CLINICAL DEEP DIVE: SLEEP DISORDERS

TACKLING SLEEP-RELATED BREATHING DISORDERS WITH TECHNOLOGY

Dr. Lou Shuman and Dr. Steve Carstensen discuss dentists' use of technology in addressing the growing sleep-related breathing disorder epidemic.

[curated by Dr. Lou Shuman with Dr. Steve Carstensen, DDS, FAGD, D.ABDSM]

Each month, Dr. Lou Shuman consults with a dental industry specialist to discuss the latest industry shifts, developments in dental technology, digital dentistry trends, marketing and more.

This month, Dr. Shuman sat down with Dr. Steve Carstensen to discuss technology that dental practitioners can use to address sleep-related breathing disorders. The topic is timely, given the American Dental Association (ADA) adopted a policy on dental treatment of sleep-related breathing disorders a few months ago. Dr. Carstensen is a widely revered expert in dental sleep medicine, having treated sleep apnea and snoring since 1998 at Premier Sleep, a private practice in Bellevue, Washington, where he focuses exclusively on providing dental sleep therapy.

What technology do we need to use to address sleep-related breathing disorders?

Technology is helping us address the biggest problem with sleep-related breathing disorders: Who is at risk? Who needs help? The past process, and to a great extent the present process, requires patients to go to specialized doctors for testing. This puts off many people from learning about their health.

The consumer is being told, over and over, that they can assess their own health at home with devices like FitBit, Apple Watch, many available apps and who knows how many in development. None of these, as far as I know, have been validated against medical tests, but that day is coming soon. To be able to address the community health problem of sleep-related breathing disorders, we need cheaper, faster and easier screening devices we can rely on.

At a professional level, dentists can begin with simple pulse oximetry, labeled a Type 4 monitor. This overnight recording can be interpreted by several software programs to assess for cardiovascular performance over multiple nights. It's not a sleep test, so it's useable in all states for every patient, and, if interpreted by a trained dentist with clinical history correlation, it's a high-quality screener. Studies show significant false negatives, however, so it does require careful medical judgment. It's excellent for oral appliance titration for many patients.

The next level up is a half-step, measuring sleep quality. There is at least one device that uses cardiopulmonary coupling (CPC), combining breathing and heart rates to assess for restful sleep. This doesn't measure any of the traditional parameters, such as oximetry or respiration airflow, but the algorithm combines valid signals to provide an FDA-cleared assessment of sleep quality.

The next level up is a Type 3 monitor, the typical Home Sleep Apnea Test device (HSAT). There are several that have been well-validated against traditional in-lab polysomnography. The use of HSAT by dentists is a subject of

SOLIS IMAGES / SHUTTERSTOCK.COM

much debate right now; one state doesn't allow dentists to order them at all. In another state, dentists can order HSATs but not dispense the units from their offices. As you get involved with sleep, make sure to work with advisers who are knowledgeable of the regulations.

One such dental sleep service provider, SleepArchiTx, has reviewed regulations from all 50 states. Others may have also; it's important that dentists work from current, detailed information. In no state are dentists allowed to diagnose disease with HSAT. HSATs, even when ordered or dispensed by dentists, should be read and interpreted by physicians and therefore the diagnosis is coming from a medical doctor. The benefit of dentists ordering HSATs is that we have a greater opportunity to help the patient take that first step in getting diagnosed and can be part of the conversation in conjunction with the medical doctor in terms of treatment options. Our ADA Policy Statement states that dentists should use them to titrate treatment with oral appliances for diagnosed patients. Physicians use them to diagnose patients and for efficacy testing of whichever treatment is prescribed.

> "Technology is helping us address the biggest problem with sleep-related breathing disorders: Who is at risk? Who needs help? The present process requires patients to go to specialized doctors for testing. This puts off many patients."

Are technology choices different for addressing pediatrics?

