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## Subject: Sleep Testing

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### DESCRIPTION:

[Sleep studies](#) and [polysomnography](#) (PSG) refer to the continuous and simultaneous monitoring and recording of various physiological and pathophysiological parameters of sleep for 6 or more hours with physician review, interpretation, and report. Sleep studies are performed to diagnose sleep disorders, and to determine the effectiveness of treatments prescribed for patients who have been previously diagnosed with sleep disorders. Evaluation of signs and symptoms of sleep-disordered breathing should be conducted as part of routine health evaluations with adequate follow up.

**Attended Sleep Study – Polysomnography (PSG):** Polysomnography is the standard diagnostic test for the diagnosis of obstructive sleep apnea (OSA) in adult patients in whom there is a concern for OSA based on a comprehensive sleep evaluation, and the patient has significant comorbid conditions which may necessitate attended monitoring or could degrade the accuracy of a home apnea sleep test (HSAT). Polysomnography is performed overnight, in a sleep laboratory facility. The member is continuously monitored by a trained sleep technologist who directly observes the member during the test. Parameters measured, at a minimum, are frontal, central and occipital lead of electroencephalogram (EEG), a submental electromyogram (EMG) and a left and right electrooculogram (EOG) to allow sleep staging, extremity muscle and motor activity (EMG), as well as respiratory indicators such as ventilation, respiratory effort and pulse oximetry. Monitoring may include additional EEG or EMG channels, capnography or esophageal manometry, if clinically indicated. The member is directly monitored throughout the sleep test, with continuous video and audio recording.

**Split Night Sleep Study:** A split night sleep study is a sleep study that combines an initial diagnostic PSG followed by the therapeutic initiation of PAP therapy within a single sleep study.

**Multiple Sleep Latency Test (MSLT):** MSLT is facility-based test used to objectively measure the ability or tendency to fall asleep during the member's typical hours of wakefulness. This test is used to

diagnose narcolepsy with or without cataplexy and idiopathic hypersomnia with long sleep time, when other comorbid sleep disorders, including obstructive sleep apnea, have been evaluated and effectively treated and symptoms of excessive sleepiness persist.

**Maintenance of Wakefulness Test (MWT):** The MWT is a validated objective measure of the ability to stay awake for a defined time and is used in association with the clinical history to assess the ability to maintain wakefulness. The MWT is a facility-based test used to determine the ability to maintain wakefulness as an assessment of treatment of a previously diagnosed sleep disorder.

**Home Sleep Apnea Test (HSAT):** HSAT is an unattended sleep study administered using a portable monitoring device that measures physiologic indicators of respiratory activity during sleep, unattended, in a setting outside of the sleep center facility for adult members, age 18 years or older. The HSAT is the preferred method to diagnose OSA when OSA is suspected and there are no comorbid conditions, which would degrade the accuracy of HSAT.

**Titration Studies for Positive Airway Pressure (PAP) Therapy:** Treatment of obstructive sleep apnea using PAP therapy requires that PAP pressure be titrated to the appropriate settings to achieve optimal therapeutic benefit. PAP pressure settings can be determined through an attended overnight, facility-based titration study, or through use of auto-titrating PAP (APAP) device, which automatically adjusts pressure based on the member's physiological response during use outside of the sleep laboratory.

**Summary and Analysis of Evidence:** The American Academy of Sleep Medicine Clinical Practice Guideline for Diagnostic Testing for Adult Obstructive Sleep Apnea (Kapur, et al. 2017) states, "When OSA is suspected, a comprehensive sleep evaluation is important to ensure appropriate diagnostic testing is performed to address OSA, as well as other comorbid sleep complaints". Recommendations include: "We recommend that polysomnography, or home sleep apnea testing with a technically adequate device, be used for the diagnosis of OSA in uncomplicated adult patients presenting with signs and symptoms that indicate an increased risk of moderate to severe OSA (strong). An uncomplicated patient is defined by the absence of: Conditions that place the patient at increased risk of non-obstructive sleep-disordered breathing (e.g., central sleep apnea, hypoventilation and sleep related hypoxemia); examples of these conditions include significant cardiopulmonary disease, potential respiratory muscle weakness due to neuromuscular conditions, history of stroke and chronic opiate medication use. Concern for significant non-respiratory sleep disorder(s) that require evaluation (e.g., disorders of central hypersomnolence, parasomnias, sleep related movement disorders) or interfere with accuracy of HSAT (e.g., severe insomnia); and environmental or personal factors that preclude the adequate acquisition and interpretation of data from HSAT". "We recommend that polysomnography, rather than home sleep apnea testing, be used for the diagnosis of OSA in patients with significant cardiorespiratory disease, potential respiratory muscle weakness due to neuromuscular condition, awake hypoventilation or suspicion of sleep related hypoventilation, chronic opioid medication use, history of stroke or severe insomnia (strong). This recommendation is based on the limited data available regarding the validity of HSAT in patients with significant cardiorespiratory disease, neuromuscular disease with respiratory impairment, suspicion of hypoventilation, opioid medication use, history of stroke, or severe insomnia. The overall quality of evidence was very low due to imprecision, indirectness, and risk of bias. The task force considered both the accuracy of HSAT for the detection of OSA, and the concurrent need to detect other forms of sleep-disordered breathing that can occur in these populations (e.g., CSA, hypoventilation and sleep-related hypoxemia). PSG is the gold

standard method for the diagnosis of OSA and other forms of sleep-disordered breathing. HSAT has not been adequately validated or demonstrated to provide favorable clinical outcomes and efficient care in the above patient populations, and may result in harm through inaccurate assessment of sleep-disordered breathing". The Clinical Guidelines for the Use of Unattended Portable Monitors in the Diagnosis of Obstructive Sleep Apnea in Adult Patients (Collop, et al. 2007) include, "Portable monitoring (PM) may be used as an alternative to polysomnography (PSG) for the diagnosis of OSA in patients with a high pretest probability of moderate to severe OSA. PM is not appropriate for the diagnosis of OSA in patients with significant comorbid medical conditions that may degrade the accuracy of PM, including, but not limited to, moderate to severe pulmonary disease, neuromuscular disease, or congestive heart failure. PM is not appropriate for the diagnostic evaluation of patients suspected of having comorbid sleep disorders. PM is not appropriate for general screening of asymptomatic populations. PM may be indicated for the diagnosis of OSA in patients for whom in-laboratory PSG is not possible by virtue of immobility, safety, or critical illness".

### **POSITION STATEMENT:**

**NOTE:** Preauthorization (also known as prior authorization, prior approval or precertification) may be required for sleep testing under certain contracts.

**NOTE:** In addition to the evidence-based medical necessity criteria listed below, criteria based on recent comparative effectiveness studies will be applied for the site of service determination during the preauthorization process.

#### **Signs and Symptoms of Sleep Disordered Breathing**

Initial testing for the diagnosis of sleep disordered breathing is appropriate via laboratory polysomnography (PSG) or home sleep apnea testing (HSAT), if a member presents with an increased risk of moderate to severe obstructive sleep apnea (OSA), indicated by:

- witnessed apnea during sleep; **OR**
  - at least one sign/symptom from category A and one sign/symptom from category B.
- A. Evidence of Excessive Daytime Sleepiness
- Disturbed or restless sleep
  - Non restorative sleep
  - Frequent unexplained arousals from sleep
  - Fragmented sleep
  - Epworth Sleepiness Scale (ESS) greater than or equal to 10
  - Fatigue.
- B. Evidence suggestive of Sleep Disordered Breathing
- Habitual loud snoring
  - Choking or gasping during sleep

- BMI greater than or equal to 30
- Neck circumference greater than 17 in. (men) or greater than 16 in. (women)
- Sleep related bruxism
- Cognitive deficits such as inattention or memory
- Unexplained nocturnal reflux
- Erectile dysfunction
- Apneas or hypoxemia during procedures requiring anesthesia
- Morning headaches.

**Determining the Appropriate Site of Service for Sleep Testing**

Sleep testing may be performed in an attended setting in a laboratory facility **OR** outside of the sleep laboratory using a portable monitoring device. Selection of the appropriate site of service for sleep testing requires evaluation of **ALL** of the following:

1. Evaluation of the member’s clinical signs and symptoms related to the sleep disorder, including review of the member’s medical history and physical examination
2. Evaluation of any comorbid medical conditions
3. Evaluation of any secondary concomitant or associated sleep disorders **AND**
4. Assessment of the member’s cognitive and physical ability to safely and effectively perform the sleep test outside of the sleep laboratory.

**Diagnostic Testing**

**Note:** Diagnostic testing for sleep disorders must be ordered by a licensed physician or advanced practice provider and reviewed and interpreted by a board certified sleep physician.

