Policy on Obstructive Sleep Apnea

Originating Council
Council on Clinical Affairs

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Purpose
The American Academy of Pediatric Dentistry (AAPD) recognizes that obstructive sleep apnea (OSA) occurs in the pediatric population. Undiagnosed and/or untreated OSA is associated with cardiovascular complications, impaired growth (including failure to thrive), learning problems, and/or behavioral problems. In order to reduce such complications, AAPD encourages healthcare professionals to routinely screen their patients for increased risk for OSA and to facilitate medical referral when indicated.

Methods
This policy is based on a review of current dental and medical literature pertaining to obstructive sleep apnea including a search with PubMed®/MEDLINE using the terms: sleep apnea and dentistry, obstructive sleep apnea and dentistry, obstructive sleep apnea and attention-deficit hyperactivity disorder (ADHD), sleep disordered breathing; fields: all; limits: within the last ten years, humans, all children zero to 18 years, English, clinical trials, and literature reviews. The search returned 36 articles. The reviewers agreed upon the inclusion of 15 articles that met the defined criteria. When data did not appear sufficient or were inconclusive, policies were based upon expert and/or consensus opinion by experience researchers and clinicians.

Background
Pediatric OSA is a disorder of breathing characterized by prolonged, partial upper airway obstruction and/or intermittent/complete obstruction (obstructive apnea) that disrupts normal ventilation during sleep and normal sleep patterns. OSA affects approximately 18 million people in the United States and is a common form of sleep-disordered breathing. The condition exists in one to five percent of children and can occur at any age, but may be most common in children ages two to seven. Adult criteria for OSA may be used for patients aged 13-18 years. Early diagnosis and treatment of OSA may decrease morbidity. However, diagnosis frequently is delayed.

Obstructive sleep apnea occurs when the muscles in the back of the throat relax, causing the airway to narrow on inspiration. This, in turn, may lower the oxygen level in the blood. This decreased oxygen is sensed by the brain, which then wakes the individual to facilitate breathing. This disruption in breathing may occur multiple times per hour all night long. Ultimately, these cycles of awakening prohibit the apneic person from reaching deep, restful sleep. For this reason, children with untreated OSA may be inappropriately diagnosed as having ADHD.

OSA differs from central sleep apnea. Central sleep apnea (CSA) is less common and occurs when the brain fails to transmit signals to the muscles of respiration. The most common cause of CSA is congestive heart failure or stroke, high altitude, and medication use; however, premature infants also may be predisposed to CSA.

Symptoms of OSA include:

- Excessive daytime sleepiness.
- Loud snoring three or more nights per week.
- Episodes of breathing cessation witnessed by another person.
- Abrupt awakenings accompanied by shortness of breath.
- Awakening with dry mouth or sore throat.
- Morning headache.
- Difficulty staying asleep.
- Attention problems.
- Mouth breathing.
- Sweating.
- Restlessness.
- Waking up a lot.

Signs of untreated sleep apnea in school-aged children may include bed wetting and poor school performance due to misdiagnosed ADHD, aggressive behavior, or developmental delay. Rare sequelae of untreated OSA include brain damage, seizures, coma, and cardiac complications. These children also may experience impaired growth.

Etiology of OSA
Patients with certain anatomic anomalies, craniofacial anomalies, neuromuscular diseases, or Down syndrome are at increased risk for development of obstructive sleep apnea. Anatomic anomalies may include hypertrophic tonsils and

ABBREVIATIONS
Several risk factors have been identified as contributors to OSA. These include craniofacial abnormalities, obesity, and sleep-related breathing disorders. Craniofacial abnormalities, such as midface deficiency or micrognathia, may predispose children to OSA. Additionally, obesity is a significant risk factor, as it can lead to upper airway obstruction. Sleep-related breathing disorders, such as snoring or sleep apnea, can also be indicative of OSA. Pediatric dentists are in a unique position to identify these risk factors during routine dental examinations. They may recognize signs such as a small mouth, a deviated nasal septum, or enlarged tonsils, which are associated with OSA. Other factors to consider include adenoids, tonsillar hypertrophy, and neuromuscular disorders that affect the structure or function of the upper airway.

The diagnosis of OSA should be made by a sleep physician. A referral to a sleep medicine specialist is necessary to confirm the diagnosis. A polysomnography study, which monitors various parameters during sleep, is the gold standard for diagnosing OSA. It includes recordings of heart rate, blood oxygen levels, and respiratory events. The report of the polysomnography study will indicate the number of apneas, hypopneas, and respiratory events per hour of sleep and provide objective evidence of the severity of OSA.

Treatment options for OSA are diverse and depend on the severity of the condition. Non-surgical interventions may include lifestyle changes, such as weight loss or sleep position modification, and medical therapies, such as continuous positive airway pressure (CPAP). Surgical procedures, including adenotonsillectomy, pharyngeal flap surgery, and uvulopalatopharyngoplasty, are often used for more severe cases. The AAPD recommends a multidisciplinary approach, involving collaboration between healthcare providers and the patient and family.

Policy statement
The AAPD encourages healthcare professionals to:

- Screen patients for snoring and sleep-related breathing disorders.
- Screen patients for OSA.
- Assess tonsillar/palatal area for hypertrophy.
- Assess tongue positioning as it may contribute to obstruction.
- Recognize obesity may contribute to OSA.
• Refer to an appropriate medical provider (e.g., otolaryngologist, sleep medicine physician, pulmonologist) for diagnosis and treatment of any patient suspected of having OSA.
• Consider non-surgical intraoral appliances only after a complete orthodontic/craniofacial assessment of the patient’s growth and development as part of a multidisciplinary approach.

References