. Based on our criteria and assessment of peer-reviewed literature, use of a home sleep study with a type II portable monitoring device has not been proven to be medically effective in diagnosing OSA and is therefore considered **investigational**.
- E. Based on our criteria and assessment of peer-reviewed literature, use of a home sleep study with a type IV portable monitoring device does not improve patient outcomes and is considered **not medically necessary** when used in the diagnosis of OSA.

#### IV. Multiple Sleep Latency Test (MSLT)/ Maintenance of Wakefulness Test (MWT)

- A. Based upon our criteria and assessment of peer-reviewed literature, an initial *Multiple Sleep Latency Test (MSLT)/ Maintenance of Wakefulness Test (MWT)* is considered **medically appropriate** as a diagnostic tool to evaluate:
  1. Suspected narcolepsy or idiopathic hypersomnia, as evidenced by:
    - a. Excessive sleepiness, and
    - b. Recurrent daytime naps or lapses into sleep daily for at least 3 months, and
    - c. Cataplexy – the sudden loss of muscle tone occurring in association with intense emotion (e.g., laughing or crying), or
    - d. Sleep paralysis, hypnagogic hallucinations, hypnopompic hallucinations, automatic behaviors, or disrupted major sleep episodes, or
    - e. Idiopathic hypersomnia, and
  2. The MSLT/MWT should immediately follow a PSG that was negative for OSA, where total sleep time is greater than six hours (however, it should not follow a split-night study), and
  3. The patient has not used stimulants, stimulant-like medications, sedatives, or REM suppressing medications for two weeks prior to the test, and
  4. A comprehensive sleep evaluation including established sleep disorder tools and/or questionnaires have been performed, and
  5. If OSA is suspected, a diagnostic study has been performed, and
  6. If OSA is present, therapy has been initiated and has resolved the patients symptoms, and
  7. An adequate sleep time is regularly achieved if patient is a shift worker.
- B. Repeat testing may be necessary when initial MSLT/MWT results are negative, ambiguous, or did not provide polygraphic confirmation after a properly performed test and the clinical history strongly indicates a diagnosis of narcolepsy or idiopathic hypersomnias or when the response to treatment needs to be ascertained.

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V. Nocturnal pulse oximetry:

- A. Based upon our criteria and assessment of the peer-reviewed literature, nocturnal pulse oximetry is considered **medically appropriate** for follow-up studies when a diagnosis has been established by standard polysomnography, therapy (CPAP, BiPAP, APAP, or oxygen) has been initiated, and when ordered by a pulmonologist or sleep medicine specialist. The intent is most often to evaluate response to therapy.
- B. Based upon our criteria and assessment of the peer-reviewed literature, nocturnal pulse oximetry is **not medically necessary**, as a diagnostic tool for any other OSA indication. However, nocturnal pulse oximetry is indicated when determining the proper oxygen dose for patients with chronic pulmonary disease.

VI. Split-Night Study

Based upon our criteria and assessment of the peer-reviewed literature, a split-night study is considered **medically appropriate** when:

- A. the patient has signs and symptoms suggestive of OSA that have persisted for at least 4 weeks,
- B. there is the presence of significant comorbidities/conditions that impair the sensitivity and specificity or effectiveness of an HST and auto-titrating CPAP (e.g., objective evidence of central sleep apnea, comorbid medical disorders are present that affect the ability to perform a HST, the patient is developmentally and functionally incapable of following instructions to prevent cooperation with a HST),
- C. a previous properly performed medically necessary HST for the diagnosis of OSA was negative or inconclusive in a moderate to high pre-test probability patient within the last six months,
- D. a patient with CHF remains symptomatic for CHF despite adequate medical treatment, regardless of pre-test probability of OSA,
- E. a pediatric patient when PAP therapy is reasonable or following tonsillectomy and/or adenoidectomy with continued symptoms of OSA and the AHI/RDI was diagnostic of pediatric OSA in a PSG of at least 2 hours duration;
- E. an AHI/RDI greater than or equal to 40/hour, documented in a PSG of at least two hours duration, and
- F. the CPAP titration is carried out for more than three hours.

VII. EEG Topography

Based upon our criteria and assessment of the peer-reviewed literature, when used for the diagnosis and/or medical management of obstructive sleep apnea syndrome, EEG topography, has not demonstrated a benefit to patient outcomes and is considered **investigational**.

VIII. Actigraphy

Based upon our criteria and assessment of peer-reviewed literature, *actigraphy* is considered **investigational** for the routine diagnosis, assessment of severity or management of any of the sleep disorders.