**Home Sleep Apnea Test (HSAT)**

HSAT **meets the definition of medical necessity** when all of the following conditions are met (A,B,C,& D):

- A. Signs/symptoms of sleep-disordered breathing as noted above in the Signs and Symptoms of Sleep Disordered Breathing section, are present (witnessed apnea OR at least one sign/symptom from category A and one sign/symptom from Category B)
- B. Absence of other comorbid medical conditions or concomitant sleep disorders such as:
  - Comorbid medical conditions
    - Moderate to severe COPD or interstitial lung disease as diagnosed on pulmonary function studies (PFTs) or

chronic use of oxygen for the treatment of pulmonary disease

- Severe, persistent asthma as defined by use of daily oral corticosteroids and/or immunomodulator/biologics
- Moderate to severe heart failure with New York Heart Association (NYHA) Classification III or IV or reduced EF less than or equal to 40%
- Moderate to severe pulmonary hypertension, with pulmonary artery pressure greater than 40 mm Hg
- Neuromuscular/neurodegenerative disorder causing restrictive disease, or hypoventilation such as: severe kyphoscoliosis, myasthenia gravis, amyotrophic lateral sclerosis (ALS), post-polio syndrome, polymyositis, and Guillian-Barré syndrome
- Acute, uncontrolled or refractory cardiac arrhythmia(s) supported by clinical documentation (such as recurrent palpitations, nocturnal; syncope-dizziness or light-headedness; short of breath, chest pain associated with arrhythmia)
- Chronic opioid medication use that would increase risk of central sleep apnea (chronic use defined as use of opioids on most days for greater than 3 months)
- Obesity hypoventilation syndrome, defined as pCO<sub>2</sub> greater than 45 mm Hg and pO<sub>2</sub> less than 60 mm Hg on arterial blood gas.

Secondary concomitant or associated sleep disorders such as:

- Previously diagnosed periodic limb movement disorder (PLMD), defined as greater than or equal to 15 periodic limb movements per hour resulting in arousal when the arousals are not associated with respiratory events
- Complex parasomnias, with potentially injurious, disruptive or violent behavior, such as REM Behavior Disorder or sleep walking
- Narcolepsy, or narcolepsy-related symptoms (i.e. idiopathic hypersomnia), after obstructive sleep apnea has been evaluated and effectively treated as documented by the member's objective adherence to therapy (PAP download)
- Previously diagnosed central sleep apnea or treatment-emergent sleep apnea, defined as central apneas/ hypopneas greater than 50% of the total

apneas/hypopneas and central apneas/hypopneas greater than or equal to 5 times per hour

- Central nervous system disorders which may increase risk of central sleep apnea (e.g., Arnold Chiari malformation)
- Nocturnal seizures which are acute and/or not effectively controlled and occurring concomitantly with other sleep disorders.

C. Cognitive and physical ability to safely and effectively perform the sleep test outside of the sleep laboratory

D. Age 18 years or older.

**Note:** An HSAT may be administered over multiple nights, at the discretion of the ordering qualified healthcare professional. The results should be aggregated into one single report. This is considered one diagnostic sleep test and multiple HSAT tests should be reported as a single HSAT procedure.

HSAT **does not meet the definition of medical necessity** to monitor PAP efficacy in a member already diagnosed with OSA and using PAP therapy. The PAP download should provide sufficient efficacy and usage data.

Portable monitoring devices used in HSAT are categorized based on the number of channels measured. Portable monitoring devices that measure fewer than 3 channels provide only limited information and therefore **does not meet the definition of medical necessity**.

Sleep testing (PSG or HSAT) **does not meet the definition of medical necessity** for:

- members with insomnia, circadian rhythm disorders or restless leg syndrome (RLS)
- screening asymptomatic members who have no sleep-related complaints
- members who have symptoms of snoring only
- members required to be tested by an employer or other government or regulatory agency and who have no symptoms of excessive daytime somnolence or other signs/symptoms of OSA.

Overnight oximetry testing **does not meet the definition of medical necessity** for OSA screening or as a diagnostic test for members suspected of obstructive sleep apnea.

**Attended Sleep Study –  
Polysomnography (PSG)**

An attended sleep study (95808, 95810) **meets the definition of medical necessity** when a member presents with (A&B, A&C, or D):

- A. Signs/symptoms of sleep disordered breathing as noted above.
- B. Comorbid medical conditions which may necessitate attended monitoring such as:
  - Moderate to severe COPD or interstitial lung disease as diagnosed on pulmonary function studies (PFTs) or chronic use oxygen for the treatment of pulmonary disease
  - Severe, persistent asthma as defined by use of daily oral corticosteroids and/or immunomodulator biologics
  - Moderate to severe heart failure with New York Heart Association (NYHA) Classification III or IV or reduced EF less than or equal to 40%
  - Moderate to severe pulmonary hypertension, with pulmonary artery pressure greater than 40 mm Hg
  - Neuromuscular/neurodegenerative disorder causing restrictive disease, or hypoventilation such as: severe kyphoscoliosis, myasthenia gravis, amyotrophic lateral sclerosis (ALS), post-polio syndrome, polymyositis, and Guillian-Barré syndrome
  - Acute, uncontrolled or refractory cardiac arrhythmia(s) supported by clinical documentation (such as recurrent palpitations, nocturnal; syncope-dizziness or light-headedness; short of breath, chest pain associated with arrhythmia)
  - Chronic opioid medication use that would increase risk of central sleep apnea, (chronic use defined as use of opioids on most days per week for greater than 3 months)
  - Obesity hypoventilation syndrome, defined as pCO<sub>2</sub> greater than 45 mm Hg and pO<sub>2</sub> less than 60 mm Hg on arterial blood gas.
- C. Recent Home Sleep Apnea Test (HSAT) (less than 1 year old) confirmed to be non-diagnostic:
  - A previous home sleep study was technically inadequate and there was a valid attempt to retest the member via HSAT (**Of note:** there is no minimum

	<p>required HSAT recording time required for HSAT to be considered diagnostic), or</p> <ul style="list-style-type: none"> <li>• A previous home sleep study failed to establish the diagnosis of OSA in a member with a high pretest probability of OSA.</li> </ul> <p>D. Presence of a secondary concomitant or associated sleep disorder other than suspected OSA which may necessitate attended monitoring such as:</p> <ul style="list-style-type: none"> <li>• Previously diagnosed periodic limb movement disorder (PLMD), defined as greater than or equal to 15 periodic limb movements per hour resulting in arousal, when the arousals are not associated with respiratory events</li> <li>• Complex parasomnias, with potentially injurious, disruptive or violent behavior, such as REM Behavior Disorder or sleep walking</li> <li>• Narcolepsy, or narcolepsy-related symptoms (i.e. idiopathic hypersomnia), after obstructive sleep apnea has been evaluated and effectively treated, as documented by the member’s objective adherence to therapy (PAP download)</li> <li>• Previously diagnosed central sleep apnea or treatment-emergent sleep apnea, defined as central apneas/hypopneas greater than 50% of the total apneas/hypopneas and central apneas/hypopneas greater than or equal to 5 times per hour</li> <li>• Central nervous system disorders which may increase risk of central sleep apnea (e.g. Arnold Chiari malformation)</li> <li>• Nocturnal seizures which are acute and/or not effectively controlled and occurring concomitantly with other sleep disorders.</li> </ul>
<p><b>Full Night, Attended Titration Study</b></p>	<p><b>Note:</b> Attended Titration for members (age 6 and older) (CPT code 95811) is appropriate after an initial diagnostic sleep study (PSG or HSAT) has confirmed the presence of significant obstructive sleep apnea and the member is not appropriate for unattended titration using auto-titrating PAP (APAP or auto bi-level PAP) device.</p> <p>A full night, attended titration study (95811) <b>meets the definition of medical necessity</b> when the following conditions are met (A &amp;B, A&amp;C, or A&amp;D).</p>



Unattended titration using APAP (E0601) **meets the definition of medical necessity** only when condition A is met and conditions B, C, and D are not.

- A. Member has been previously diagnosed with significant obstructive sleep apnea:
1. Results of a PSG or HSAT indicate AHI or RDI or REI measured on HSAT greater than or equal to 15 events per hour, **OR**
  2. AHI or RDI or REI measured on HSAT greater than or greater than or equal to 5 events per hour but less than 15 with clinical evidence of one of the following conditions:
    - Excessive daytime sleepiness
    - Impaired cognition
    - Mood disorders (e.g. depression, anxiety)
    - Insomnia
    - Hypertension
    - Ischemic heart disease
    - History of stroke.
- B. Results of the initial diagnostic PSG or HSAT indicate significant oxygen desaturations during the study:
- O2 saturation <90% for greater than 15% of recording time during a diagnostic home sleep apnea test or diagnostic facility based PSG, **OR**
  - O2 saturation < 80% for greater than 1% of recording time during a diagnostic home sleep apnea test or diagnostic facility based PSG.
- C. Presence of a comorbid condition or concomitant secondary sleep disorder that may necessitate an attended titration:
- Comorbid medical conditions such as:
- Moderate to severe COPD or interstitial lung disease as diagnosed on pulmonary function studies (PFTs) or chronic use of oxygen for the treatment of pulmonary disease
  - Severe, persistent asthma as defined by use of daily oral corticosteroids and/or immunomodulator biologics

- Moderate to severe heart failure with New York Heart Association (NYHA) Classification III or IV or reduced EF less than or equal to 40%
- Moderate to severe pulmonary hypertension, with pulmonary artery pressure greater than 40 mm Hg
- Neuromuscular/neurodegenerative disorder causing restrictive disease, or hypoventilation such as: severe kyphoscoliosis, myasthenia gravis, amyotrophic lateral sclerosis (ALS), post-polio syndrome, polymyositis, and Guillian-Barré syndrome
- Acute, uncontrolled or refractory cardiac arrhythmia(s) supported by clinical documentation (such as recurrent palpitations, nocturnal; syncope-dizziness or light-headedness; short of breath, chest pain associated with arrhythmia)
- Chronic opioid medication use that would increase risk of central sleep apnea, (chronic use defined as use of opioids on most days per week for greater
- Obesity hypoventilation syndrome, defined as pCO<sub>2</sub> greater than 45 mm Hg and pO<sub>2</sub> less than 60 mmHg on arterial blood gas.

