



Dental Sleep Medicine: The Future is Now!

Viewpoint September 2018 Written by John Viviano DDS D ABDSM



The American Dental Association (ADA) has helped to further define the future of dental sleep medicine (DSM). DSM pertains to the management of sleep-related breathing disorders (SRBDs). These are airway disorders that occur during sleep and include snoring; sound caused by soft-tissue vibration; obstructive sleep apnea (OSA); partial to complete airway obstruction accompanied by a reduction in airflow and blood oxygen desaturation; and upper airway resistance syndrome (UARS), an intermediary condition where sleep architecture is disturbed due to the effort required to breathe through a narrowed airway. SRBDs, caused by anatomical airway insufficiencies and altered respiratory physiology, are associated with metabolic, cardiovascular, respiratory, dental, and other systemic diseases. In children, undiagnosed and/or untreated SRBDs have been associated with cardiovascular problems, impaired growth, and behavioral issues.

When lifestyle changes such as weight loss and avoiding supine sleep are not appropriate or successful, there are 2 first-line conservative therapies for SRBD; Continuous Positive Airway Pressure (CPAP) and Oral Appliance Therapy (OAT). A variety of surgical procedures are also available as adjunctive therapies, or as main therapies, when CPAP and OAT are inadequate or cannot be tolerated by the patient.

CPAP uses a device that maintains airway patency using pressurized air and first appeared on the scene circa 1980. Close to 100% effective, CPAP quickly replaced tracheostomy as “Gold Standard” therapy. However, almost 40 years later, CPAP continues to be haunted by poor patient compliance, leaving many patient airways either under- or unmanaged.

OAT maintains airway patency by supporting the jaw, usually in an advanced position. The 1995 landmark review paper by Schmidt-Nowara et al suggested that OAT be the “first line” of treatment for snoring and mild OSA and could be considered for moderate OSA in patients who demonstrate intolerance to CPAP. In 2006, practice parameters formed by the American Academy of Sleep Medicine’s Standards of Practice Committee recommended that OAT be first line for snoring and mild to moderate OSA and could be considered for severe OSA in patients who demonstrate intolerance to CPAP. The current medical guidelines published in 2015 continue to recommend oral appliances as first line for snoring, but, in addition, OAT is considered a standard of care for all severities of OSA when patients cannot tolerate CPAP or simply prefer an appliance to CPAP; no CPAP trial is required!

An abundance of literature supports OAT efficacy and high compliance levels and has contributed to these guideline changes. The evolution of these guidelines, along with increased public awareness resulting from the spike in media coverage, has resulted in an explosion of interest in DSM.

Recent ADA Resolution on Management of SRBD

A recent resolution passed by the ADA further confirms the role of dentistry for the management of SRBDs by stating that dentists are the only healthcare providers with the knowledge and expertise to provide OAT. The new policy was developed using an evidence brief researched by the Council on Scientific Affairs and establishes the dentist's role in this area of practice.

According to Dr. Craig Ratner, chair of the ADA Council on Dental Practice, "The consensus-based process engaged all interested parties. The result is a comprehensive policy that can help dentists on the front lines help their patients with these potentially life-threatening disorders. Proper recognition and treatment can help prolong the health and lives of our patients."

According to the new ADA policy, passed by the ADA House of Delegates at ADA 2017, the dentist's role in the management of SRBDs includes, but is not limited to, the following:

- Dentists are encouraged to screen patients for SRBDs.
- Patients should be referred, as needed, to the appropriate physicians for proper diagnosis.
- In children, if risk for SRBDs is determined, intervention through medical/dental referral or evidenced-based treatment may be appropriate to help treat the SRBD and/or develop optimal physiologic airway and breathing patterns.
- A dentist should evaluate the patient for the appropriateness of fabricating a suitable oral appliance.
- Dentists should obtain appropriate patient consent.
- Dentists treating SRBDs with OAT should be capable of recognizing and managing the potential side effects through treatment or proper referral.
- Dentists who provide OAT to patients should monitor and adjust the oral appliances for treatment efficacy as needed or, at least, annually.
- Portable monitors may be used by the dentist to help define the optimal target position of the mandible.
- Surgical procedures may be considered as a secondary treatment.
- Dentists treating SRBDs should continually update their knowledge and training of DSM with related continuing education (CE).
- Dentists should maintain regular communication with the patient's referring physician and other healthcare providers.
- Follow-up sleep testing by a physician should be conducted.