*Refer to Corporate Medical Policy #1.01.06 regarding Positive Pressure Airway Devices.*

*Refer to Corporate Medical Policy#1.01.07 regarding Oral Appliances for the Treatment of Sleep-Related Breathing Disorders.*

*Refer to Corporate Medical Policy #7.01.41 regarding Surgical Management of Sleep Disorders.*

*Refer to Corporate Medical Policy #11.01.03 regarding Experimental and Investigational Services.*

**POLICY GUIDELINES:**

- I. Probability of obstructive sleep apnea is determined via a comprehensive sleep evaluation by a sleep specialist (refer to Policy Guideline IV). Established sleep disorder tools and questionnaires (e.g., Epworth Sleepiness Scale; Berlin, Wisconsin, STOP, and STOP-BANG questionnaires) may assist the specialist in the evaluation of a patient with a suspected sleep disorder.

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A patient with a high pre-test probability of moderate to severe obstructive sleep apnea may exhibit the following signs and symptoms, which have been persistent for greater than four weeks in duration:

- A. Patient has reported excessive sleepiness, non-restorative, disturbed, or restless sleep AND apneas, gasping, or choking at night has been witnessed, or
- B. Patient has reported excessive sleepiness, non-restorative, disturbed, or restless sleep AND has at least two of the following supporting signs, symptoms, or risk factors:
  - 1. Neck circumference greater than 17 inches for males or 16 inches for females;
  - 2. Obesity (BMI greater than 30);
  - 3. Physiologic abnormalities compromising respiration (e.g., retrognathia, tonsillar hypertrophy);
  - 4. Regularly observed disruptive snoring;
  - 5. Refractory hypertension;
  - 6. Morning headaches;
  - 7. Decreased concentration;
  - 8. Memory loss;
  - 9. Decreased libido;
  - 10. Irritability;
  - 11. Nocturia; or
- C. Patient has unexplained documented pulmonary hypertension; or
- D. Patient has unexplained polycythemia with Hg greater than 18.5 g/dL in males or 16.5 g/dL in females,

In addition, pediatric patients, less than 6 years of age, may exhibit the following symptoms:

- A. Neurobehavioral problems including attention deficit hyperactivity disorder,
- B. Failure to thrive,
- C. Neuromuscular disorders,
- D. Paradoxical breathing,
- E. Nocturnal diaphoresis,
- F. Secondary enuresis, and
- G. Persistent symptoms present for greater than 4 weeks in duration not only associated with respiratory infections.

- II. The testing facility must be a sleep disorder center. A sleep disorder center is a medical facility providing clinical diagnostic services and treatment to patients who present with symptoms or features that suggest the presence of a sleep disorder.
- III. All sleep disorder centers must be accredited by the American Academy of Sleep Medicine in order for the coverage of services to be considered.
- IV. Sleep studies should be interpreted by a physician who:
  - A. is certified by the American Board of Sleep Medicine (ABSM); or
  - B. holds subspecialty certification in sleep medicine by a member board of the American Board of Medical Specialties (ABMS); such as the American Board of Family Medicine, the American Board of Internal Medicine, American Board of Otolaryngology, the American Board of Pediatrics, or the American Board of Psychiatry and Neurology; or
  - C. has completed a residency in sleep medicine and meets the Health Plan's credentialing criteria for board certification; or
  - D. is an active staff member of a sleep disorder center certified by the American Academy of Sleep Medicine.
- V. An unattended, cardiorespiratory sleep study (Type III device) may be an acceptable alternative to full night PSG for those patients with a high-pretest probability of OSA who are without significant comorbid conditions. A full PSG may be required for those symptomatic patients who have a negative cardiorespiratory home sleep study.
- VI. The Federal Employees Health Benefit Program (FEHBP/FEP) requires that procedures, devices or laboratory tests approved by the U.S. Food and Drug Administration (FDA) may not be considered investigational and thus these procedures, devices or laboratory tests may be assessed only on the basis of their medical necessity.