Secondary concomitant or associated sleep disorders such as:

- Previously diagnosed periodic limb movement disorder (PLMD), defined as greater than or equal to 15 periodic limb movements per hour resulting in arousal when the arousals are not associated with respiratory events
- Complex parasomnias, with potentially injurious, disruptive or violent behavior, such as REM Behavior Disorder or sleep walking
- Narcolepsy, or narcolepsy-related symptoms (i.e. idiopathic hypersomnia), after obstructive sleep apnea has been evaluated and effectively treated as documented by the member's objective adherence to therapy (PAP download)
- Central sleep apnea or treatment-emergent sleep apnea, defined as central apneas/ hypopneas greater than 50% of the total apneas/hypopneas and central apneas/hypopneas greater than or equal to 5 times per hour

	<ul style="list-style-type: none"> <li>• Central nervous system disorders which may increase risk of central sleep apnea (e.g., Arnold Chiari malformation)</li> <li>• Nocturnal seizures which are acute and/or not effectively controlled and occurring concomitantly with other sleep disorders.</li> </ul> <p>D. The member has failed recent APAP trial at home. APAP failure is defined as:</p> <ul style="list-style-type: none"> <li>• The member has a residual AHI on APAP download of greater than or equal to 5 with adequate objective adherence to therapy (use <math>\geq 4</math> hours per night on 70% of nights during a consecutive 30 day period reported on APAP download), or</li> <li>• The member has residual symptoms of excessive daytime sleepiness with adequate objective adherence to therapy (use <math>\geq 4</math> hours per night on 70% of nights during a consecutive 30 day period reported on APAP download), or</li> <li>• The member is not a candidate for auto bi-level therapy or auto bi-level therapy has been tried and has not been effective, or</li> <li>• The member was unable to tolerate positive airway pressure therapy following a 1-month minimum trial of APAP as evidenced by the objective data (as noted in the bullet above <b>AND</b> the member did not have a previous attended titration.</li> </ul>
<p><b>Split Night Sleep Study</b></p>	<p>A facility-based split night sleep study (95811) <b>meets the definition of medical necessity</b> when a member presents with (A&amp;B or A&amp;C or A&amp;D):</p> <p>A. Signs/symptoms of sleep disordered breathing as noted above.</p> <p>B. Presence of a comorbid condition:</p> <ul style="list-style-type: none"> <li>• Moderate to severe COPD or interstitial lung disease as diagnosed on pulmonary function studies (PFTs) or chronic use of oxygen for the treatment of pulmonary disease</li> <li>• Severe, persistent asthma as defined by use of daily oral corticosteroids and/or immunomodulator biologics</li> </ul>

- Moderate to severe heart failure with New York Heart Association (NYHA) Classification III or IV or reduced EF less than or equal to 40%
- Moderate to severe pulmonary hypertension, with pulmonary artery pressure greater than 40 mm Hg
- Neuromuscular/neurodegenerative disorder causing restrictive disease, or hypoventilation such as: severe kyphoscoliosis, myasthenia gravis, amyotrophic lateral sclerosis (ALS), post-polio syndrome, polymyositis, and Guillian-Barré syndrome
- Acute, uncontrolled or refractory cardiac arrhythmia(s) supported by clinical documentation (such as recurrent palpitations, nocturnal; syncope-dizziness or light-headedness; short of breath, chest pain associated with arrhythmia)
- Chronic opioid medication use that would increase risk of central sleep apnea, (chronic use defined as use of opioids on most days per week for greater than 3 months)
- Obesity hypoventilation syndrome, defined as pCO<sub>2</sub> greater than 45 mm Hg and pO<sub>2</sub> less than 60 mmHg on arterial blood gas.

C. Recent HSAT (less than 1 year old) confirmed to be non-diagnostic:

- A previous home sleep study was technically inadequate and there was a valid attempt to retest the member via HSAT. (**Of note:** there is no minimum required HSAT recording time for HSAT to be considered diagnostic), or
- A previous home sleep study failed to establish the diagnosis of OSA in a member with a high pretest probability of OSA.

D. Presence of a secondary concomitant or associated sleep disorder other than suspected OSA such as:

- Previously diagnosed periodic limb movement disorder (PLMD), defined as greater than or equal to 15 periodic limb movements per hour resulting in arousal when the arousals are not associated with respiratory events
- Complex parasomnias, with potentially injurious, disruptive or violent behavior, such as REM Behavior Disorder or sleep walking

	<ul style="list-style-type: none"> <li>• Narcolepsy, or narcolepsy-related symptoms (i.e. idiopathic hypersomnia), after obstructive sleep apnea has been evaluated and effectively treated as documented by the member’s objective adherence to therapy (PAP)</li> <li>• Central sleep apnea or treatment-emergent sleep apnea, defined as central apneas/ hypopneas greater than 50% of the total apneas/hypopneas and central apneas/hypopneas greater than or equal to 5 times per hour</li> <li>• Central nervous system disorders which may increase risk of central sleep apnea (e.g. Arnold Chiari malformation)</li> <li>• Nocturnal seizures which are acute and/or not effectively controlled and occurring concomitantly with other sleep disorders.</li> </ul>
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**Repeat Diagnostic Testing**

<p><b>HSAT/PSG/Split Night Study</b></p>	<p>A repeat HSAT, PSG, or Split Night Study to confirm the diagnosis of sleep disorders <b>meets the definition of medical necessity</b> when the member meets criteria for a HSAT, PSG or split night as outlined above, and at least <b>ONE</b> of the following conditions is met:</p> <ol style="list-style-type: none"> <li>1. Recent HSAT (less than 1 year old) confirmed to be non-diagnostic: <ul style="list-style-type: none"> <li>• A previous home sleep study was technically inadequate and there was a valid attempt to retest the member via HSAT (Of note: there is no minimum required HSAT recording time for HSAT to be considered diagnostic), or</li> <li>• A previous home sleep study failed to establish the diagnosis of OSA in a member with a high pretest probability of OSA.</li> </ul> </li> <li>2. Member has had any of the following <ul style="list-style-type: none"> <li>• a significant change in weight that has impacted signs/symptoms of obstructive sleep apnea, specifically weight gain or weight loss of greater than or equal to 10% of total body weight, when re-evaluation is warranted to modify therapy.</li> <li>• persistent or recurring signs or symptoms of OSA and adherent with PAP therapy</li> </ul> </li> </ol>
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- develop or have a change in cardiovascular status, such as uncontrolled hypertension, hospitalization for heart failure, stroke, cardiac arrhythmia.

3. Reassessment of clinical indicators of obstructive sleep apnea to determine the effectiveness of treatment after surgical intervention:

- Tonsillectomy,
- Adenoidectomy,
- Uvulopalatoplasty (UPPP),
- Maxillomandibular Advancement Surgery (MMA)
- Other upper airway surgery- implantation for treatment of obstructive sleep apnea (hypoglossal nerve stimulation).

4. Implementation and evaluation of a fabricated oral mandibular advancement appliance (OAT) by a qualified healthcare professional:

- a. Treatment efficacy of an oral mandibular appliance may be assessed using HSAT, **OR**
- b. An oral mandibular appliance may be adjusted manually during polysomnography to eliminate sleep disordered breathing in the sleep laboratory by a sleep technologist, and as prescribed by the qualified healthcare professional.
  - The qualified healthcare professional may request in-facility polysomnography (95810) for manual adjustment of the appliance, if meets current criteria for an in lab evaluation
  - Alternatively, the oral appliance may be adjusted in the office empirically and then HSAT may be performed to assess therapeutic efficacy.

**Note:** PAP titration study (CPT code 95811) or split night sleep testing (95811) is not correct coding for adjustment of an oral mandibular appliance.

If previous diagnostic test or baseline study is not available, physician attestation will be accepted and sleep study type will be determined by medical necessity.