Currently, the only real option to screen pediatric patients for sleep-related breathing disorders are non-technological tools such as standardized assessments like BEARS or I'm Sleepy. HSATs are used, but reliability is poor; true diagnosis is only available for children by an attended overnight in-lab sleep test. The special facilities and doctors with training for children's diagnosis aren't widely available. Oximetry and CPC are being studied carefully because of their low cost and ease of use.

What are some key technologies in treating sleep-related breathing disorders?

There are many oral appliances available on the market, so treatment can be applied precisely for different patient situations. Make sure that any appliances you use are FDA-cleared and produced in an FDA-approved lab.

There are some great innovative appliances out there. One is the Aligner Sleep Appliance (ASA) that enables dental practitioners to provide clear aligner therapy and address obstructive sleep apnea at the same time. Adherence to therapy can be verified using embedded sensors, allowing patients who were required to report CPAP usage data to have an alternative solution.

How do dental practitioners get started in screening and treating sleep-related breathing disorders?

Screening for sleep-related breathing disorders needs to be done in a systematic way, not just one-off or occasionally. One excellent way to get started is to get education, not just for yourself but also for your entire team. If you're going to screen patients, everyone in the office will be involved.

Seek technology such as patient-education videos (or even just posters and pamphlets) for your office waiting rooms. These will make it easier for your staff to have meaningful conversations about sleep-related breathing disorders with your patients.

> "In addition to being fulfilling, treating sleep-related breathing disorders can be a terrific avenue to grow your practice financially. The revenue generated from a sleep patient surpassed most general dentistry procedures."

Partnering with companies that provide education, forms and protocols, home sleep apnea testing and patient tracking software can be a big help in getting organized and getting started. Look for companies that not only educate you but also help with implementation. We as practitioners always believe we can do it ourselves, but the reality is that we don't have the time to put all the pieces together.

Treating sleep-related breathing disorders can be complex. Is it worth it?

By treating sleep-related breathing disorders, we have an opportunity not just to improve patients' quality of life but to also prolong their lives. What I've enjoyed is the professional challenge of learning something new that leads directly to my team being more engaged with their patients' health. When our patients reward us with stories about changing their lives, it feels much different than the good feelings we get from excellent dental care.

In addition to being personally fulfilling, treating sleep-related breathing disorders can be a terrific avenue to grow your practice financially. When we learned to provide care efficiently, with great teamwork, the revenue per chair hour generated from a sleep patient surpassed most general dentistry procedures and the referrals continue to help our practice.

Adding a new service is disruptive — but that's true of all change. Because this spans the divide between dentistry and medicine, new systems involving every team member are required, and only you can decide if you want to go it alone or involve one of the service providers that are available to help you and your team get "up to speed" more quickly and with less disruption. Don't forget that training is only one step — you will need ongoing support.

The technology is an easy and fun part of the service, but it only makes sense as part of the bigger mission, to help the people in your community be healthier. Dentists have an ever-increasing role to play in this critical effort. ●

ABOUT STEVE CARSTENSEN, DDS, FAGD, D.ABDSM

Steve Carstensen, DDS, FAGD, D.ABDSM, is an industry expert on dental sleep medicine. He is a Fellow of the Academy of General Dentistry, a Diplomate of the American Board of Dental Sleep Medicine and he completed UCLA's Mini-Residency in Sleep. Dr. Carstensen lectures internationally, directs sleep education at the Pankey Institute and is a guest lecturer at many recognized institutions, including Spear Education, University of the Pacific and Louisiana State University Dental School. He was Chair of the 2010 American Dental Association (ADA) Annual Session, has held several leadership positions at American Academy of Dental Sleep Medicine (AADSM), is Editor in Chief of Dental Sleep Practice Magazine and is on the advisory board of SleepArchiTx.

ABOUT DR. LOU SHUMAN

Dr. Lou Shuman is a long-time contributor to Dental Products Report. He is the president and CEO of Cellerant Consultant Group, the chairman of the Technology Advisory Board at WEO Media, a Venturer-in-Residence at Harvard's Innovation Lab, and the founder of an online dental-education company.