ADA Sponsoring Dental CE Programs on Managing SRBD

The Council on Dental Practice plans on sponsoring dental CE and informing our medical colleagues and the public on dentistry's role in managing SRBD. The first ADA CE program, held at the ADA Headquarters in Chicago in August 2018, was sold out. Dubbed "The Children's Airway Health – A Practical Conference," this program reviewed how to recognize compromised airway health in pediatric patients and provided dentists and their team with verbal and clinical skills for engaging families and physicians involved in the diagnostic and treatment pathways. The evidence-based information provided at this program has established the foundation for a completely new area of practice for dentists. This initiative expands our efforts from protecting adult airway patency during sleep, to helping guide the proper development of our children's airways during their formative years.

In adults, SRBDs affect approximately 42 million Americans. To put this into perspective, consider that 20 million Americans suffer from asthma and 23.6 million suffer from diabetes. What makes these statistics even more alarming is that 75% of severe SRBD cases remain undiagnosed. On the milder spectrum of disease, the prevalence of regular snoring is 34.6%. Dentistry has been very busy trying to manage these adult airway issues through OAT, but it is now clear that we will also be playing a role in guiding the proper development of our children's airways, helping to minimize the likelihood that they will develop SRBDs as adults and lowering the incidence of "sleep breathing" issues for future generations.

A few years ago, I wrote an article comparing the current sleep breathing status of a dental patient to the periodontal status of a dental patient in 1960. Let's revisit this concept. During that era, the typical dental practice was what we historically refer to as a "Prophy Mill," with rampant periodontal disease and tooth loss. However, many of us witnessed firsthand the net result of implementing soft-tissue management (STM) programs into the dental office circa 1980; these efforts resulted in a marked improvement in periodontal status and oral health, accompanied by a reduction in tooth loss. In fact, dentistry's efforts to improve overall periodontal status and oral health through systematic diagnostic, therapeutic, and preventative systems have been a huge success, and, thus, the profession should be proud of these accomplishments.

Today, we are in the same position regarding the sleep breathing status and airway health of our dental patients; the current prevalence of snoring and OSA has reached epidemic proportions, and many dental practices are simply not prepared to manage sleep breathing issues. For today's typical practice, the introduction of a well-defined Sleep Disorders Dentistry program will have the same impact on the incidence of SRBD as the STM programs of the 1980s had on the incidence of periodontal disease.

Modern Technologies Assist in the Treatment of SRBD

Along with the evidence-based guidelines and ADA recommendations, there have been many other exciting advances in the field of DSM. Today, we have appliances being designed using CAD/CAM and manufactured using milling machines and 3-D printers. We have the ability to send patients home with a remote control bite-jig that will reposition their jaws through various levels of advancement while documenting their sleep, eventually producing efficacy reports along with optimum setting recommendations. We also have a variety of home sleep-testing equipment useful in establishing the optimum jaw position, as well as a host of other tools and devices that help to facilitate the management of these patients.

CLOSING COMMENTS

It is critical that a dentist interested in practicing DSM becomes well acquainted with the guidelines, the available tools, and the clinical and verbal skills required to manage patient and physician relationships. Dentists seeking to manage snoring and OSA are taking on a tremendous responsibility, often managing medically significant OSA for patients who genuinely cannot tolerate CPAP. If these patients are mismanaged due to not understanding the rules of engagement, or not understanding how to manage untoward side effects or lacking the proper verbal skills to ensure compliance, they may be compromising the patient's life and lifespan. Fortunately, there is an abundance of CE offerings available to obtain the necessary skills, including very good hands-on programs.

The typical dental office should be screening patients for SRBDs, making the appropriate physician referrals to obtain a medical diagnosis, and then participating in the management of such patients with oral appliances when appropriate. Yearly follow-up with these patients is required to review, adjust, and report to the patients' physicians, as well as to optimize appliance calibrations and airway development. Sound familiar? Just like dentistry continues to make a meaningful difference in our patients' periodontal status and oral health, dentistry now stands poised to make a meaningful difference in our patients' sleep breathing status and airway health.

Thanks to the ADA, the future is now!

Dr. Viviano obtained his credentials from the University of Toronto in 1983. His clinic is limited to managing sleep-disordered breathing and sleep-related bruxism. He is a Credentialed Diplomate of the American Board of Dental Sleep Medicine and has lectured internationally, conducted original research, and authored original articles on the management of sleep-disordered breathing. His clinic is the first Canadian facility accredited by the American Academy of Dental Sleep Medicine. Dr. Viviano also hosts the SleepDisordersDentistry LinkedIn Discussion Group and conducts dental sleep medicine CE programs for various levels of experience, including a 4-day mini residency. **He can be reached at (905) 212-7732 or via the website sleepdisordersdentistry.com.**

Disclosure: Dr. Viviano reports no disclosures.