If previous diagnostic test or baseline study is not available, physician attestations supporting a diagnosis of OSA will be accepted to support

	<p>the request for replacement pap therapy or supplies, where medical necessity has already been established.</p> <p>Sleep studies performed outside the United States are accepted as long as the sleep report contains sufficient data to determine medical necessity for the diagnosis</p>
<p><b>Repeat Attended Titration Study</b></p>	<p>A repeat in-lab PAP titration (95811) <b>meets the definition of medical necessity</b> for a member who is known to have OSA when (1 and 2 or 3):</p> <ol style="list-style-type: none"> <li>1. A diagnostic sleep test has been submitted to confirm the diagnosis of OSA <b>AND</b> any of the following: <ul style="list-style-type: none"> <li>• The member is documented to have a recurrence of OSA related symptoms, such as snoring, excessive daytime somnolence, fatigue, disrupted sleep, etc. adherent to PAP therapy (use <math>\geq</math> 4 hours per night on 70% of nights during a consecutive thirty (30) day period ), <b>OR</b></li> <li>• The member has a 10% change in body weight which has resulted in a recurrence of OSA-related symptoms, <b>OR</b></li> <li>• The member demonstrates intolerance to PAP therapy and the test is to re-titrate and evaluate for the proper therapeutic pressure and/or modality, OR</li> <li>• The member has upper airway surgery, which has resulted in a recurrence of OSA-related symptoms.</li> </ul> </li> <li>2. The member is not a candidate for APAP based on the presence of one of the following (A, B, or C): <ol style="list-style-type: none"> <li>A. Significant oxygen desaturation found during diagnostic testing: <ul style="list-style-type: none"> <li>• O2 saturation &lt;90% for greater than 15 % of recording time during a diagnostic home sleep apnea test or diagnostic facility based PSG, <b>OR</b></li> <li>• O2 saturation &lt; 80% for greater than 1% of recording time during a diagnostic home sleep apnea test or diagnostic facility based PSG.</li> </ul> </li> <li>B. Comorbid medical conditions such as: <ul style="list-style-type: none"> <li>• Moderate to severe COPD or interstitial lung disease as diagnosed on pulmonary function studies (PFTs) or chronic use of oxygen for the treatment of pulmonary disease</li> </ul> </li> </ol> </li> </ol>

	<ul style="list-style-type: none"><li>• Severe, persistent asthma as defined by use of daily oral corticosteroids and/or immunomodulator biologics</li><li>• Moderate to severe heart failure with New York Heart Association (NYHA) Classification III or IV or reduced EF less than or equal to 40%</li><li>• Moderate to severe pulmonary hypertension, with pulmonary artery pressure greater than 40 mm Hg</li><li>• Neuromuscular/neurodegenerative disorder causing restrictive disease, or hypoventilation such as: severe kyphoscoliosis, myasthenia gravis, amyotrophic lateral sclerosis (ALS), post-polio syndrome, polymyositis, and Guillian-Barré syndrome</li><li>• Acute, uncontrolled or refractory cardiac arrhythmia(s) supported by clinical documentation (such as recurrent palpitations, nocturnal; syncope-dizziness or light-headedness; short of breath, chest pain associated with arrhythmia)</li><li>• Chronic opioid medication use that would increase risk of central sleep apnea, (chronic use defined as use of opioids on most days per week for greater than 3 months)</li><li>• Obesity hypoventilation syndrome, defined as pCO<sub>2</sub> greater than 45 mm Hg and pO<sub>2</sub> less than 60 mm Hg on arterial blood gas.</li></ul> <p>C. Secondary concomitant or associated sleep disorders such as:</p> <ul style="list-style-type: none"><li>• Previously diagnosed periodic limb movement disorder (PLMD), defined as greater than or equal to 15 periodic limb movements per hour resulting in arousal when the arousals are not associated with respiratory events</li><li>• Complex parasomnias, with potentially injurious, disruptive or violent behavior, such as REM Behavior Disorder or sleep walking</li><li>• Narcolepsy, or narcolepsy-related symptoms (i.e. idiopathic hypersomnia), after obstructive sleep apnea has been evaluated and effectively treated as documented by the member's objective adherence to therapy (PAP download)</li><li>• Central sleep apnea or treatment-emergent sleep apnea, defined as central apneas/ hypopneas greater</li></ul>
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	<p>than 50% of the total apneas/hypopneas and central apneas/hypopneas greater than or equal to 5 times per hour</p> <ul style="list-style-type: none"> <li>• Central nervous system disorders which may increase risk of central sleep apnea (e.g. Arnold Chiari malformation)</li> <li>• Nocturnal seizures which are acute and/or not effectively controlled and occurring concomitantly with other sleep disorders.</li> </ul> <p>3. The previous titration study was insufficient to determine the correct pressure to resolve the apnea.</p> <p><b>NOTE:</b> If previous diagnostic test is not available for repeat titration, physician attestation supporting a diagnosis of OSA will be accepted to support the request.</p>
<p><b>Multiple Latency Test (MSLT) Attended Titration</b></p>	<p>A Multiple Sleep Latency Test (MSLT) (95805) <b>meets the definition of medical necessity</b> when previous evaluation has not demonstrated a diagnosis of OSA in the setting of persistent excessive daytime sleepiness and <b>ONE</b> of the following:</p> <ul style="list-style-type: none"> <li>• Epworth Sleepiness Scale greater than or equal to 10</li> <li>• Recent history of routine unintentional naps or lapses into sleep during the day for at least more than 3 months</li> <li>• Recurrent symptoms suggestive of narcolepsy; examples not limited to: <ul style="list-style-type: none"> <li>○ Cataplexy</li> <li>○ Sleep paralysis</li> <li>○ Hypnagogic hallucinations.</li> </ul> </li> <li>• The member is currently on positive airway pressure therapy for the treatment of OSA, is adherent to therapy, download demonstrates resolution of sleep apnea and has persistent daytime sleepiness.</li> </ul> <p><b>Note:</b> The MSLT should be performed when a member is in a fully rested state, and not experiencing sleepiness due to inadequate prior sleep. For this reason, the MSLT is performed during the member’s typical wake hours and always follows a facility-based PSG, (95810) or an in lab titration (95811) for persistent hypersomnia for members adherent to therapy and which the sleep efficacy for CPAP adequacy is objectively measured. The MSLT should not be performed after a split night study (CPT code 95811).</p>

<p><b>Maintenance of Wakefulness Test (MWT)</b></p>	<p>Maintenance of Wakefulness testing (95805) <b>meets the definition of medical necessity</b> to evaluate a member’s response to treatment for a sleep disorder, such as obstructive sleep apnea, narcolepsy or periodic limb movement disorder, especially when the member’s inability to stay awake constitutes a personal or public safety issue.</p> <p><b>Note:</b> Only an MWT (not MSLT) may be performed without a preceding PSG (CPT code 95810) or PAP titration (CPT code 95811), at the discretion of the ordering healthcare professional. The MWT can be performed as a stand-alone test.</p>
<p><b>Actigraphy</b></p>	<p>Actigraphy (95803) <b>meets the definition of medical necessity</b> as a one-time covered service in lieu of paper or electronic sleep logs to evaluate sufficient sleep and to assess sleep-wake schedules prior to MSLT testing.</p> <p><b>Note:</b> It is recommended that actigraphy be performed for at least 7 days to assure the validity of MSLT testing data.</p> <p>Actigraphy alone <b>does not meet the definition of medical necessity</b> in evaluating a member for the diagnosis of obstructive sleep apnea.</p>
<p><b>Diagnostic Testing for Commercial Driver’s License (CDL) or Other Government Licenses</b></p>	<p>Diagnostic testing (CPT codes 95808, 95810 and 95811) for CDL (commercial driver’s license) or other government license purposes <b>does not meet the definition of medical necessity</b> unless the member meets criteria for in facility testing or home testing as noted in the guideline.</p>
<p><b>Sleep Testing in Pediatric Members</b> (Younger than age 18 years)</p>	<p>Sleep disordered breathing in pediatric members younger than age 18 years is evaluated when there is the presence of one or more of the following:</p> <ul style="list-style-type: none"> <li>• Snoring</li> <li>• Labored, paradoxical, or obstructed breathing during the child’s sleep</li> <li>• Sleepiness, hyperactivity, behavioral problems, or learning problems.</li> </ul> <p><b>In-Facility Polysomnography (PSG) or PAP Titration – Pediatric</b></p> <p>Pediatric in-facility polysomnography (PSG) (95782, 95808, 95810) <b>meets the definition of medical necessity</b> for <b>ANY</b> of the following indications:</p> <ul style="list-style-type: none"> <li>• Obstructive sleep apnea is suspected based on clinical signs/symptoms</li> </ul>