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## **DESCRIPTION:**

Sleep disorders medicine is a clinical specialty concerned with diagnosis and treatment of patients with disorders of sleep and daytime alertness. Categories of sleep disorders include:

- I. *Insomnia* is a persistent difficulty with sleep initiation, duration, consolidation, or quality that occurs despite adequate opportunity and circumstances for sleep, and results in some form of daytime impairment. Among adults with insomnia, sleep complaints most typically include difficulties initiating or maintaining sleep. Concerns about lengthy periods of nocturnal wakefulness, insufficient amounts of nocturnal sleep, or poor sleep quality often accompany these complaints. Insomnia among children is often reported by their caretakers and characterized by bedtime resistance, frequent nighttime awakenings and/or an inability to sleep independently. Regardless of the exact nature of the nocturnal sleep concerns, daytime impairments are reported, presumably caused by the nighttime sleep difficulties or by some common but unidentified mechanism during sleep and wakefulness. Daytime symptoms typically include fatigue, decreased mood or irritability, general malaise, and cognitive impairment.
- II. *Sleep Related Breathing Disorders* are characterized by abnormalities of respiration during sleep. In some of these disorders, respiration is also abnormal during wakefulness. The disorders are grouped into obstructive sleep apnea (OSA) disorders, central sleep apnea disorders, sleep related hypoventilation disorders, and sleep related hypoxemia disorder. However, many patients will meet diagnostic criteria for more than one of these groups. In particular, many patients have a combination of obstructive and central sleep apnea. Although a diagnosis is often based on which disorder predominates, this may vary from night to night as well as over time in individual patients. There is also overlap in pathophysiology, as some central apneas are associated with a closed upper airway and many obstructive apneas begin during a time of falling ventilatory drive.
- III. *Central Disorders of Hypersomnolence* includes a group of disorders in which the primary complaint is daytime sleepiness not caused by disturbed nocturnal sleep or misaligned circadian rhythms. Other sleep disorders may be present, but they must be adequately treated before a diagnosis in this category can be established. The term hypersomnolence is used to describe the symptom of excessive sleepiness, whereas hypersomnia refers to specific disorders, such as idiopathic hypersomnia.
- IV. *Circadian Rhythm Sleep-Wake Disorders (CRSWDs)* are disorders that are caused by alterations of the circadian time-keeping system, its entrainment mechanisms, or a misalignment of the endogenous circadian rhythm and the external environment. Most CRSWDs arise when a substantial misalignment exists between the internal rhythm and the required timing of the patient's school, work, or social activities. The most common presenting symptoms of CRSWDs are difficulty initiating and maintaining sleep, and excessive sleepiness, but their impact extends to adverse health outcomes, impairments in social, occupational and educational performance, and safety concerns.
- V. *Parasomnias* are undesirable physical events or experiences that occur during entry into sleep, within sleep, or during arousal from sleep. Parasomnias may occur during non-rapid eye movement sleep (NREM), rapid eye movement sleep (REM), or during transitions to and from sleep. Parasomnias encompass abnormal sleep related complex movements, behaviors, emotions, perceptions, dreams, and autonomic nervous system activity. Parasomnias are clinical disorders because of the resulting injuries, sleep disruption, adverse health effects, and untoward psychosocial effects. The clinical consequences of the parasomnias can affect the patient, the bed partner, or both.
- VI. *Sleep Related Movement Disorders* are primarily characterized by relatively simple, usually stereotyped, movements that disturb sleep or its onset. Restless legs syndrome (RLS) is an exception in that patients typically engage in walking or nonstereotypic limb movement to reduce leg discomfort. However, RLS is closely associated with periodic limb movements (PLMs), which are usually simple and stereotyped within a series. Nocturnal sleep disturbance or complaints of daytime sleepiness or fatigue are a prerequisite for a diagnosis of a sleep related movement disorder. Body movements that disturb sleep also are seen in many other sleep disorder categories (e.g., parasomnias such as sleepwalking, sleep terrors, and rapid eye movement [REM] sleep behavior disorder [SBD]). However, these parasomnias differ from the simple stereotyped movements categorized as sleep related movement disorders in that they involve complex behaviors during the sleep period. Parasomnia-related movements may appear

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purposeful and goal-directed, but are outside the conscious awareness of the individual. Parasomnias are listed in a separate section from the sleep related movement disorders.

**Polysomnography (PSG)** refers to a class of tests that utilize continuous polygraph recording, usually over the course of a night, of electrophysiological measurements relevant to diagnosing sleep disorders. The four components of a PSG include: 1) electrographic recordings (EKG, EMG, EEG, EOG); 2) ventilatory variables that permit the identification of apneas and their classification as central or obstructive; 3) arterial oxygen saturation by finger oximetry; and 4) heart rate. In addition, a PSG may also include additional monitoring modalities such as esophageal monitoring and blood pressure monitoring. By definition, a PSG always requires sleep staging (EEG, EOG and EMG). In contrast, an unattended cardiorespiratory sleep study does not include sleep staging. The components of any sleep testing are dictated by the clinical situation. The number and nature of parameters studied depends upon the judgment of the sleep disorders medical specialist. The terms sleep studies and polysomnogram are often used interchangeably. However, CPT and HCPCS coding makes the distinction between the two in the following way: polysomnography includes EEG monitoring, unattended cardiorespiratory sleep studies do not.

