MedPOINT MANAGEMENT	**Clinical Protocol:** Polysomnography	
	ORIGINAL EFFECTIVE DATE: 01/10/2011	**REVIEWED/REVISED DATE(S):** 06/18/2019 08/13/2021
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PROTOCOL OVERVIEW

Certain sleep related disorders are diagnosed using polysomnography. PSG's document sleep architecture, including rapid eye movement (REM) related events, and quantify arousals, apneic episodes, oxygen desaturation, cardiac arrhythmias, limb movements and seizure activity. Prior to considering PSG, a thorough sleep history and physical examination that includes respiratory, cardiovascular and neurologic systems as well as a medication history are in order. The PSG may be used for diagnosis and for titration or evaluation of various treatment modalities.

INDICATIONS

Polysomnography is medically indicated in adults when one or more of the following clinical indications are present:

1. Witnessed apnea during sleep greater than 10 seconds in duration, or
2. Any combination of two or more of the following symptoms of sleep apnea:
    a. Excessive daytime sleepiness not explained by other conditions, e.g., poor sleep hygiene, medications, drugs, alcohol, psychiatric or psychological disorders, or
    b. Choking or gasping episodes associated with awakenings, or
    c. Obesity (BMI greater than 30 kg/m2) daytime $PaCO_2$ greater than 45 mm Hg and no hypothyroidism
    d. Unexplained hypertension, or
    e. Craniofacial or upper airway soft tissue abnormalities, or
3. Symptoms suggestive of narcolepsy, (e.g., sleep paralysis, hypnagogic hallucinations, cataplexy), or insomnia unresponsive to treatment by specialist, or
4. Violent or injurious behavior during sleep, or
5. Nocturnal oxygen desaturation with unexplained right heart failure, polycythemia, cardiac arrhythmias during sleep or pulmonary hypertension, or
6. Patients with moderate or severe congestive heart failure, stroke/TIA, coronary artery disease or significant tachycardic or bradycardic arrhythmias with nocturnal symptoms suggestive of a sleep related breathing disorder, or
7. Periodic limb movement disorder
8. Moderate to high risk obstructive sleep apnea including:
    a. Epworth sleepiness scale score of 10 or greater
    b. Hypertension uncontrolled on 3 drug regimen
    c. Overnight oxygen desaturation less than 90%
    d. Excessive daytime sleepiness

REPEAT POLYSOMNOGRAPHY VS. MEDICALL NECESSITY

Repeat polysomnography is considered medically necessary for adults under the following circumstances:

1. To reevaluate the diagnosis of obstructive sleep apnea and need for continued CPAP, if a significant weight loss (>10% of body weight) has occurred since the initial study; or
2. To reevaluate an individual with failure of resolution of symptoms or recurrence of symptoms during treatment, or
3. To evaluate the impact of corrective surgeries for obstructive sleep apnea after appropriate recovery time from surgery, or
4. To titrate CPAP following an initial PSG where obstructive sleep apnea was demonstrated but a split night study was not feasible

Repeat polysomnography is considered not medically necessary in the follow-up of patients with obstructive sleep apnea treated with CPAP when symptoms of sleep apnea have resolved. PSG is also considered not medically necessary for evaluation of the following symptoms or conditions alone in the absence of other features suggestive of obstructive sleep apnea:

1. Snoring
2. Obesity
3. Hypertension
4. Headaches
5. Frequent awakenings
6. Common sleep disturbances, such as insomnia, night terrors, sleep walking, or epilepsy where nocturnal seizures are not suspected
7. Decrease in intellectual function; or
8. Memory loss

Nocturnal hypoxemia in patients with chronic obstructive, restrictive, or reactive lung disease is usually adequately evaluated by oximetry and does not require PSG. However, if a patient's symptoms suggest a diagnosis of OSA, indications for PSG are the same as for those without chronic lung disease. PSG is not routinely indicated to diagnose or treat restless leg syndrome.

Suspicion of the presence of obstructive sleep apnea is the case in the majority of children referred for polysomnography. OSA is believed to occur in approximately 2% of children peaking at 2 to 6 years of age, while habitual snoring occurs in 12-15% of school age children. Although OSA in children is commonly related to the presence of Aden tonsillar hypertrophy, other factors related to dynamic airway collapse appear to be involved. Routine PSG in children with Aden tonsillar hypertrophy, in the absence of other suggestive signs or symptoms of OSA, is not recommended. Also, routine PSG post-operatively following adenotonsillectomy in a child whose symptoms have resolved is not recommended.

Polysomnography for children is considered medically necessary for the diagnosis of sleep disorders when one or more of the following are present:

1. Witnessed apnea greater than two respiratory cycle times (inspiration and expiration), or
2. Excessive daytime somnolence, or altered mental status unexplained by other conditions or etiologies, with enuresis, failure to thrive, mouth breathing or snoring, or
3. Polycythemia unexplained by other etiologies, or
4. Cor pulmonale unexplained by other etiologies, or
5. Down syndrome
6. Neuromuscular disorder
7. Achondroplasia
8. Craniofacial malformation

9. Hypertrophy of tonsils and adenoids where surgical removal poses a significant risk and would be avoided in the absence of sleep disordered breathing.

Routine PSG is considered not medically necessary for the following:

1. Sleep walking or night terrors
2. Routine evaluation of Aden tonsillar hypertrophy in the absence of symptoms suggestive of OSA; or
3. Routine follow-up for children whose symptoms have resolved post-adenotonsillectomy

Repeat polysomnography for children is considered medically necessary in the following circumstances:

1. Initial PSG is inadequate or non-diagnostic and the accompanying caregiver reports that the child's sleep and breathing patterns during the testing were not representative of the child's sleep at home, or
2. A child with previously diagnosed and treated OSA who continues to exhibit symptoms of sleep disordered breathing, or
3. To periodically re-evaluate the appropriateness of CPAP setting based on the child's growth or the presence of recurrent symptoms while on CPAP, or
4. If obesity was a major contributing factor and significant weight loss has been achieved.

Repeat PSG is considered not medically necessary for individuals treated with CPAP when symptoms attributable to OSA have resolved.

CITATION

MCG, "Ambulatory Care", "Polysomnography, Sleep Center", 23rd Edition, 2/26/2019