- Prior to adenotonsillectomy to treat obstructive sleep apnea or snoring
- Unexplained cor pulmonale
- Following adenotonsillectomy in a child with **ANY** of the following:
  - mild preoperative obstructive sleep apnea with residual symptoms of obstructive sleep apnea or snoring
  - to assess for residual obstructive sleep apnea in child with preoperative evidence of:
    - moderate to severe obstructive sleep apnea, or
    - obesity, or
    - craniofacial anomalies that obstruct the upper airway, or
    - neurologic disorder (e.g., Down syndrome, Prader-Willi syndrome, myelomeningocele).
  - under 3 years old
  - cardiac complications of obstructive sleep apnea syndrome (e.g., right ventricular hypertrophy)
  - failure to thrive
  - Suspected congenital central alveolar hypoventilation syndrome or sleep related hypoventilation due to neuromuscular disorders or chest wall deformities
  - Primary apnea of infancy
  - Evidence of a sleep related breathing disorder in infant who has experienced a brief resolved unexplained event
  - Assessment of response to treatment with an oral appliance
  - Evaluation of child treated with mechanical ventilation for adjustment of ventilator settings.
  - Evaluation prior to decannulation in child treated with tracheostomy
  - Clinical suspicion of an accompanying sleep related breathing disorder in a child with chronic asthma, cystic fibrosis, pulmonary hypertension, bronchopulmonary dysplasia, or chest wall abnormality (e.g., kyphoscoliosis)
  - Parasomnias- when there is a history of sleep-related injurious or potentially injurious disruptive behaviors

- Follow-up or repeat diagnostic study (for child with a diagnosis of OSA) due to changes in growth and development.

**NOTE:** Pediatric Split Night Study (95811) -The member must meet criteria for: Pediatric in-facility polysomnography.

Pediatric in-facility PAP titration and re-titration (95783, 95811) **meets the definition of medical necessity** when the following are met (A and B, or A and C, or A and D):

- A. The pediatric member is diagnosed with obstructive sleep apnea, defined as (1 or 2):
  - 1. AHI or RDI greater than or equal to 1 on polysomnography
  - 2. A pattern of obstructive hypoventilation, defined as at least 25% of total sleep time with hypercapnia (PaCO<sub>2</sub> greater than or equal to 50 mm Hg) in association with one or more of the following:
    - Snoring
    - Flattening of the inspiratory nasal pressure waveform
    - Paradoxical thoracoabdominal motion.
- B. Follow-up for child on chronic PAP support, to determine whether pressure requirements have changed due to growth and development; if symptoms recur while on PAP.
- C. Adenotonsillectomy has been unsuccessful, contraindicated, not considered appropriate, or when definitive surgery is indicated but must await complete dental and facial development in a pediatric member who is found to have obstructive sleep apnea diagnosis established by PSG.
- D. The pediatric member demonstrates intolerance to PAP therapy and the test is to re-titrate and evaluate for the proper therapeutic pressure and/or modality.

**Note:** PAP titration may also be undertaken in a child with other sleep-related breathing disorders (not obstructive sleep apnea) when treatment with noninvasive positive pressure ventilation (NIPPV) is recommended.

The use of Home Sleep Testing devices in pediatric members (younger than age 18 years) **does not meet the definition of medical necessity**. The evidence is insufficient to determine the effects of the technology on health outcomes.

<p><b>Diagnostic Testing for Hypoglossal Nerve Stimulation Implantation</b></p>	<p><b>Prior to Implantation:</b></p> <p>Attended sleep study (polysomnography (PSG) or Home Sleep Apnea Test (HSAT) meets the definition of medical necessity prior to hypoglossal nerve stimulation implantation for the treatment of moderate to severe obstructive sleep apnea when <b>ALL</b> of the following criteria are met:</p> <ol style="list-style-type: none"> <li>1. Body mass index (BMI) is less than 35 kg/m<sup>2</sup>; and</li> <li>2. A polysomnography (PSG) or HST is performed within 24 months of first consultation for HGNS implant; and</li> <li>3. The member has predominantly obstructive events (defined as central and mixed apneas less than 25% of the total AHI); and</li> <li>4. AHI is 15 to 65 events per hour; and</li> <li>5. There is documentation that demonstrates CPAP failure (defined as AHI greater than 15 despite CPAP usage) or CPAP intolerance (defined as less than 4 greater than 15 despite CPAP usage) or CPAP intolerance (defined as less than 4 hours per night, 5 nights per week or the CPAP has been returned) including shared decision making that the patient was intolerant of CPAP despite consultation with a sleep expert.</li> </ol> <p><b>Post Diagnostic Testing following Hypoglossal Nerve Stimulation Implantation:</b></p> <ol style="list-style-type: none"> <li>1. Polysomnography done post-implantation for the purpose of titrating the device parameters and determining therapeutic stimulation settings.</li> <li>2. Following the titration study, subsequent retesting, either HSAT or PSG, can be performed if any of the following occurs: <ul style="list-style-type: none"> <li>• Clinical response is insufficient despite regular treatment with hypoglossal nerve stimulator</li> <li>• Substantial weight gain with return of symptoms.</li> </ul> </li> </ol>
<p><b>Noncovered</b></p>	<p>The following other diagnostic tests <b>do not meet the definition of medical necessity</b> for members with symptoms suggestive of obstructive sleep apnea:</p> <ul style="list-style-type: none"> <li>• Actigraphy testing when used alone is not a validated method of diagnosing obstructive sleep apnea</li> <li>• Acoustic pharyngometry, or SNAP testing with fewer than 3 channels</li> <li>• Cephalographic x-rays for diagnosis of obstructive sleep apnea (Lateral cephalographic x-rays and orthopantograms may be</li> </ul>

	<p>medically necessary for evaluating members for oral appliances; lateral cephalographic x-rays may also be necessary to evaluate members for obstructive sleep apnea surgery)</p> <ul style="list-style-type: none"> <li>• X-rays of the temporomandibular joint or sella turcica</li> <li>• Laryngeal function studies</li> <li>• Sonography</li> <li>• Static charge sensitive bed</li> <li>• Tomographic x-ray</li> <li>• A limited daytime sleep study sometimes used for PAP desensitization and acclimatization (e.g. PAP-Nap” study).</li> </ul> <p>Attended polysomnography (PSG) or home sleep apnea testing (HSAT) <b>does not meet the definition of medical necessity</b> (in children or adults) for the following indications:</p> <ul style="list-style-type: none"> <li>• Chronic lung disease in the absence of symptoms of a sleep disorder</li> <li>• Circadian rhythm disorders</li> <li>• Transient or chronic insomnia</li> <li>• Restless leg syndrome (RLS)</li> <li>• Seizures in the absence of symptoms of a sleep disorder</li> <li>• Depression or other psychiatric disorders</li> <li>• Snoring without evidence suggestive of excessive daytime sleepiness</li> <li>• Screening asymptomatic members with no sleep-related complaints</li> <li>• Members required to be tested by an employer or other government or regulatory agency and who have no symptoms of excessive daytime somnolence or other signs/symptoms of OSA.</li> </ul>
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**BILLING/CODING INFORMATION:**

**CPT Coding:**

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	Sleep study, unattended, simultaneous recording; heart rate, oxygen saturation, respiratory analysis(e.g., by airflow or peripheral arterial tone), and sleep time
95801	Sleep study, unattended, simultaneous recording; minimum of heart rate, oxygen saturation, and respiratory analysis (e.g., by airflow or peripheral arterial tone)
95803	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 (e.g., thoracoabdominal movement)
95807	Sleep study, simultaneous recording of ventilation, respiratory effort, ECG or heart rate, and oxygen saturation, attended by a technologist (Non-covered)
95808	Polysomnography; any age, sleep staging with 1 – 3 additional parameters of sleep, attended by a technologist
95810	Polysomnography; age 6 years or older, sleep staging with 4 or more additional parameters of sleep, attended by a technologist
95811	Polysomnography; age 6 or older, sleep staging with 4 or more additional parameters of sleep, with initiation of continuous positive airway pressure therapy or bi-level ventilation, attended by technologist

### HCPCS Coding:

G0398	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
G0400	Home sleep test (HST) with type IV portable monitor, unattended; minimum of 3 channels

### REIMBURSEMENT INFORMATION:

Reimbursement for Sleep Testing (95782, 95783, 95800, 95801, 95806, 95808, 95810, 95811, G0398, G0399, and G0400) is limited to two (2) in 12 months.

Reimbursement for multiple sleep latency (95805) is limited to one (1) day of testing in 12 months.

**NOTE:** Services in excess of the above limitations are subject to medical review of documentation that supports medical necessity. The following information is required documentation to support medical necessity: physician history and physical, physician procedure note, treatment plan, plan of treatment, electroencephalogram study, and polysomnography (sleep) study.

## LOINC Codes:

Documentation Table	LOINC Codes	LOINC Time Frame Modifier Code	LOINC Time Frame Modifier Codes Narrative
Physician history and physical	28626-0	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim.
Physician procedure note	18733-6	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim.
Neuromuscular electrophysiology studies (i.e., electro – encephalogram study and polysomnography (sleep) study)	27897-8	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim.
Treatment plan, plan of treatment	18776-5	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim.

