



*Practice Expansion Through Clinical Specialization*

FEBRUARY 1993 • VOLUME 2  
NUMBER 2 • PAGES 17-32

## Sleep Disorder Treatment Should be a Team Approach between Physicians and Dentists

People who snore or are troubled by other sleep disorders usually seek help from a physician if the problem is severe, but the dentist can play an important role in their treatment.

In fact, with the dramatic growth of sleep disorder treatment centers across the country in recent years, general dentists have an ideal opportunity to work with their medical colleagues in a field that greatly needs their expertise. So says **Arthur M. Strauss, DDS**, a McLean, VA, general practitioner. Strauss is president and founding member of the Sleep Disorders Dental Society (SDDS), a group headquartered in Wexford, PA.

One area where dentists can help is the screening and appropriate referral of patients with sleep disorders. Once the referral is made, the dentist can work with the patient's physician to design and fit various dental appliances that can relieve snoring and the signs and symptoms of other more serious sleep disorders, such as obstructive sleep apnea (OSA), where non-breathing episodes occur during sleep.

"With appropriate training and understanding of what the medical community is dealing with, dentists are the only ones who can develop a dental appliance that doesn't exacerbate a dental disorder," says Strauss. "If a physician

tries to fit a dental appliance — as some do — the appliance could exacerbate temporomandibular joint (TMJ) disease or periodontal disease."

Physicians' concern over prescribing dental appliances was the impetus for SDDS. "The tongue retaining device (TRD — a rubber mouthpiece that pulls the tongue forward to relieve snoring) was developed by a physician so as not to exacerbate a TMJ problem," Strauss says. "So, initially a physician was discussing this problem with other physicians."

The SDDS began after the TRD inventor, **Charles F. Samelson, MD**, enlisted **Michael Alvarez, DDS**, another founding member of the group, to interest and train other dentists in TRD therapy.

SDDS strongly believes dentists can't work alone in treating snoring, OSA, and other sleep disorders. "The upper airway is not dental territory. Snoring is a medical disorder, not a dental disorder," advises Strauss. "So a dentist is getting on dangerous ground going ahead and treating a disorder he's not in a position legally to diagnose. The snorer should get medical attention and should be made aware of the fact that sometimes dental devices, appropriately designed, can help the snoring. But they need to see a physician first to determine the cause of the problem."

### Growing numbers of patients affected

"Initially, snoring and sleep apnea are much more common among men than women," says Strauss. "But as women get older and pass menopause, the statistics level out. From age 30 to 35, about 20% of all people snore, and the ratio of men to women is 4 to 1. But from age 60 to 65, 60% of men and 40% of women snore. About one-tenth of those who snore have sleep apnea, and the condition gets more severe as one gets older."

Strauss says research isn't clear as to why men are more likely to snore than women until their later years, but theories abound. "We believe it has to do with the anatomy and the soft tissue in the upper airway," Strauss comments. "From what we understand, the tissue tends to lose its muscle tone earlier in men than in women. We suspect that at menopause, with the hormonal changes, women's throat muscles become more flaccid and they are more likely to snore."

### Signs and symptoms

Alvarez, who practices dentistry in Fremont, CA, defines snoring as what happens "when there is an obstruction to the free flow of air through the

passages at the back of the mouth and nose. This is the collapsible part of the airway where the tongue and upper throat meet the soft palate and uvula. The snoring is created when these structures strike against each other and vibrate during breathing."

What are some signs the general dentist can look for in determining whether a patient is a snorer? A retruded mandible, a large, long uvula and a large tongue are common indicators, says Alvarez. (See Figures 1, 2, and 3.) Overweight persons with bulky neck tissue also are likely candidates, he says.

Though snoring is sometimes the subject of jokes, it's a serious matter that can interrupt sleep, cause marital discord, and impose a strain on the body, says Alvarez. "When someone snores, the blood oxygen is reduced so the heart must pump harder to circulate enough of the oxygen the body must have," he comments. "Furthermore, heavy snorers tend to have high blood pressure. Loud snorers often show irregularities in heart functions. Loud snoring, especially the pauses that interrupt it, may be signs of sleep apnea."

During sleep apnea, the tongue is sucked completely against the back of the throat, the airway is blocked and breathing stops. In patients with OSA, the airway isn't cleared until the brain's oxygen level falls low enough to partially awaken the sleeper. The tongue then returns to a more normal position and the seal created by the tongue is broken, typically with a loud gasp.

"These episodes last at least 10 seconds and occur as frequently as several hundred times per night," Alvarez says. "Sleep apnea is an illness that can progress in severity and become life-threatening if not detected and properly treated."

