Sleep Study/Polysomnography (PSG) - Single Service

Clinical Guidelines for Medical Necessity Review

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Important Notices

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Guideline Information:

Specialty Area: Sleep Medicine
Guideline Name: Sleep Study/Polysomnography (PSG) (Single Service)

Literature review current through: 10/26/2023
Document last updated: 10/27/2023
Type: [**X**] Adult (18+ yo) | [**X**] Pediatric (0-17yo)

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Medical Necessity Criteria

Service: Sleep Study/Polysomnography (PSG) (Single Service)

General Guidelines

- **Units, Frequency, & Duration:** None
- **Criteria for Subsequent Requests:** Inconclusive results; or changes in a condition, such as significant weight change or post-surgical procedures involving the oropharynx; or initiation/confirmation of efficacy of therapy.
- **Recommended Clinical Approach:** Overnight or split-night technologist-attended facility-based polysomnography (PSG) is considered the gold standard for diagnosing obstructive sleep apnea (OSA). Split-night studies are performed both to diagnose strongly suspected OSA and to evaluate response to continuous positive airway pressure (CPAP) treatment over a one-night period[1]. It may be appropriate to complete the CPAP titration study on a second night. Selected patients without severe comorbid conditions may be appropriate candidates for a portable or home sleep study[2]. Multiple Sleep Latency Tests (MSLT) (measures the level of daytime sleepiness and is useful in diagnosing types 1 and 2 narcolepsy and idiopathic hypersomnia) and Maintenance of Wakefulness Tests (MWT) (used to measure the ability to stay awake) may be helpful in addition to PSG testing.[3]
- **Exclusions:** None

Medical Necessity Criteria

Indications

➔ **Sleep Study/Polysomnography (PSG)** is considered appropriate if **ANY** of the following is **TRUE**:

- ◆ **Home-based, non-attended sleep study** and **ALL** of the following are **TRUE**:
  - The patient is an adult with suspected sleep apnea**; AND**
  - The study is **ANY** of the following:
    - **Initial home PSG study** in patient with **ANY** of the following[1,4]:
      - ◆ Excessive daytime sleepiness (EDS) and **ANY** of the following[5]:

- Epworth Sleepiness Scale (ESS) score of 10 or greater[6]; **OR**
- Excessive sleepiness while driving; **OR**
- Loud or intense snoring; **OR**
- Witnessed nocturnal apnea, choking or gasping; **OR**
- Awakening with gasping or choking; **OR**
- Oxygen saturation of less than 90% on overnight pulse oximetry; **OR**

○ **Repeat home PSG study** for **ANY** of the following[1, 4]:

◆ The first study was inconclusive due to technical or equipment failure; **OR**

◆ The patient is unable to sleep or complete enough hours of sleep to allow a clinical diagnosis; **OR**

◆ The results were inconclusive or ambiguous; **OR**

◆ Initiation or evaluation of current therapy is required; **OR**

◆ The patient is on CPAP and has lost or gained a significant amount of weight, requiring re-evaluation to adjust pressure or discontinue CPAP therapy; **OR**

◆ The patient has a return of symptoms after positive initial response to CPAP or if clinical response is not sufficient; **OR**

◆ **Facility-based, technologist-attended** PSG and **ANY** of the following is **TRUE**:

- **Adult with suspected sleep apnea** and **ALL** of the following[1]:
  - Excessive daytime sleepiness (EDS) and **ANY** of the following[5]:
    - ◆ Epworth Sleepiness Scale (ESS) score of 10 or greater[6]; **OR**
    - ◆ Excessive sleepiness while driving; **OR**
    - ◆ Loud or intense snoring; **OR**
    - ◆ Hypertension; **OR**
    - ◆ Witnessed nocturnal apnea, choking or gasping; **OR**
    - ◆ Awakening with gasping or choking; **OR**