Procedure 95805 is allowed in addition to (95808, 95810, or 95811). One (1) repeat (95805) may be covered if:

- The first test was invalid or uninterpretable in a member with a high clinical pretest probability of a sleep disorder.
- The member has more than one sleep disorder.

Reimbursement for an overnight stay in an Independent Sleep Center, Sleep Disorder Clinic, or outpatient hospital setting is included in the allowance of the sleep test (95805, 95808, 95810, and 95811.)

Reimbursement for the following supplies is included in the sleep testing procedure (95805, 95808, 95810 and 95811):

- Electrodes (e.g., Apnea monitor), per pair (A4556)
- Lead wires (e.g., Apnea monitor), per pair (A4557)
- Conductive paste or gel (A4558)
- Oxygen probe for use with oximeter device, replacement (A4606)
- Cannula, nasal (A4615)
- Tubing, (oxygen) per foot (A4616)
- Full face mask used with positive airway pressure device, each (A7030)



- Face mask interface, replacement for full face mask, each (A7031)
- Replacement cushion for nasal application device, each (A7032)
- Replacement pillows for nasal application device, pair (A7033)
- Nasal interface (mask or cannula type) used with positive airway pressure device, with or without head strap (A7034)
- Headgear used with positive airway pressure device (A7035)
- Chinstrap used with positive airway pressure device (A7036)
- Tubing used with positive airway pressure device (A7037)
- Filter, disposable, used with positive airway pressure device (A7038)
- Filter, non-disposable, used with positive airway pressure device (A7039)
- Oral interface used with positive airway pressure device, each (A7044).

## PROGRAM EXCEPTIONS:

**Federal Employee Plan (FEP):** FEP is excluded from the National Imaging Associates (NIA) review; follow FEP guidelines.

**State Account Organization (SAO):** Follow SAO guidelines.

### Medicare Advantage Products:

The following were reviewed on the last guideline reviewed date and are located at cms.gov: National Coverage Determination (NCD) for Sleep Testing for Obstructive Sleep Apnea (OSA) (240.4.1); NCD for Continuous Positive Airway Pressure (CPAP) Therapy For Obstructive Sleep Apnea (OSA) (240.4).

The following were reviewed on the last guideline reviewed date and are located at fcso.com: Local Coverage Determination (LCD) Hypoglossal Nerve Stimulation for the Treatment of Obstructive Sleep Apnea (L38398); LCD Polysomnography and Sleep Testing (L33405); Article: Billing and Coding: Polysomnography and Sleep Testing (A57496).

If this Medical Coverage Guideline contains a step therapy requirement, in compliance with Florida law 627.42393, members or providers may request a step therapy protocol exemption to this requirement if based on medical necessity. The process for requesting a protocol exemption can be found at [Coverage Protocol Exemption Request](#).

## DEFINITIONS:

**Actigraphy:** measures physical activity, typically via a wrist-worn movement sensor, employed to estimate sleep and wakefulness based on relative levels of physical inactivity and activity.

**Apnea:** temporary cessation of breathing and, therefore, of the body's intake of oxygen and release of carbon dioxide; cessation of airflow for 10 seconds or more.

**Apnea-Hypopnea Index (AHI):** the total number of apneas and hypopneas per hour of sleep. AHI is an index of severity of obstructive sleep apnea. AHI is calculated by dividing the number of apneas plus the number of hypopneas by the number of hours of sleep.

If the AHI is calculated based on less than 2 hours of continuous recorded sleep, the total number of recorded events used to calculate the AHI must be at least the number of events that would have been required in a 2-hour period (i.e., greater than or equal to 10 events).

**Cataplexy:** sudden attacks of muscular weakness and hypotonia triggered by an emotional stimulus such as laughter, anger, or fear.

**Central Sleep Apnea (CSA):** the repeated cessation of breathing caused by the temporary signal loss from the brain sent to the breathing muscles. CSA is most often seen in patients with neurologic disorders, congestive heart failure and in patients who take certain medications (e.g., opiates, benzodiazepines).

**Electroencephalography (EEG):** evaluates brain waves during different stages of sleep.

**Electrocardiography (EKG/ECG):** measures electrical rhythm of the heart.

**Electromyography (EMG):** evaluates muscle movements during sleep.

**Electrooculography (EOG):** evaluates eye movement during dream (REM) sleep.

**Excessive Daytime Sleepiness:** Score greater than or equal to 10 on the Epworth Sleepiness Scale.

**Home Sleep Apnea Test (HSAT):** also known as portable or unattended sleep test. HAST is conducted in the home setting or in a facility outside of the sleep laboratory. This test is unattended by a sleep technologist and may provide many of the same measurements as an in-lab sleep study, such as brain waves, heart rate, breathing, sleep position and oxygen saturation. This test is used to diagnose OSA in patients without comorbid conditions.

**Hypersomnolence:** excessive sleepiness during the typical period of wakefulness.

**Hypoglossal Nerve Stimulation:** Contracts the genioglossus muscle, the largest upper airway dilator muscle. This causes tongue protrusion and stiffening of the anterior pharyngeal wall, potentially decreasing apneic events. Hypoglossal nerve stimulation systems include an implantable neurostimulator, stimulating leads, and electrodes. Stimulation systems include respiratory sensing leads that permit intermittent stimulation during inspiration. Stimulation parameters are titrated during an in-laboratory polysomnography and can be adjusted by the patient during home use. The device is turned on only during sleep periods.

**Hypnagogic hallucinations:** vivid dream-like experiences, occurring at sleep onset.

**Hypopnea:** an abnormal respiratory event lasting at least ten seconds with at least 30% reduction in thoracoabdominal movement or airflow as compared to baseline, and with at least a 4% oxygen desaturation or a  $\geq 3\%$  oxygen desaturation from pre-event baseline and/or the event is associated with an arousal.

**Insomnia:** an inability to sleep; abnormal wakefulness which may be characterized as difficulty falling asleep or sustained awakenings from sleep.

**Maintenance of Wakefulness Test (MWT):** measures sleep latency when the patient is instructed to attempt to remain awake in an unstimulated environment. MWT measures wakefulness during a person's typical wake period. It is used to assess a person's response to therapy (wakefulness) when

treatment for a sleep disorder (e.g., OSA, PLMD, narcolepsy, etc.) has been undertaken (e.g., PAP, pharmacotherapies, etc.).

**Multiple Sleep Latency Test (MSLT):** measures how quickly the patient falls asleep when instructed to relax in a quiet and dimly lit room. The MSLT is performed to assess pathologic sleepiness during the patient's typical wake period.

**Narcolepsy:** recurrent, uncontrollable, episodes of sleep, often associated with hypnagogic hallucinations, sleep paralysis and cataplexy. Patients experience profound daytime sleepiness.

**Nocturnal:** pertaining to, occurring at, or active at night.

**O<sub>2</sub> Saturation:** percentage of oxygen carried by the blood.

**Obstructive Sleep Apnea (OSA):** characterized by repetitive apneas and/or hypopneas during sleep, caused by complete or partial collapse of pharyngeal airway during sleep. In adults, an apnea/hypopnea index (AHI) greater than or equal to 5 but less than 15 is considered mild OSA. AHI greater than or equal to 15 but less than 30 is considered moderate OSA. AHI greater than or equal to 30 is considered severe OSA. In pediatric patients, an AHI or RDI greater than or equal to 1 is considered abnormal.

**PAP-NAP:** limited sleep study during which sleep technologists provide behavioral coaching and PAP therapy desensitization to sleep patients

**Parasomnia:** abnormal sleep behavior during sleep, such as sleepwalking, sleep talking, sleep eating sleep terrors, dream enactment.

**Periodic Limb Movement Disorder (PLMD):** characterized by an involuntary, repetitive limb movement that may occur during sleep and usually involve the legs. This causes frequent arousals from sleep and often results in excessive daytime sleepiness.

**Polysomnography:** test performed in the sleep laboratory to evaluate the parameters of sleep.

**REM Behavior Disorder (RBD):** parasomnia occurring in REM sleep that primarily afflicts men of middle age or older; with a history of cerebrovascular disease. Presenting symptoms include violent behavior during sleep and dream enactment, typically with memory of the event.

**Respiratory Disturbance Index (RDI):** number of apneas + hypopneas + respiratory-related events during the sleep test divided by the total number of hours slept.

**Respiratory-Event Index (REI);** a measurement of sleep disordered breathing on home sleep apnea testing defined as number of apneas + hypopneas during the sleep test divided by the total sleep or recording time reported in hours.

**Restless Leg Syndrome (RLS):** an unpleasant discomfort typically inside the calves when sitting or lying down, especially just before sleep. This produces an irresistible urge to move the legs and may interfere with the ability to fall asleep. Other extremities or other body parts may also be affected.