**Ambulatory, Home, or Portable Sleep Studies** are sleep studies performed with a portable machine that generally has four leads which measure airflow, chest and/or abdominal wall movement, oxygen saturation (oximetry) and cardiac activity (electrocardiogram). This contrasts with standard studies, which are performed at a sleep study center and use as many as sixteen leads. There are several categories of portable monitoring procedures utilized for home sleep studies. These include:

- I. Type II devices, also referred to as comprehensive portable polysomnography, have a minimum of seven channels, including EEG, EOG, chin EMG, ECG or heart rate, airflow, respiratory effort, oxygen saturation;
- II. Type III devices, referred to as cardiorespiratory studies, have a minimum of four channels, including ventilation or airflow (at least two channels of respiratory movement, or respiratory movement and airflow), heart rate or ECG and oxygen saturation; and
- III. Type IV devices - measure one or more parameters; but do not measure two channels of respiratory movement. Type III and IV procedures are considered polygraphic sleep studies.

**Split night sleep studies** utilize the final portion of the overnight PSG to titrate CPAP. A split- night sleep study is an alternative to full night of diagnostic polysomnography followed by a second night of CPAP titration.

**Multiple Sleep Latency Test (MSLT)** utilizes the same parameters as a basic polysomnogram for sleep staging (e.g., EEG, EKG, EMG, EOG). The MSLT consists of four to five 20- minute nap opportunities offered at 2-hour intervals. The MSLT is designed to quantitate sleepiness by measuring the number of minutes it takes the patient to fall asleep (sleep latency) and also determines the premature occurrence of REM sleep. Conversely, the Maintenance of Wakefulness Test (MWT), a variant of the MSLT, measures a patient's ability to stay awake during a designated wakeful time. MWT evaluates the patient's degree of alertness and his/her tendency to fall asleep at inappropriate times.

**EEG Topography** is a computer based electroencephalographic mapping of the spacial distributions of pre-defined frequency bands.

**Nocturnal pulse oximetry** is the measurement of oxygen saturation, usually overnight, in the home. It is utilized for several clinical purposes such as evaluating patients for obstructive sleep apnea and for determining oxygen dosing in patients with chronic pulmonary disease.

**Actigraphy** consists of a small portable device, usually worn on the wrist or ankle, that senses physical motion and stores that information for future displaying, scoring and interpretation. Recordings can be conducted for days or weeks on patients in their own homes. Actigraphy has been used by researchers to measure sleep disturbances reflective of a variety of clinical sleep disorders, including insomnias, hypersomnia, circadian rhythm disorders, and periodic limb movement disorders.

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### **RATIONALE:**

Overnight polysomnography is an established diagnostic procedure used in conjunction with clinical examination in determining the presence and extent of obstructive sleep apnea (OSA). Polysomnography is considered the gold standard of OSA diagnosis and follow-up. It provides objective data on the type and severity of sleep-disordered breathing.

Evidence from clinical studies has demonstrated that a home sleep study using a type III device can provide an accurate diagnosis of OSA in carefully selected patients whose symptoms demonstrate a high pretest probability of OSA. A specialist familiar with OSA is the most qualified to determine who is best suited for a home sleep study. The use of unattended, home polysomnography or sleep study has not been validated as a diagnostic test for obstructive sleep apnea for any other subset of patients except as stated above. Home sleep studies may also be an acceptable tool in specific circumstances.

Type II and IV portable devices are lacking evidence to recommend their clinical use at this time. Although Type II devices theoretically should most resemble in-laboratory polysomnography and be best for calculating an AHI because they permit sleep scoring, relatively few published studies provide data and address this use. Based on the small number of published studies, the absence of sensitivity and specificity data, and the low level of evidence, inadequate data are available to recommend the clinical use of Type II PM devices in the attended or unattended setting.

