Q&A: Role of North Carolina Dentists in the Management of Sleep-Related Breathing Disorders
Reference Points for Policy, organized by related number

1. **Can I use questionnaires alone to screen patients for SRBDs?** Because screening questionnaires have not been validated in a dental setting, dentists should not rely on them solely in determining which patients are at-risk of SRBDs. Patients at-risk for SRBDs should be identified additionally by the presence of co-morbid medical disorders and clinical findings upon examination that are associated with SRBDs. Symptoms suggestive of SRBDs can be inventoried by standardized questionnaires such as the Epworth Sleepiness Score and the STOP-BANG OSA screening questionnaire. Under no circumstance should any screening result be considered diagnostic or the basis for initiating oral appliance therapy for SRBDs.

   **To whom should I refer patients who screen at-risk of SRBDs?** Medical providers (MDs or DOs) boarded in sleep medicine, physician assistants (PAs) and nurse practitioners (NPs) who work under their guidance, are most qualified to evaluate for, and to diagnose, SRBDs. Although referral to a sleep physician is preferable, lack of such specialty-trained practitioners, patient preference, or requirements of the patient’s medical insurance may necessitate referral to the patient’s primary care or other managing physician.

   **How can pulse oximetry add to the screening assessment?** Pulse oximetry is not diagnostic for SRBDs but may add to the risk assessment of some dental patients (particularly those with more severe forms of OSA, while at the same time, potentially missing those with milder forms of OSA). Pulse oximetry that samples O2 saturation every second (i.e., “High Resolution Pulse Oximetry”) may be more useful for this purpose than standard pulse oximetry that samples less frequently. Because false positive and false negative readings can occur, a NC licensed physician (preferably a sleep physician) with whom the dentist collaborates is needed to interpret the recordings and other screening information from the patient and to advise the dentist as to whether a referral is indicated.

   **How are home sleep apnea testing devices used?** When used by physicians for diagnosis, criteria established by the American Academy of Sleep Medicine are used to determine if Home Sleep Apnea Testing (HSAT) by portable monitoring devices is appropriate for each patient. The Academy does not endorse HSAT for general screening for SRBDs or as a replacement for the screening recommendations described above. A negative HSAT result does not rule out the presence of SRBDs, and false negative and false positive results are common.

2. **Why should I refer a child patient at risk for SRBDs for evaluation before dental intervention?** First line therapy for children with sleep disordered breathing is adenotonsillectomy, and thus all pediatric patients suspected of having SRBDs should be referred to a pediatrician, preferably a pediatric sleep specialist, or a pediatric otolaryngologist for evaluation before any dental intervention is undertaken. If residual sleep disordered breathing is present post-adenotonsillectomy, adjunctive dental treatments may be indicated and should be discussed with the managing physician.
**What are dental interventions for pediatric SRBDs?** Short-term anecdotal evidence has demonstrated a limited role for dentists in managing pediatric SRBDs. In select cases of children with posterior crossbites, rapid maxillary expansion may provide improvement of residual SRBD after adenotonsillectomy. Mandibular advancement devices in growing children should be undertaken with caution as they may adversely impact craniofacial growth and development, leading to Class III skeletal or dental malocclusions in Class I children or exacerbating a Class III growth pattern. It is recommended that such treatment modalities be limited to orthodontists or pediatric dentists with additional education and training in pediatric sleep disordered breathing.

Oropharyngeal exercises to improve tongue position and to extinguish habitual mouth breathing may be beneficial when used as adjunctive therapy. The type of exercises, the duration and intensity of such therapy, and the optimal age for initiating therapy have not been ascertained. No conclusive evidence exists to date that demonstrates the long-term efficacy of oropharyngeal exercises as a solo therapy to manage or prevent pediatric SRBDs.

At this time dentists are advised against initiating treatment modalities that purported to develop the airway when support for such treatment relies on anecdotal report or airway imaging of patients taken while upright and awake. Moreover, evidence is lacking that demonstrates a strong association between airway anatomy and presence of SRBDs in non-syndromic children.

**Does mandibular retrognathia in a child suggest a risk for SRBD?** Normal children are born with recessive chins. Throughout normal growth and development, a retrognathic mandible (convex profile) becomes more orthognathic (straight profile). If in doubt about whether craniofacial growth and development is dysmorphic, the dentist should refer the child to an orthodontist, pediatric dentist, or oral and maxillofacial surgeon, all of whom have the education and experience to distinguish between normal and dysmorphic skeletal growth.