**Seizure:** a paroxysmal event resulting from a sudden excessive discharge of the neurons of the cerebral cortex. Lack of sleep facilitates epileptic activity and seizures.

**Sleep paralysis:** experience of being awake but unable to move and lasting a few seconds. By itself, sleep paralysis may be a normal phenomenon. However, when present with other symptoms, it may be a part of the symptomatology of narcolepsy.

**Sleep terrors:** similar to nightmares, but occurring in non-REM sleep. The patient may enact the nightmare without memory of the event.

**Snoring:** noisy breathing occurring during sleep, due to vibration of the uvula and soft palate.

**Split-Night Study:** the initial diagnostic portion of the polysomnography followed by PAP titration therapy occurring during the same sleep test.

**Treatment-Emergent Central Sleep Apnea:** previously known as complex sleep apnea; persistence or emergence of central apneas and hypopneas during the initiation of PAP therapy without a backup respiratory rate for OSA, despite significant resolution of obstructive respiratory events.

**Type I Sleep Study Devices:** capable of recording all of the physiologic parameters and signals defined for polysomnography. The recording is furnished in a sleep laboratory facility in which a technologist is physically present to supervise the recording during sleep time and has the ability to intervene if needed. Minimal requirements include recording of EEG, EOG, chin EMG, anterior tibialis EMG, ECG, airflow, respiratory effort and oxygen saturation. Body position must be documented or objectively measured. A sleep technologist must be in constant attendance during the sleep study.

**Type II Sleep Study Devices:** for sleep studies performed unattended in or out of a sleep lab facility or attended in a sleep lab facility. Type II devices are portable devices that may measure the same channels as Type I testing, except that a heart-rate monitor can replace the ECG. These devices have a minimum of 7 channels (e.g., EEG, EOG, EMG, ECG-heart rate, airflow, respiratory effort, and oxygen saturation and monitors sleep staging). A sleep technologist is not in constant attendance in Type II studies.

**Type III Sleep Study Devices:** for sleep studies performed unattended outside of a sleep lab facility or attended in a sleep lab facility. Type III devices monitor and record a minimum of 4 channels and must record ventilation or airflow, heart rate or ECG, and oxygen saturation. A sleep technologist is not in constant attendance in Type III studies.

**Type IV Sleep Study Devices:** for sleep studies performed unattended outside a sleep laboratory. Type IV devices are portable devices that monitor and record a minimum of three channels. Other measurements may include oximetry and heart rate. The technologist is not in attendance during Type IV sleep studies.

## RELATED GUIDELINES:

[Medical & Surgical Management of Obstructive Sleep Apnea, Snoring, and Other Conditions of the Soft Palate and Nasal Passages, 02-4000-16](#)

[Oxygen, 09-E0400-00](#)

[Positive Airway Pressure Devices, 09-E0000-21](#)

## OTHER:

None applicable.

## REFERENCES:

1. Agency for Health Research and Quality (AHRQ) Comparative Effectiveness Review. Diagnosis and Treatment of Obstructive Sleep Apnea in Adults (July, 2011).
2. Albdewi MA, Liistro G, Tahry RE. Sleep-disordered breathing in patients with neuromuscular disease. *Sleep Breath*. 2018 May;22(2):277-286. Doi: 10.1007/s11325-017-1538-x. PMID: 28702830.
3. American Academy of Sleep Medicine Guidance on Obstructive Sleep Apnea; accessed Nov. 2022 at [faa.gov](http://faa.gov).
4. American Thoracic Society (ATS). Executive summary on the systematic review and practice parameters for portable monitoring in the investigation of suspected sleep apnea in adults. 10/03 (Accessed 01/27/11).
5. Aurora RN, Bista SR, et al, Updated Adaptive Servo-Ventilation Recommendations for the 2012 AASM Guideline: "The Treatment of Central Sleep Apnea Syndromes in Adults: Practice Parameters with an Evidence-Based Literature Review and Meta-Analyses"; *J Clin Sleep Med*. 2016 May 15;12(5):757-61.
6. Blue Cross Blue Shield Association Evidence Positioning System®. 2.01.18 Diagnosis of Obstructive Sleep Apnea Syndrome, 07/24.
7. Blue Cross Blue Shield Association Evidence Positioning System®. 2.01.99 Polysomnography for Non-Respiratory Sleep Disorders, 07/24.
8. Bosschietter PFN, Schoustra E, et al. Daytime polysomnography to perform titration for upper airway stimulation in patients with obstructive sleep apnea. *Sleep Breath*. 2022 Jun;26(2):707-715. Doi: 10.1007/s11325-021-02441-w. PMID: 34319499.
9. Cai SJ, Chen R, Zhang YL, et al. Correlation of Epworth Sleepiness Scale with multiple sleep latency test and its diagnostic accuracy in assessing excessive daytime sleepiness in patients with obstructive sleep apnea hypopnea syndrome. *Chin Med J (Engl)*. 2013;126(17):3245-50.
10. Caples SM, Anderson WM, et al. Use of polysomnography and home sleep apnea tests for the longitudinal management of obstructive sleep apnea in adults: an American Academy of Sleep Medicine clinical guidance statement. *J Clin Sleep Med*. 2021 Jun 1;17(6):1287-1293.
11. Centers for Medicare and Medicaid Services (CMS). National Coverage Determination (NCD) for Sleep Testing for Obstructive Sleep Apnea (OSA) (240.4.1), accessed at [cms.gov](http://cms.gov).
12. Centers for Medicare and Medicaid Services (CMS). National Coverage Determination (NCD) for Continuous Positive Airway Pressure (CPAP) Therapy For Obstructive Sleep Apnea (OSA) (240.4), accessed at [cms.gov](http://cms.gov).
13. Certal VF, Zaghi S, et al. Hypoglossal Nerve Stimulation in the Treatment of Obstructive Sleep Apnea: A Systematic Review and Meta-Analysis. *Laryngoscope*. 2015 May;125(5):1254-64. PMID 25389029.
14. Cloutier MM, Dixon AE, et al Managing Asthma in Adolescents and Adults: 2020 Asthma Guideline Update From the National Asthma Education and Prevention Program. *JAMA*. 2020 Dec 8;324(22):2301-2317. PMID: 33270095.
15. Collop NA, Anderson WM, Boehlecke B, Claman D, Goldberg R, Gottlieb DJ, Hudgel D, Sateia M, Schwab R; Portable Monitoring Task Force of the American Academy of Sleep Medicine. Clinical guidelines for the use of unattended portable monitors in the diagnosis of obstructive sleep apnea in adult patients. Portable Monitoring Task Force of the American Academy of Sleep Medicine. *J Clin Sleep Med*. 2007 Dec 15;3(7):737-47.
16. Deak MC, Kirsch DB. Sleep-disordered breathing in neurologic conditions. *Clin Chest Med*. 2014 Sep;35(3):547-56. Doi: 10.1016/j.ccm.2014.06.009. PMID: 25156770.