Insufficient evidence is available that demonstrates the efficacy of a type IV PM device (e.g., study in which the diagnosis of OSA was not adequately classified in 50% of patients). In addition, most of the studies investigating type IV devices had substantial numbers of patients who were not classified as being either positive or negative with respect to an AHI greater than or less than 15. Of those studies that used Type IV PM devices in an attempt to both reduce and increase the probability of a patient having a diagnosis of OSA used multiple cutoffs to achieve better likelihood ratios and had a high rate of patients who did not have a diagnostic result. Both of these factors defeat the purpose of a screening test and result in a lack of adequate data to establish the use of Type IV PM devices. Moreover, Type IV PM devices neither identify apnea nor measure and confirm sleep. The WATCH-PAT device is considered a “sleep testing device” as it measures more than two bioparameters (heart rate, oximetry, wrist actigraphy, and peripheral arterial tone) but does not measure two airflow channels (respiratory effort and airflow); and is therefore, not eligible for coverage as a Type III device.

Pulse oximetry, when used alone, has not been shown to have an adequate negative predictive value to rule out OSA (all patients with symptoms of OSA would require PSG regardless of whether pulse oximetry was negative or positive). Overnight oximetry has not been demonstrated to be a sufficiently reliable predictor of the presence of OSA, particularly mild OSA.

Actigraphy has been used in many research studies for the evaluation of rest-activity cycles. This technique has not been validated as a method of diagnosing OSA. The major limitation of the methodology is precision, as well as the lack of correlation between physical movement and sleep architecture. The role of actigraphy in clinical management of OSA is not clear but can be helpful in determining the length of time in bed and activity levels.

MSLT and MWT are validated, objective measures of the tendency to fall asleep and the ability to stay awake for a defined time, respectively. Studies of the MSLT procedure demonstrate significant differences in mean sleep latency values between healthy subjects and patients with excessive sleepiness due to narcolepsy or idiopathic hypersomnias. The MWT has shown utility in assessing the ability of individuals to remain awake in a sleep-conducive environment and has been used to determine response to treatment and reduction in sleepiness.

The diagnosis of periodic limb movement disorder (PLMD) requires quantification of PLMs and PLM related arousals, assessment of the impact of the movements upon sleep architecture, and identification and exclusion of other sleep disorders. Although PLMD can exist independent of restless leg syndrome, it is estimated that over 80% of individuals with RLS have evidence of PML on PSG, so PSG may be helpful in increasing the confidence in the RLS diagnosis.



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**CODES:**      Number                      Description

*Eligibility for reimbursement is based upon the benefits set forth in the member's subscriber contract.*

CODES MAY NOT BE COVERED UNDER ALL CIRCUMSTANCES. PLEASE READ THE POLICY AND GUIDELINES STATEMENTS CAREFULLY.

Codes may not be all inclusive as the AMA and CMS code updates may occur more frequently than policy updates.

Code Key: Experimental/Investigational = (E/I), Not medically necessary/ appropriate = (NMN).

<b><u>CPT:</u></b>	94762	Noninvasive ear or pulse oximetry for oxygen saturation by continuous overnight monitoring
	95782	Polysomnography; younger than 6 years, sleep staging with 4 or more additional parameters of sleep, attended by a technologist
	95783	Polysomnography; younger than 6 years, sleep staging with 4 or more additional parameters of sleep, with initiation of continuous positive airway pressure therapy or bi-level ventilation, attended by a technologist
	95800 (NMN)	Sleep study, unattended, simultaneous recording; heart rate, oxygen saturation, respiratory analysis (eg, by airflow or peripheral arterial tone) and sleep time
	95801 (NMN)	minimum of heart rate, oxygen saturation, and respiratory analysis (eg, by airflow or peripheral arterial tone)
	95803 (E/I)	Actigraphy testing, recording, analysis, interpretation, and report (minimum of 72 hours to 14 consecutive days of recording)
	95805	Multiple sleep latency or maintenance of wakefulness testing, recording, analysis and interpretation of physiological measurements of sleep during multiple trials to assess sleepiness
	95806	Sleep study, unattended, simultaneous recording of, heart rate, oxygen saturation, respiratory airflow, and respiratory effort (eg, thoracoabdominal movement)
	95807	Sleep study, simultaneous recording of ventilation, respiratory effort, ECG or heart rate, and oxygen saturation, attended by a technologist
	95808	Polysomnography; any age, sleep staging with 1-3 additional parameters of sleep, attended by a technologist
	95810	age 6 years and older, sleep staging with 4 or more additional parameters of sleep, attended by a technologist
	95811	age 6 years and older, sleep staging with 4 or more additional parameters of sleep, with initiation of continuous positive airway pressure therapy or bilevel ventilation, attended by a technologist