3. **Why not treat all patients with oral appliances?** CPAP is considered the gold-standard treatment for OSA and nonspecifically expands the airway. Compared to oral appliance therapy, higher therapeutic success is seen in many patients with moderate-to-severe OSA. Compliance with CPAP, however (particularly in those with mild OSA) is low, and CPAP is more likely to result in discontinuation of therapy.

Although older studies report that patients with mild-to-moderate OSA respond more favorably to oral appliance therapy than patients with severe disease, recent studies report that a higher percentage of those with severe OSA respond adequately to oral appliances when used alone or in combination with other therapies for SRBDs such as positive airway pressure (CPAP or BiPAP or AutoPAP). As such, oral appliance therapy may be appropriate for a CPAP-naive patient with severe apnea who prefers this form of treatment.

**Can a patient be treated for snoring without a referral from a physician?** A referral is not required for treatment of patients with a diagnosis of primary snoring. It is critical, however, to note that primary snoring cannot be based on patient report only. If a referral from a physician is not obtained, the diagnosis of primary snoring must be documented by a physician (e.g., by a recent in-lab sleep study or physician-ordered and interpreted home sleep apnea test).

If a patient has gained weight or develops new symptoms or co-morbid medical conditions since the time of the sleep study, a medical referral for the treatment of primary snoring is advised.
4. **When is a referral for treatment needed?** A referral from the patient’s physician is required for oral appliance therapy for OSA. The referral should include the diagnosis and evidence that a physician evaluated the patient face-to-face before and/or after the diagnostic sleep study was conducted.

Under no circumstance should a dentist attempt to diagnose SRBDs and begin treatment for OSA without a referral from the patient’s physician.

**Why should a dentist treat a patient with an oral appliance?** Medicare, the ADA and the NCDS concur that only dentists have the requisite training to evaluate the dental and orofacial health of a patient in determining the appropriateness of oral appliance therapy, of obtaining the impressions of the teeth and surrounding structures, and of fitting the appliances to the teeth. However, most dentists have not been trained in sleep medicine, and additional education is recommended.

5. **Why is consent required for oral appliance therapy?** Given the possibility of side effects of oral appliance therapy as well as the possibility of sub-optimal OAT treatment outcomes, informed consent is imperative. It is recommended that the written informed consent include all of the following:

   i. Description of patient’s diagnosis of SRBD and the medical sequelae of untreated sleep apnea.
   ii. How dentist will collaborate with the patient’s physician(s) in the treatment.
   iii. The necessity of follow-up evaluation by a physician after the appliance is adjusted.
   iv. The necessity of periodic evaluation of the patient and appliance by the dentist.
   v. Abilities and limitations of oral appliance therapy.
   vi. Potential side effects of therapy.
   vii. Appliance longevity.
   viii. Alternative therapies for SRBD.

**Why should pre-treatment dental records be obtained and retained?** Acknowledging that both favorable and unfavorable changes in occlusion (from dentoalveolar as well as from skeletal changes) can occur due to treatment with OAT, the treating dentist should retain records that allow evaluation of changes over time.

6. **What are the most common side effects and how effectively can they be managed?** Short-term side effects include musculoskeletal or TMJ discomfort. Long-term side effects include change in the occlusion due to dento-alveolar tooth movement or repositioning of the mandible. The available evidence, albeit limited, suggests a beneficial effect in the use of templates of the pretreatment occlusion to realign the bite daily and of isometric contraction and stretching exercises for the masticatory muscles. In most patients, the side effects of oral appliance therapy can be successfully managed by a dentist knowledgeable in the practice of dental sleep medicine without the discontinuation of therapy.

7. **How are home sleep apnea testing (HSAT) devices used in the interim adjustment of an appliance?** Following the fitting of an oral appliance by a dentist knowledgeable in the practice dental sleep medicine, objective data as permitted within the scope of the NC State Dental Practice Act may be obtained, interpreted and used to help define the optimal target position of the mandible. These data are recorded by portable monitors issued to the patients for home testing.
The home testing may be performed before or after the customized treatment appliance has been adjusted to achieve symptomatic improvement. Patient-reported symptomatic improvement is known to be an unreliable indicator of treatment efficacy in many patients. Abnormal results from home sleep apnea testing devices or nocturnal pulse oximetry may suggest that the tested jaw position is not adequate to treat the patient’s OSA. A negative test result does not exclude the presence of mild residual OSA, but may suggest that the tested position is adequate for subsequent evaluation by the patient’s physician. Multiple nights of home testing may be required. Recent technology based on home testing that prospectively permits identification of a target position of the mandible may be useful.