17. Epstein LJ, Kristo D, Strollo PJ Jr, et al. Adult Obstructive Sleep Apnea Task Force of the American Academy of Sleep Medicine. Clinical guideline for the evaluation, management and long-term care of obstructive sleep apnea in adults. *J Clin Sleep Med*. 2009 Jun 15;5(3):263-76.
18. First Coast Service Options, Inc. (FCSO). LCD Reference Article: Billing and Coding: Polysomnography and Sleep Testing (A57496); accessed at [fcsso.com](http://fcsso.com).
19. First Coast Service Options, Inc. (FCSO). Local Coverage Determination (LCD): Hypoglossal Nerve Stimulation for the Treatment of Obstructive Sleep Apnea (L38398); accessed at [fcsso.com](http://fcsso.com).
20. First Coast Service Options, Inc. (FCSO). Local Coverage Determination (LCD): Polysomnography and Sleep Testing (L33405); accessed at [fcsso.com](http://fcsso.com).
21. Gay P, Weaver T, Loube D, Iber C. American Academy of Sleep Medicine (AASM). Positive Airway Pressure Task Force Standards of Practice Committee. Evaluation of positive airway pressure treatment for sleep-related breathing disorders in adults. *Sleep* 2006.
22. Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Pulmonary Disease- 2020 Report; accessed at [goldcopd.org](http://goldcopd.org).
23. Kapur VK, Auckley DH, et al. Clinical Practice Guideline for Diagnostic Testing for Adult Obstructive Sleep Apnea: An American Academy of Sleep Medicine Clinical Practice Guideline. *J Clin Sleep Med*. 2017 Mar 15;13(3):479-504.
24. Kent DT, Carden KA, et al. Evaluation of Hypoglossal Nerve Stimulation Treatment in Obstructive Sleep Apnea. *JAMA Otolaryngol Head Neck Surg*. 2019 Sep 26;145(11):1044-1052. PMID 31556927.
25. Kent D, Stanley J, et al. Referral of adults with obstructive sleep apnea for surgical consultation: an American Academy of Sleep Medicine systematic review, meta-analysis, and GRADE assessment. *J Clin Sleep Med*. 2021 Dec 1;17(12):2507-2531.
26. Kirk V, Baughn J, et al. American Academy of Sleep Medicine Position Paper for the Use of a Home Sleep Apnea Test for the Diagnosis of OSA in Children. *J Clin Sleep Med*. 2017 Oct 15;13(10):1199-1203.
27. Kuna ST, Gurubhagavatula I, Maislin G, et al. Noninferiority of functional outcome in ambulatory management of obstructive sleep apnea. *Am J Respir Crit Care Med*. 2011 May 1;183(9):1238-44.
28. Kuna ST. Portable-monitor testing: an alternative strategy for managing patients with obstructive sleep apnea. *Respir Care*. 2010 Sep; 55 (9):1196-215.
29. Krakow B, Ulibarri V, Melendrez D, Kikta S, Togami L, Haynes P. A daytime, abbreviated cardio-respiratory sleep study (CPT 95807-52) to acclimate insomnia patients with sleep disordered breathing to positive airway pressure (PAP-NAP). *J Clin Sleep Med*. 2008 Jun 15;4(3):212-22.
30. Kushida CA, Littner MR, et al. Practice parameters for the indications for polysomnography and related procedures: an update for 2005. *Sleep*. 2005 Apr;28(4):499-521.
31. Lazzareschi I, Curatola A, et al. Sleep-disordered breathing in patients with Chiari malformation type II: a case-control study and review of the literature. *J Clin Sleep Med*. 2022;18(9):2143–2154.
32. Leu RM. Sleep-Related Breathing Disorders and the Chiari 1 Malformation. *Chest*. 2015 Nov;148(5):1346-1352. Doi: 10.1378/chest.14-3090. PMID: 26158759.
33. Malhotra RK, Kirsch DB, et al. Polysomnography for Obstructive Sleep Apnea Should Include Arousal-Based Scoring: An American Academy of Sleep Medicine Position Statement. *J Clin Sleep Med*. 2018 Jul 15;14(7):1245-1247.
34. Marcus CL, Brooks LJ, Draper KA, et al. Diagnosis and Management of Childhood Obstructive Sleep Apnea Syndrome. *Pediatrics* 2012;130(3):576-84.
35. Masa JF, Corral J, Pereira R, et al. Effectiveness of sequential automatic-manual home respiratory polygraphy scoring. *Eur Respir J*. 2013 Apr;41(4):879-87.

36. National Heart, Lung, and Blood Institute (NIH). Arrhythmia; accessed at [nhlbi.hig.gov](http://nhlbi.hig.gov).
37. Paruthi, Shalini, MD. Evaluation of suspected obstructive sleep apnea in children. In: UpToDate, Chervin RD, Hoppin AG (Eds), UpToDate, Waltham, MA; accessed at [uptodate.com](http://uptodate.com).
38. Pereira EJ, Driver HS, Stewart SC, Fitzpatrick MF. Comparing a combination of validated questionnaires and level III portable monitor with polysomnography to diagnose and exclude sleep apnea. *J Clin Sleep Med*. 2013 Dec 15;9(12):1259-66.
39. Piper A, Yee B. Clinical manifestations and diagnosis of obesity hypoventilation syndrome; accessed at [uptodate.com](http://uptodate.com).
40. Quan SF, Schmidt-Nowara W. The Role of Dentists in the Diagnosis and Treatment of Obstructive Sleep Apnea: Consensus and Controversy. *J Clin Sleep Med*. 2017 Oct 15; 13(10): 1117–1119.
41. Ronksley PE, et al. Excessive Daytime Sleepiness is Associated with Increased Health Care Utilization Among Patients Referred for Assessment of OSA. *SLEEP*, Vol. 34, No. 3, 2011.
42. Roth GA, Poole JE, et al. Use of Guideline-Directed Medications for Heart Failure before Cardiac Defibrillator. *J Am Coll Cardiol*. 2016 March 8; 67(9): 1062–1069.
43. Shayeb EM, Topfer LA, Stafinski T, Pawluk L, Menon D. Diagnostic accuracy of level 3 portable sleep tests versus level 1 polysomnography for sleep-disordered breathing: a systematic review and meta-analysis. *CMAJ*. 2014 Jan 7;186(1):E25-51.
44. Skomro RP, Gjevre J, Reid J, et al. Outcomes of home-based diagnosis and treatment of obstructive sleep apnea. *Chest*. 2010 Aug;138(2):257-63.
45. Strollo PJ, Soose RJ, et al. Upper-Airway Stimulation for Obstructive Sleep Apnea. *N Engl J Med*. 2014 Jan 9; 370 (2):139-49.
46. Trikalinos TA, Ip S, Raman G, Cepeda MS, Balk EM, D'Ambrosio C, Lau J. Home diagnosis of obstructive sleep apnea-hypopnea syndrome. Technology Assessment. Prepared for AHRQ by the Tufts-New England Medical Center Evidence-based Practice Center. Rockville, MD: Agency for Healthcare Research and Quality (AHRQ): August 8, 2008.
47. U.S. Food and Drug Administration (FDA); accessed at [fda.org](http://fda.org).
48. Woodson BT, Strohl KP, et al. Upper Airway Stimulation for Obstructive Sleep Apnea: 5-Year Outcomes. *Otolaryngol Head Neck Surg*. 2018 Jul;159(1):194-202. PMID 29582703.
49. Yancy CW, Januzzi JL, et al. 2017 ACC Expert Consensus Decision Pathway for Optimization of Heart Failure Treatment: Answers to 10 Pivotal Issues About Heart Failure With Reduced Ejection Fraction: A Report of the American College of Cardiology Task Force on Expert Consensus Decision Pathways. *J Am Coll Cardiol*. 2018 Jan 16;71(2):201-230.

## COMMITTEE APPROVAL:

This Medical Coverage Guideline (MCG) was approved by the Florida Blue Medical Policy and Coverage Committee on 08/22/24.

## GUIDELINE UPDATE INFORMATION:

12/31/00	New Medical Coverage Guideline.
11/15/01	Reformatted and revised.
01/01/03	HCPCS coding update.
02/15/03	Review and revision of guideline consisting of clarification of coverage criteria for sleep testing.

02/15/04	Review and revision of guideline; consisting of updated references and addition of covered ICD-9 codes.
11/15/04	Addition of ICD-9 code 780.54 as covered diagnosis.
02/15/05	Addition of reimbursement language for sleep study supplies.
09/15/07	Review and revision of guideline consisting of updated references and reformatted guideline.
05/01/08	HCPCS coding update, added G0398, G0399 and G0400.
09/15/08	Review and revision of guideline consisting of updated references.
04/15/09	Revision of Program Exception section for Medicare, relating to home sleep testing.
11/15/09	Scheduled review; position statement unchanged; added accreditation information for sleep study centers; added new 01/01/10 codes; definitions revised; references updated.
04/15/10	Revision of statement regarding place of service.
09/15/10	Revision to guideline; consisting of formatting changes.
01/01/11	Annual HCPCS coding update; deleted 0203T and 0204T; added 95800 and 95801.
04/15/11	Annual review. Position Statement revised to include criteria for home sleep testing. Added position statement regarding repeat sleep studies and SNAP test. Revision of Reimbursement section. Updated definition section. Updated references. Formatting changes.
07/01/11	Revision; formatting changes.
08/15/11	Revision of position statement regarding portable sleep testing devices; formatting changes.
01/01/13	Revision to define "excessive daytime sleepiness"; add 95782 and 95783; revise 95808, 95810, and 95811; update references.
01/01/14	Revision and reformatting of position statement; Program Exceptions section updated; references updated.
06/26/14	Revision to add clarification regarding SNAP testing devices; formatting changes.
01/01/15	Annual review. Position statements updated; references updated; formatting changes.
09/06/16	Page format changes.
12/15/16	Revision; description, position statements, and references updated.
09/15/17	Review; position statement section and references updated.
10/15/18	Review; follow up language if member found to have signs and symptoms of sleep-disordered breathing as part of their routine health evaluation updated; language that states polysomnography is the standard diagnostic test for the diagnosis of OSA in adult patients in whom there is a concern for OSA based on a comprehensive sleep evaluation added; changed wording to "habitual" vs. "disruptive" snoring as an indicator of sleep disordered breathing; chronic opioid medication use as a comorbid condition added; objective adherence with PAP changed from "per night use" to "in a 24 hour period"; and references updated.
09/15/19	Review; "Refractory" added to cardiac arrhythmias in comorbid conditions; additional symptoms/risk factors of OSA added and references updated.
08/15/20	Review; Position statements and references updated.
08/15/21	Review; Position statements, definitions, and references updated.
12/15/22	Review: Position statements, definitions, references updated.



05/22/23	Update to Program Exceptions section.
09/15/23	Review: Position statements, coding, and references updated.
12/15/23	Program Exception section updated.
01/19/24	Revision: Reimbursement section updated.
09/15/24	Review: Position statements, description, and references updated.