        - Oxygen saturation of less than 90% on overnight pulse oximetry; **AND**
    - **ANY** of the following:[1]
        - Significant cardiopulmonary disease[7]; **OR**
        - Potential respiratory muscle weakness due to neuromuscular conditions; **OR**
        - History of stroke; **OR**
        - Chronic opiate medication use[8]; **OR**
        - Concern for significant non-respiratory sleep disorder(s) that require evaluation (e.g., disorders of central hypersomnolence[9], sleep-related movement disorders) or that interfere with accuracy of HSAT (e.g., severe insomnia); **OR**
        - Environmental or personal factors that preclude the adequate acquisition and interpretation of data from HSAT; **OR**
        - Individual (or caregiver) unable to safely use the equipment for home sleep study due to dexterity, mobility, or cognitive function; **OR**
        - Home sleep study is negative, inconclusive, or technically inadequate;[1, 10] **OR**
- Suspected **narcolepsy** with **ALL** of the following:
    - **ANY** of the following:
        - Cataplexy; **OR**
        - Excessive daytime sleepiness; **OR**
        - Hallucinations with the onset of sleep or awakening; **OR**
        - Sleep paralysis; **AND**
    - Multiple Sleep Latency Testing is planned[3]; **OR**
- **Obesity hypoventilation syndrome**[11] (BMI greater than 30, daytime hypercapnia [PaCO2 greater than 45 mmHg without other causes such as kyphosis, myopathy, hypothyroidism, or lung disease]); **OR**
- Suspected **central sleep apnea** or hypoventilation related to sleep; **OR**
- **Parasomnias** (such as undesirable or unpleasant occurrences during sleep, sleepwalking, sleep terrors, rapid

eye movement sleep behavior disorder[12], history of repeated violent or injurious episodes during sleep); **OR**

- **Pediatric individual with suspected sleep apnea** with **ANY** of the following[13,14,15,16]:
    - **Initial PSG test**, as indicated by **ANY** of the following:
        - Evaluation for OSA pre- or post-removal of enlarged tonsils or adenoids; **OR**
        - Down syndrome; **OR**
        - Chiari malformation; **OR**
        - Craniofacial malformation; **OR**
        - Neuromuscular disorder (e.g., Duchenne muscular dystrophy); **OR**
        - Skeletal dysplasia (e.g., achondroplasia); **OR**
        - Suspected periodic limb movement disorder[15]; **OR**
        - Signs and symptoms of obstructive sleep apnea with **ANY** of the following:
            - Snoring; **OR**
            - Daytime sleepiness; **OR**
            - Mouth breathing; **OR**
            - Nocturnal apnea; **OR**
            - Enuresis; **OR**
            - Pulmonary hypertension; **OR**
            - Nasal flaring or other signs of breathing difficulty; **OR**
            - Failure to thrive (weight less than fifth percentile for age); **OR**
            - Hyponasal speech; **OR**
            - Behavioral problems (e.g., hyperactivity, developmental delay, difficulties in school); **OR**
- **Split-night protocol** for strong pretest suspicion of OSA and initiation of treatment with positive pressure device[1]; **OR**
- **Repeat PSG test**, as indicated by **ANY** of the following:
    - For initiation of therapy; **OR**

        - Confirmation of the efficacy of prescribed therapy is needed (e.g., oral appliance, post-operative assessment of response to intervention); **OR**
        - Previous results were inconclusive or ambiguous; **OR**
    - **MSLT** or **MWT** performed in a sleep laboratory are considered appropriate when **ALL** of the following are **TRUE**:[3]
        - Evaluation of presence or treatment response for features of narcolepsy, including, cataplexy, EDS, sleep paralysis, hypersomnia; **AND**
        - Testing consists of five 20-minute nap trials at 2-hour intervals, measuring the onset of sleep and rapid eye movement sleep, immediately following a negative PSG when narcolepsy is suspected; **OR**
    - Repeat **MSLT** or **MWT** testing may be required if initial results are indeterminate or negative when narcolepsy is suspected.

