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**American Association of Oral and Maxillofacial Surgeons**

# Position Paper



## Evaluation and Management of Obstructive Sleep Apnea – Overview

Obstructive Sleep Apnea (OSA) is a common disorder involving collapse of the upper airway during sleep. This repetitive collapse results in sleep fragmentation, hypoxemia, hypercapnia, and increased sympathetic activity, leading to a host of detrimental systemic medical conditions including hypertension, stroke, congestive heart failure, excessive daytime sleepiness, diminished cognitive function and impaired quality of life. It is estimated that upwards of 18-20 million adults in the US require treatment for this disorder; thereby making it a significant public health problem.

OSA occurs over a wide continuum of airway narrowing. Patients with milder forms of apnea may require less intensive intervention when compared to patients with more severe obstructive pathology. As the upper airway anatomy is in intimate relation to (and in function with) the facial region, oral and maxillofacial surgeons possess unique knowledge and training in upper airway and facial anatomy, physiology and surgery. As such, they are uniquely qualified to provide important diagnostic input—through physical examination and imaging studies—into the evaluation of patients suspected of having OSA. Using all available data, the diagnosis of OSA is ultimately made by a qualified physician who is trained in sleep medicine.

In most adult patients with moderate to severe OSA, continuous positive airway pressure (CPAP) is the first line treatment. Successful long-term treatment of OSA with CPAP is difficult to achieve, however, and fewer than 50% of patients on CPAP are adequately treated (as defined by 4 hours of use 70% of nights [Weaver, TE, Level 2 evidence and Kribbs, NB, Level 2 evidence]). It is therefore important that other treatment options are available to patients with OSA.

Oral appliances have been shown to be an effective therapy in a significant percentage of patients with mild to moderate OSA. While not considered a first-line treatment in patients with severe OSA, custom-made oral appliances may be indicated for use in patients with severe OSA who

have failed first-line treatment with CPAP. Oral appliances should be fitted by qualified dental personnel who are trained and experienced in the overall care of oral health, the temporomandibular joint, dental occlusion and associated oral structures (Kushida et al 2006). Oral and maxillofacial surgeons who have received the requisite experience and training to provide oral appliance therapy are qualified to provide this therapy to patients with OSA.

Surgical procedures may be considered as secondary treatment for OSA when the outcome of non-surgical therapy is inadequate, such as when the patient is intolerant of CPAP, or CPAP therapy is unable to eliminate OSA. Surgery may also be considered as a secondary therapy when there is an inadequate treatment outcome with an oral appliance (OA), when the patient is intolerant of the OA, or the OA therapy provides unacceptable improvement of clinical outcomes of OSA. Surgery may also be considered as an adjunct therapy when obstructive anatomy or functional deficiencies compromise other therapies or to improve tolerance of other OSA treatments [Epstein, EJ]. Surgery for OSA has been shown to improve sleep disordered breathing, as well as important clinical outcomes, including improvement in sleepiness and quality of life. Oral and maxillofacial surgeons utilize a variety of hard and soft tissue surgical treatments in the management of OSA. Outside of tracheostomy, maxillomandibular (Jaw) advancement surgery is considered to be the most effective (and often the most well-accepted) therapy for severe obstructive sleep apnea.

In the clinical guidelines for evaluation, management and long-term care of OSA in adults, it is recommended that evaluation for primary surgical treatment be considered in select patients who have airway narrowing and anatomy that is surgically correctible, and in patients in whom nonsurgical therapies, including continuous positive airway pressure (CPAP) therapy, are inadequate or not tolerated by the patient. (Epstein, EJ, Evidence Based Clinical Guideline). While coordination of care with other medical specialists is emphasized in both pediatric and adult patients, surgical treatment of severe, life-threatening

pediatric sleep disordered breathing may require facial skeletal (maxillofacial) procedures, such as distraction osteogenesis, in order to affect airway expansion.

Oral and maxillofacial surgeons receive extensive training during their residencies in jaw advancement surgery and techniques, as well as in the medical and perioperative surgical management of these patients. The AAOMS advocates for routine OMS involvement and participation on the sleep apnea treatment team, and supports the development of multidisciplinary comparative effectiveness trials for management of the OSA patient.

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