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<b><u>HCPCS:</u></b>	G0398 (E/I)	Home sleep study test (HST), with type II portable monitor, unattended; minimum of 7 channels: EEG, EOG, EMG, ECG/heart rate, airflow, respiratory effort and oxygen saturation
	G0399	Home sleep test (HST) with type III portable monitor, unattended: minimum of 4 channels: 2 respiratory movement/airflow, 1 ECG/heart rate and 1 oxygen saturation

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	G0400 (NMN)	Home sleep test (HST) with type IV portable monitor, unattended: minimum of 3 channels
<b><u>ICD9:</u></b>	345.00-345.91	Epilepsy (code range)
	347.00-347.11	Cataplexy and narcolepsy (code range)
	780.39	Other convulsions (seizures)
	780.50-780.59	Sleep disturbances (code range)
<b><u>ICD10:</u></b>	F51.8	Other sleep disorders not due to a substance or known physiological condition
	G40.001-G40.219	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes (code range)
	G40.301-G40.319	Generalized idiopathic epilepsy and epileptic syndromes (code range)
	G40.401-G40.419	Other generalized epilepsy and epileptic syndromes (code range)
	G40.501-G40.509	Epileptic seizures related to external causes (code range)
	G40.801-G40.804	Other epilepsy (code range)
	G40.811-G40.814	Lennox-Gastaut syndrome (code range)
	G40.821-G40.824	Epileptic spasms (code range)
	G40.89	Other seizures
	G40.901-G40.919	Epilepsy, unspecified (code range)
	G40.A01-G40.A19	Absence epileptic syndrome (code range)
	G40.B01-G40.B19	Juvenile myoclonic epilepsy (code range)
	G47.00	Insomnia, unspecified
	G47.10	Hypersomnia, unspecified
	G47.20	Circadian rhythm sleep disorder, unspecified type
	G47.30	Sleep apnea, unspecified
	G47.411-G47.429	Narcolepsy (code range)
	G47.8-G47.9	Other and unspecified sleep disorders (code range)
	R56.9	Unspecified convulsions

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#### **KEY WORDS:**

Actigraphy, EEG Topography, MSLT, Polysomnography, Sleep study.

## **CMS COVERAGE FOR MEDICARE PRODUCT MEMBERS**

There is currently a National Coverage Determination (NCD) that addresses Sleep Testing for Obstructive Sleep Apnea (OSA). Please refer to the following website for Medicare Members:

<http://www.cms.gov/medicare-coverage-database/details/ncd-details.aspx?NCDId=330&ncdver=1&CoverageSelection=National&Keyword=sleep+testing&KeywordLookUp=Title&KeywordSearchType=And&bc=gAAAAACAAAAA&>

The Local Coverage Determination (LCD) addressing Polysomnography and Sleep Studies was retired as of May 1, 2013 and replaced by a Medical Policy Article which describes sleep study credentialing and documentation requirements.

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Please refer to the following website for Medicare Members:

[http://www.ngsmedicare.com/wps/portal/ngsmedicare!/ut/p/c5/hY3NDolwEISfxRdgdynb4pHlj6BgQk2kvRg0hpBY8GDw9SXqlThznC\\_fgIW5Qzv1Xfvsx6G9QwNWnrEScZRygKiZMU-wVqVWPgYEJzDJDJkZWkiEfxX2QxR68yXKNWleSZlmGYpD5f\\_2Zb8BqxYfdj4cwaRQgO0vzntdnYeeJGZiSUhKEKsAmgyq7ehu8HDTXtYhhaJbvQHsVrvH/dl3/d3/L2dBISEvZ0FBIS9nQSEh/?clearcookie&savecookie&REGION&LOB=Part%20B&digest=N\\_5daMHgbyRiOPvt7gua6g](http://www.ngsmedicare.com/wps/portal/ngsmedicare!/ut/p/c5/hY3NDolwEISfxRdgdynb4pHlj6BgQk2kvRg0hpBY8GDw9SXqlThznC_fgIW5Qzv1Xfvsx6G9QwNWnrEScZRygKiZMU-wVqVWPgYEJzDJDJkZWkiEfxX2QxR68yXKNWleSZlmGYpD5f_2Zb8BqxYfdj4cwaRQgO0vzntdnYeeJGZiSUhKEKsAmgyq7ehu8HDTXtYhhaJbvQHsVrvH/dl3/d3/L2dBISEvZ0FBIS9nQSEh/?clearcookie&savecookie&REGION&LOB=Part%20B&digest=N_5daMHgbyRiOPvt7gua6g).