Non-Indications

- ➔ Polysomnography (PSG) or sleep study is **NOT** considered appropriate if **ANY** of the following is **TRUE**:[1,4]
    - **Adult home sleep study** is **NOT** considered appropriate if **ANY** of the following is **TRUE**:
        - Significant cardiorespiratory disease; **OR**
        - Potential muscle weakness due to neuromuscular condition; **OR**
        - Restless legs syndrome[17]; **OR**
        - Hypoventilation syndrome (awake hypoventilation or suspected sleep-related hypoventilation); **OR**
        - Acute opioid use (medication not normally taken by patient)[8]; **OR**
        - Chronic opioid medication use[8]; **OR**
        - History of stroke; **OR**
        - Severe or chronic insomnia[2, 17]; **OR**
        - Patient or caregiver unable to manage equipment; **OR**
    - **Pediatric home-based sleep studies** are **NOT** covered as they are not considered appropriate;[16] **OR**
    - **Facility-based PSG** is **NOT** considered appropriate if **ANY** of the following is **TRUE**:
        - Restless legs syndrome[17]; **OR**

- Acute opioid use (medication not normally taken by patient)[8]; **OR**

◆ **Actigraphy** used for the diagnosis of sleep disorders is **NOT** considered appropriate as it is experimental and investigational; **OR**

◆ **Medicare members**: Facility-based PSG or home sleep studies are **NOT** covered for general screening of asymptomatic individuals[2]; **OR**

◆ PSG and home sleep studies are **NOT** considered appropriate for diagnosis of **ANY** of the following:
- Circadian rhythm sleep disorders; **OR**
- Chronic lung disease; **OR**
- Preoperative evaluation for laser-assisted uvulopalatopharyngoplasty without clinical evidence of suspicion of OSA

Level of Care Criteria

Outpatient

Procedure Codes (HCPCS/CPT)

HCPCS/CPT Code	Code Description
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 (eg, by airflow or peripheral arterial tone), and sleep time
95801	Sleep study, unattended, simultaneous recording; minimum of heart rate, oxygen saturation, and respiratory analysis (eg, 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 (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	Polysomnography; age 6 years or older, sleep staging with 4 or more additional parameters of sleep, attended by a technologist
95811	Polysomnography; age 6 years or 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

Medical Evidence

Khan et al. (2015) performed a systematic review of the peer-reviewed literature regarding central disorders of hypersomnolence. They state that there have been major advances in recent years, particularly in the diagnosis and management of narcolepsy type 1. 24-hour PSG is of important use in the study of idiopathic hypersomnias.[9]

National and Professional Organizations

The American Academy of Sleep Medicine (AASM) has published several guidelines related to testing for OSA and other sleep disorders, including the following:

- Kapur et al. (2017) published the Clinical Practice Guideline for Diagnostic Testing for Adult Sleep Apnea, with a number of clinical recommendations using the GRADE system. The strong recommendation is made for facility-based testing rather than home testing in those with significant cardiorespiratory disease, neuromuscular conditions with respiratory muscle weakness, history of stroke, severe insomnia or chronic opioid use.[1]
- Das et al. (2022) developed a position statement for AASM focusing on enhancing public health and safety by diagnosing and treating OSA in those in the transportation industry. Recommendations have included mandatory testing and treatment for OSA for rail and highway personnel in safety-sensitive positions.[18]
- Kirk et al. (2017) published a position statement regarding home sleep apnea testing for diagnosis of OSA in children. It was their conclusion that home testing is not recommended in children less than 18 years of age. Limited evidence exists comparing attended PSG to home testing.[16]

Centers for Medicare and Medicaid Services (CMS) issued a National Coverage Determination (2009) for Sleep Testing for Obstructive Sleep Apnea and provide coverage for both attended and unattended sleep study performance, with strong emphasis on the type of device used.[2]

The American Heart Association issued a Scientific Statement (2021) regarding OSA and cardiovascular disease. Testing is recommended for a

number of significant cardiovascular conditions including, resistant hypertension, pulmonary hypertension, recurrent atrial fibrillation, heart failure, stroke and survivors of sudden cardiac death. Follow-up testing is recommended to determine effectiveness of treatment.[7]

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Clinical Guideline Revision History/Information

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