

## Dental Sleep Medicine: An Exciting and Growing Field

The diagnosis of sleep apnea has exploded in the last 10 years. Sleep apnea was always a problem; we just didn't have the resources readily available for testing and diagnosis. Now, there are sleep labs in even small communities and large cities typically have dozens of sleep labs and several accredited sleep centers. This increase in diagnostic capabilities has led to a great increase of patients being diagnosed with obstructive sleep apnea (OSA).

Snoring is caused primarily by vibration of the tissues of the oropharynx and the soft palate. Snoring may be benign (other than disturbing the sleep of the bed partner), it may fragment the person's sleep, or it may be a sign of obstructive sleep apnea.

Obstructive sleep apnea occurs when the tissues of the oropharynx collapse during sleep and block the airway. A complete blockage for 10 seconds or more is referred to as an apnea. A reduction of airflow by 30-50% is referred to as a hypopnea. The level of a person's obstructive sleep apnea is measured by how many apneas and how many hypopneas occur per hour. This is referred to as the apnea-hypopnea index (AHI).

The gold standard for the treatment of obstructive sleep apnea is continuous positive airway pressure (CPAP). Unfortunately, about 10% of patients who are diagnosed with OSA are not willing to try CPAP. Of those who do try CPAP, between 20 and 40% give up within the first year. The reasons for giving up on CPAP include difficulty finding a mask that fits well, mask leak, air leaking through the mouth, skin reaction to the mask, problems with the straps that hold on the mask, bed partner complaints due to the noise of the system, claustrophobia, dry nose or mouth, sinus problems, and even dental problems.

It is with these patients who are unable to use CPAP that the dentist can play a significant role. According to guidelines published by the American Academy of Sleep Medicine, oral appliance therapy is indicated as a first line therapy in mild to moderate sleep apnea and is also indicated in severe sleep apnea when a patient has failed CPAP. Surgery is generally not indicated with OSA and palatal surgeries are rarely successful. As such, the dentist, and oral appliance therapy, becomes the main hope for the patient who has been able to use CPAP.

The principles behind oral appliance therapy are simple. The patient's airway is blocked due to the tongue falling into the throat while the patient is sleeping. The oral appliance keeps the mandible forward during sleep. This is similar to the "head tilt, chin lift" principle used in performing CPR. There are many different appliances on the market that the dentist can employ to achieve the desired result—which is reduction of the apnea's and hypopneas to less than 10 events per hour.

Knowing what appliance to use, how to adjust it, and what to do when the patient has side effects such as TMJ pain, myalgia, tooth movement and bite changes is where the importance of proper education and training comes in.

All too often I have colleagues contact me and ask me what appliance I like to use. They will then say something like, "I just want to treat snoring, and I'm not going to treat sleep apnea patients." Unfortunately they don't realize how ridiculous this statement is because they don't know enough about sleep apnea. There is NO WAY to tell by looking at someone or asking them questions if they are just a snorer or if they have severe sleep apnea. Accurate diagnosis is the key, and this is performed by a medical doctor. Dentists are putting themselves at significant risk if they are treating patients "for snoring" without proper medical evaluation.

Learning how to screen, refer and, if desired, treat OSA patients is straightforward and enjoyable. The impact you can have on your patients' lives is incredible. We are literally dealing with life and death. Dentists are in a unique position to become one of the main doctors to refer patients for sleep studies. We spend much more time with our patients than medical doctors do. We are looking right at the patient's airway (or right in front of it anyway). By asking a few simple questions of new and recall patients you will find, perhaps much to your surprise, that several patients a week have indications for referral for a sleep evaluation. Right now you are missing these indications, because you don't know what to look for and what to ask.

In my focused practice I refer several patients a day who were referred to my office for TMD related evaluation and treatment to sleep doctors for evaluation. I have found that many, many patients who are clenching their teeth are doing so because they have an underlying sleep disorder. They are, in effect, protecting collapse of their airway by clenching their teeth. The brain is much more concerned about us breathing than it is about us hurting our teeth. This "parafunction" may not be parafunction at all but rather a function to help keep us alive. Dr. Gilles Lavigne of the University of Montreal, one of the world's experts on bruxism, has stated that dentists should not fit patients with a flat plane nightguard if the patient is suspected of having OSA. This is because a flat plane nightguard can allow the mandible to fall back, obstructing the airway even worse. Because of this, it is critical that we know what to look for and how to refer for testing.

The dentist's role in the diagnosis and treatment of obstructive sleep apnea will continue to grow. This is a tremendously interesting and exciting field. The dentist is in a position to have an incredible contribution and to literally add years to the lives and life to the years of many, many patients.

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