The use of portable monitors for the interim adjustment of an oral appliance by the dentist does not preclude the need for subsequent evaluation of the oral appliance therapy by the patient’s physician and for follow-up sleep testing, as should be determined and ordered by the physician.

8. **What types of communication with the patient’s physician and other healthcare providers are expected?** Oral appliance therapy for SRBDs should occur in collaboration with other health care providers. After completing the initial evaluation, the dentist knowledgeable in the practice of dental sleep medicine should provide a written report to the physician who evaluated, diagnosed and referred the patient for oral appliance therapy. In addition, it is recommended that the dentist forward the report to the patient’s general dentist.

After the appliance is adjusted to the dentist’s satisfaction, the patient should return to the referring physician for follow-up evaluation of the efficacy of oral appliance therapy. If a sleep study indicates that OAT has not resolved the OSA, the dentist and physician should discuss the value of further OA titration or the need for combination therapy or an alternative therapy for OSA.

Additional information about communications with the patient’s physician can be found in the following: Levine M, Bennett K, Cantwell M, Postol K, Schwartz D. Dental sleep medicine standards for screening, treating, and managing adults with sleep-related breathing disorders. J Dent Sleep Med. 2018; 5(3):61-68. (https://www.aadsm.org/docs/Levine_Article_Final.pdf)

9. **Who makes the decision regarding the need for a follow-up sleep study?** After the interim adjustment by the dentist knowledgeable in the practice dental sleep medicine, the patient’s physician makes the decision regarding the need for follow-up sleep testing to confirm treatment response or the need for further titration of the oral appliance.

**How long are patients placed on recall?** As long as the patient is being managed with oral appliance therapy, the patient should continue to be monitored by the dentist. Patients who respond adequately to oral appliance therapy should be evaluated at least annually by the dentist who provided the oral appliance to evaluate for side effects, appliance integrity, and treatment effectiveness.

It is recommended that patients placed on recall return for follow up evaluation by their physician at least every three years or sooner if they present new symptoms of OSA, develop new comorbid medical conditions, or gain substantial weight (10% of body weight).

10. **Are there other secondary treatments for OSA when neither CPAP nor OAT is both efficacious and tolerated as a monotherapy?** Prior to consideration of surgery, OAT in combination with other
therapies such as CPAP, positional therapy, treatment of poor nasal airway patency, and weight loss may be indicated for some patients. Surgical procedures such as maxillo-mandibular advancement and/or hypoglossal nerve stimulation may be indicated as the first-line or primary therapy for patients who prefer not to rely on long-term management strategies such as CPAP or OAT.

11. **What training is recommended to practice dental sleep medicine?** There are no universally accepted training criteria or qualifications for the practice of dental sleep medicine. Recognizing that dentists receive little, if any, training in most dental schools, the American Academy of Sleep Medicine and the American Academy of Dental Sleep Medicine in 2015 defined desirable qualification to include at least one of the following, noting that these are not all-inclusive:

   i) Be certified in DSM by a non-profit organization, or
   ii) Be designated as the dental director of a DSM facility accredited by a non-profit organization, or
   iii) Undertake 25 hours (minimum) of recognized CE in DSM in the past two years. To avoid commercial conflict of interest, the Academies recommended further that a non-profit organization or an accredited dental school with a DSM training program provide the CE.

In 2018, the American Academy of Dental Sleep Medicine announced that the Academy’s Qualified Dentist Designation would be awarded only for successfully completing a 25 hour “Mastery” CE program offered by the Academy or one of its accredited universities. Fifteen hours of recognized CE (ADA CERP or AGD PACE) in dental sleep medicine by any provider are required to renew the Designation every two years, once it is conferred.

**Why is CE important?** Dental sleep medicine is rapidly changing. Dentists who practice dental sleep medicine require up-to-date information regarding both scientific and clinical practice advancements.

*For additional clarifications, please email pallen@ncdental.org.*