### The dentist's role

The medical community's current view of snoring is that it is part of a condition referred to as upper airway resistance syndrome, says Strauss. Sleep apnea is viewed as a more advanced level of snoring, just as high blood sugar can be a precursor of diabetes, pointing again to the need for the dentist and the physician to work together in treating the patient identified as a sleep disorder sufferer, says Strauss.

"If a dentist prescribes a device on his own and removes the snoring symptom, he could be placing the patient in jeopardy because there could be an underlying medical disorder. People can die of heart failure and have strokes from these conditions," he cautions.

Instead, the dentist should be alert to the warning signs of sleep disorders, and refer the patient to a physician. "If the physician recommends dental appliance therapy for the patient, the dentist then can fill the role that a physical therapist fills for an

### A Sample Survey for Dental Patients

How can the dentist survey patients to determine if they might be suffering from a sleep disorder and therefore benefit from an appropriate medical evaluation?

The Sleep Disorders Dental Society suggests the following questions for patients:

- » Do you have excessive daytime sleepiness? Do you need multiple naps? Do you "drowse away" while driving? Are you fatigued regardless of how many hours you have slept?
- » Does anyone complain of your excessive movement while sleeping?
- » Does anyone complain about your snoring?
- » Does anyone report to you that you stop breathing and gasp for air while sleeping?
- » Do you wake up with a morning headache?
- » Do you have high blood pressure?

*For more information, contact:* American Sleep Disorders Association, 1610 14th Street NW, Suite 300, Rochester, MN 55901, (507) 287-6006.

orthopedic surgeon," says Strauss. "That's how the medical profession views the role of the dentist in treating sleep disorders, and it is really the proper view," he says.

Mild or occasional snoring and symptoms of OSA may be reduced by weight loss, regular exercise, or avoiding alcohol, heavy meals, and medications that cause drowsiness within three hours of bedtime. In more severe cases, surgery to the nose, throat, tongue, or jaw might be indicated, or a physician may prescribe nasal continuous positive airway pressure (CPAP), a therapy in which an air compression device and a nose mask are used to force an airway open and aid breathing while the patient sleeps.

Dental appliance therapy is another alternative that has proven to be effective — and is one in which the dentist can play an important role.

"A dental appliance is a small plastic device, similar to an orthodontic retainer or an athletic mouthguard, that can be worn during sleep to prevent the soft throat tissues from collapsing and obstructing the airway," says Strauss. The appliances typically work in one of three ways:

- » to hold the tongue forward,
- » to bring the lower jaw forward,
- » to lift a drooping soft palate.

"A combination appliance may perform two or more of these functions at the same time," says Strauss. "Dentists with training in dental appliance



Figure 1: Patient with retruded mandible.



Figure 2: PA long uvula.



Figure 3: A large tongue with scalloped edge.



Figure 4: The tongue retaining device (TRD).



Figure 5: Herbst orthodontic appliance.



Figure 6: Nocturnal airway patency appliance (NAPA).

therapy can design, construct, and fit these appliances to meet their patients' individual conditions."

Though several standard designs are used, Strauss sees plenty of room for further development. "The number of appliances will continue to grow. We're still in the basic stages of understanding all this."

Recent clinical studies have shown that a well-fitted dental appliance will reduce or eliminate snoring and significantly relieve symptoms of mild and moderate OSA in a majority of patients.

Devices commonly prescribed are:

» A tongue retaining device (TRD), a soft rubber mouthpiece that pulls the tongue forward during sleep. (See Figure 4.) Strauss says the TRD patent requires that dentists must be trained and certified by Alvarez, and must show the certification to the orthodontics lab making the appliance.

» A mandibular repositioning appliance, such as the *Herbst orthodontic appliance*, available through many orthodontics labs. (See Figure 5.) Another one available is the nocturnal airway patency appliance (See Figure 6.) The repositioners move the mandible forward several millimeters, usually between 50% and 75% of the patient's maximum protrusive distance. These appliances don't require any certification before a dentist prescribes them, but Strauss says it's highly recommended a dentist be trained in

their design and construction before fitting them.

» A soft palate lifting appliance that stabilizes the soft palate and thus reduces vibration. This device has been shown to reduce snoring but has not been shown to be effective in treating OSA, says Strauss.

Advantages of the appliances, says Strauss, are that they are relatively small and easy to wear, relatively inexpensive, and involve reversible, non-invasive procedures to correct sleep disorders.

### Getting started

Joining SDDS at an annual fee of \$100 is a good way to tap into the network of researchers, lecturers, and clinicians who specialize in sleep disorder therapy, says Strauss.

Strauss also recommends that general practice dentists network with otolaryngologists and pulmonologists in their communities if they are interested in becoming part of a local treatment team using dental appliance therapy. Even better, they should find out about local sleep disorder treatment centers and check into building referral relationships with them.

"Whoever the patient is referred to, the dentist should encourage him to find out whether the physician is familiar with dental appliances and whether they would be a treatment option." ■