

# Beyond Braces Botox, and Fillers

Permanent cosmetic corrections that improve occlusion and breathing.

As a human race, we are always in the pursuit of trying to achieve symmetry and balance in some form. Facial beauty is no different. In today's society, one sees beauty in symmetry and balance. We try to achieve beauty through cosmetic avenues such as Botox, fillers and other invasive procedures. Alternatively, the ultimate goal is to come up with a technique that would create permanent facial features that simulate beauty with no injections, no fillers, no pain or discomfort. In fact, we are now able to change the facial features to a more balanced symmetry (fig. 1) by simply wearing a biometric appliance at night.

The Daytime Nighttime Appliance (DNA appliance™)

system is designed to unlock the genetic blueprint of each individual to its full potential. This unique appliance reveals the natural, physical beauty that lies within us. Not only does it change facial features of individuals, making them look more



Fig. 1 - Before and Progress at 8 months



ers

handsome or beautiful in a natural, balanced fashion, but it also straightens teeth and increases airway volume while you sleep.

Dentists have been trained to look at patients from a dental, not a cosmetic, perspective. We diagnose patients from the inside; 32 teeth—and not the outside—from facial appearance. Let's look at patients from a different perspective. Let's look at the overall individual symmetry of the patient—the eyes, the nose, the lips—and what balance they present. Let's not only look for crowns, bridges and veneers—but also start looking for symmetry and balance of the facial features. These are the features that we as

dental clinicians seem to bypass when assessing for dental treatment. Our profession has trained us to focus on the oral cavity system and has inadvertently steered us away from facial beauty.

The DNA appliance has other values as well.



Fig. 2 - Before and Progress at 8 months



## BOTOX continued from page 13

We use fixed appliances in our daily treatment of malocclusion, to move teeth, and for stabilization or retention after orthodontic treatment. The DNA appliance system is one that the patient wears only during the early evening and all night. The appliance straightens teeth while the patient sleeps and at the same time enhances craniofacial features.

DNA appliance therapy has only become available for treatment recently, but we have seen remarkable results in a very short period of time. Not only does the DNA appliance

*The importance of midfacial development is that it leads to more balance and symmetry, and hence beauty follows.*

straighten teeth, but it improves the upper airway by increasing facial volume, which ultimately helps patients suffering from Obstructive Sleep Apnea (OSA). However, the most remarkable phenomena associated with the DNA appliance is the facial cosmetic changes that it produces (fig. 2).

The DNA appliance is designed to enhance the airway space, reducing OSA, and improving quality of life for patients. These patients are ones that spend tens of

thousands of dollars attempting to re-create beauty through cosmetic surgery, Botox, fillers or enhancers. What they are missing is the genetic potential that lies within them. Study one's own facial symmetry, and envision what changes an increased face volume would make.

The patented DNA appliance system uses DNA wire™ and patented 3D axial springs™ designed to store kinetic energy, which is released at night during the growth hormone circadian rhythm. This stored-energy is the key that unlocks the genetic potential, turning on cellular growth in the midface and mandible. It increases upper midfacial volume for better airway exchange, and helps establish a more ideal occlusion—and best of all a fuller, noninvasive facial correction (fig. 3).

The upper airway is consistent with facial symmetry. For example, if the patient's midface is underdeveloped on the right, the upper airway is typically underdeveloped on the right side as well. Increased facial volume appears to improve the axial airway dimension. Similarly, an improved airway balances out facial features and puts them in a state of symmetry.

Enhancing the upper airway by wearing a DNA appliance changes a patient's facial features from one with deep nasolabial grooves and thinner lips to one with shallower grooves resulting in larger lip volume. A patient who presents with sagging eyelids, thin lips and deep facial grooves will often see a dramatic improvement, as if a non-surgical face lift had been performed. Our body has the ability to self-correct if

the proper stimuli and conditions are provided. We believe that we are able to expedite the auto-correction mode by using the DNA appliance. By remodeling the bony structures of the maxilla and mandible, developmental morphogenesis takes over, and a shape change consistent with genetically-encoded, temporo-spatial patterning is executed. An increase in volume of the craniofacial architecture is often established. If the oral system of the body becomes stabilized, balance and symmetry are achieved, as the body naturally repairs itself.

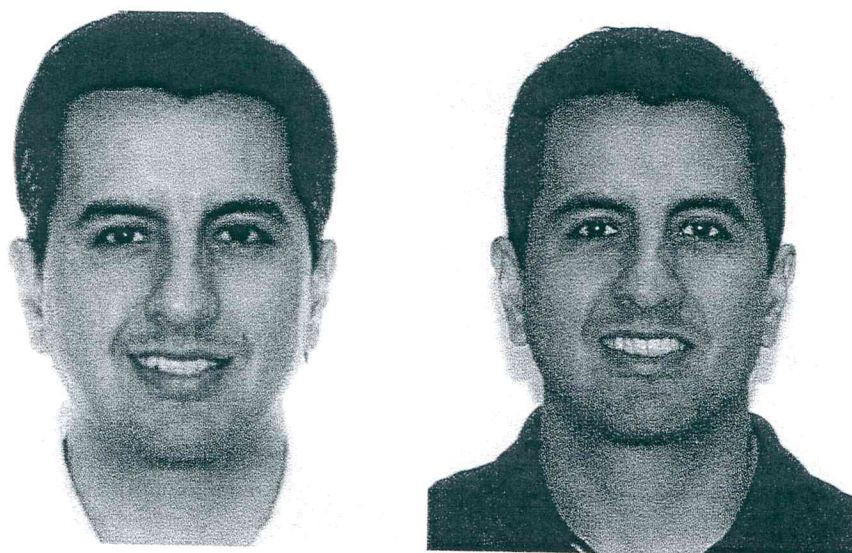


Fig. 3 - Before and Progress at 8 months

continued page 16

## **BOTOX continued from page 14**

The importance of midfacial development is that it leads to more balance and symmetry, and hence beauty follows. Why does all of this develop? Increased oxygenation through an enhanced upper airway. As the airway develops, so does the face—and vice versa. Thus, in lieu of cosmetic injections and fillers to increase facial volume that is transient, the DNA appliance is worn in the early evening and at nighttime to unlock craniofacial development mechanisms that becomes the golden ticket to a more beautiful face.

### **Sleep-disordered breathing increases the risk of cardiovascular disease, stroke, high blood pressure, arrhythmias, diabetes, and driving accidents.**

In the past 12 months, I have transitioned my practice from a restorative and cosmetic practice to Craniofacial and Dental Sleep Medicine. It has been an incredible and rewarding journey, not only financially but professionally. Helping patients discover greater health, more symmetry, and balance in their lives has been incredibly rewarding.

Along the way I discovered the DNA appliance system. I personally have been using the DNA appliance in my practice for almost one year and have over 40 appliances in place. I have seen dramatic improvements in the patients' overall presentation, not only physically but emotionally as well. The astonishing results have not only improved the patients' airways and straightened their teeth, but it has also improved their facial features. We are seeing broader smiles, fuller lips, better and straighter noses leading to happier, healthier patients.



*Dr. Samuel E. Cress, D.D.S., received a Bachelor of Arts Degree from Austin College in Sherman, Texas, and completed his Doctorate of Dental Surgery from the University of Texas Health Science Center San Antonio, Dental Branch. He recently completed a residency program in Dental Sleep Medicine at Tufts University School of Dental Medicine in Boston. Dr. Cress is a member of the American Academy of Dental Sleep Medicine, American Academy of Craniofacial Pain, American and Texas Dental Associations, the Academy of General Dentistry and the Greater Houston Dental Society. