



AADSM Protocol for Oral Appliance Therapy for Sleep Disordered Breathing in Adults: An Update for 2012

1. Medical assessment must be made by a physician before oral appliance therapy (OAT) is initiated. (1-4)
 - a. In order to practice within the limits of their license as designated by their state, the dentist refers the patient to the physician for a complete medical evaluation and diagnosis to determine the absence or presence - and severity - of sleep-disordered breathing (SDB), which may include snoring, upper airway resistance syndrome (UARS) or obstructive sleep apnea (OSA). Following diagnosis, the physician sends the patient back to the dentist for OAT as appropriate.
 - Or;
 - b. The physician refers the patient directly to the dentist for OAT as appropriate.
2. The diagnostic sleep study is interpreted by a medical sleep specialist, who provides a copy of the interpretation for review by the dentist. The reviewed copy is maintained in the patient record.
3. The dentist assesses the patient through a complete clinical examination, including a determination of the current health and prognosis of oral tissues that might be affected by OAT. Evaluation of a recent radiographic survey is important to a complete examination. The dentist recommends the choice of appliance (5, 6, 10, 11), discloses relevant fees, and explains the rationale for OAT to the patient while recording all appropriate documentation. A dentist who owns or has any partial ownership of the device, or patent for the device, that is being recommended for treatment must disclose this information to the patient as a potential conflict of interest (COI).
4. The dentist communicates the proposed plan for OAT to the patient's physician and appropriate health care providers and regularly provides them with progress and follow-up notes, as well as other pertinent information. (7)
5. The dentist obtains informed consent from the patient prior to appliance delivery. (19)
6. In accordance with protocol established between the treating dentist and referring physician, the dentist fabricates a custom-made oral appliance and meets with the patient for an initial fitting and adjustment. After this initial fitting, the dentist may obtain objective data during an initial trial period using a portable monitor to verify that the oral appliance effectively improves upper airway patency during sleep by enlarging the upper airway and/or decreasing upper airway

collapsibility. If necessary, the dentist makes further adjustments to the device during a final fitting to ensure that optimal fit and positioning have been attained.* (15-18)

7. Following the final fitting, the dentist refers the patient back to the physician for a medical evaluation and assessment of OAT outcomes. To ensure satisfactory therapeutic benefit, the physician may have the patient undergo overnight polysomnography with the oral appliance in place. If the treatment is sub-therapeutic, the dentist consults with the physician to discuss the possibility of combining positive airway pressure (PAP) therapy with OAT. (16-18)

8. Patients diagnosed with primary snoring may be treated without objective, follow-up data; however, they should be followed up at least annually.

9. Follow-up protocol after the final fitting should include a patient evaluation every six months for the first year and at least annually thereafter. The annual recall exam should verify appliance efficacy and occlusion stability; check the structural integrity of the device; ensure that there is a resolution of symptoms such as snoring and daytime sleepiness; inquire about patient comfort and adherence to therapy; and screen for possible side effects of OAT such as temporomandibular joint (TMJ) pain, tinnitus, dry mouth, periodontal bone loss and tooth mobility. If annual assessment reveals symptoms of worsening OSA or the potential need for additional adjustments to the device, then the dentist communicates this information to the patient's physician. (5, 8, 9, 13)

10. Knowledge of various appliances is strongly recommended, as no single appliance is effective for treatment of all patients. Dentists who treat SDB are encouraged and have a responsibility to routinely pursue additional education in the field. (6, 10-12, 14)

*In describing the process by which a dentist adjusts an oral appliance, this protocol intentionally avoids using the term "titration" because of its association with medical interventions. In medicine this term is used to describe the gradual increase of a drug dose, and in sleep medicine it is associated with incremental changes to the air pressure delivered during polysomnography by positive airway pressure (PAP) therapy, which requires a direct order from a physician.

Bibliography

1. Kushida CA, Morgenthaler TI, Littner MR, et al. American Academy of Sleep Medicine Practice Parameters for the Treatment of Snoring and Obstructive Sleep Apnea with Oral Appliances: An Update for 2005. *Sleep*. 2006; 29(2):240-3.
2. Epstein LJ, Kristo D, Strollo PJ Jr., et al. Adult Obstructive Sleep Apnea Task Force of the American Academy of Sleep Medicine. Clinical Guidelines for the Evaluation, Management and Long-term Care of Obstructive Sleep Apnea in Adults. *J Clin Sleep Med*. 2009; 5(3):263-76.
3. Comparative Effectiveness of Diagnosis and Treatment of Obstructive Sleep Apnea in Adults Tufts Evidence-based Practice Ctr., July 2011. AHRQ publication No. 11-EHCO52 80-99 and 2-5.

4. Chan ASL, Lee RWW, Cistulli P. Dental Appliance Treatment for Obstructive Sleep Apnea. *Chest*. 2007; 132:693-699.
5. Marklund M, Stenlund H, Franklin KA. Mandibular Advancement Device in 630 Men and Women with Obstructive Sleep Apnea and Snoring. Tolerability and Predictors of Treatment Success. *Chest*. 2004; 125:1270-1278.
6. Lawton HM, Battagel JM, Kotecha B. A Comparison of the Twin Block and Herbst Mandibular Advancement Splints in the Treatment of Patients with Obstructive Sleep Apnea: A Prospective Study. *Eur J Orthod*. 2005; 27:82-97.
7. Andren A, M. Sjoquist & A. Tegelberg. Effects on Blood Pressure After Treatment of Obstructive Sleep Apnoea with a Mandibular Advancement Appliance - A Three-year Follow-up. *J of Oral Rehabilitation*. 2009; 36:719-725.
8. Almeida FR, Lowe A, Sung J et al. Long-term Sequellae I of Oral Appliance Therapy in Obstructive Sleep Apnea Patients: Part 1. Cephalometric Analysis. *AJODA*. 2006; 195-204.
9. Almeida FR, Lowe A, Otsuka R et al. Long-term Sequellae I of Oral Appliance Therapy in Obstructive Sleep Apnea Patients: Part 2. Study-model Analysis. *AJODO*. 2006; 205-213.
10. Gagnadoux F, Fleury B, Vielle B et al. Titrated Mandibular Advancement Versus Positive Airway Pressure for Sleep Apnoea. *Eur Respir J*. 2009; 34:914-920.
11. Lam B, Sam K, Mok W et al. Randomized Study of Three Non-surgical Treatments in Mild to Moderate Obstructive Sleep Apnea. *Thorax*. 2007; 62:354-359.
12. Petri N, Svanholt P, Solow B et al. Mandibular Advancement Appliance for Obstructive Sleep Apnea: Results of a Randomized Placebo-controlled Trial Using Parallel Group Design. *J Sleep Res*. 2008; 17:211-229.
13. Ghazal A, Sorichter S, Jonas I et al. A Randomized Prospective Long-term Study of Two Oral Appliances for Sleep Apnoea Treatment. *J Sleep Res*. 2009; 18:321-328.
14. Vandervecken OM, Devolder A, Marklund M et al. Comparison of a Custom-made and a Thermoplastic Oral Appliance for the Treatment of Mild Obstructive Sleep Apnea. *Am J Respir Crit Care Med*. 2008; 178:187-202.
15. Collop NA, Anderson WM, Boehlecke B et al. 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 AASM. *J Clin Sleep Med*. 2007; 3(7):737-747.
16. Campbell AJ, Reynolds G, Tengrove H, et al. Mandibular Advancement Splint Titration in Obstructive Sleep Apnea. *Sleep Breath*. 2009; 13:157-162.

17. Almeida FR, Parker JA, Hodges JS et al. Effect of a Titration Polysomnogram on Treatment Success with a Mandibular Repositioning Appliance. *J Clin Sleep Med*. 2009; 5(3):198-204.
18. Holley AB, Letteri CJ, Shah A. Efficacy of an Adjustable Oral Appliance and Comparison to Continuous Positive Airway Pressure for the Treatment of Obstructive Sleep Apnea Syndrome. *Chest* (online). 2011; 140(6):1511-6.
19. AMA Physician Resources:
<http://www.ama-assn.org/ama/pub/physician-resources/legal-topics/patient-physician-relationship-topics/informed-consent.page>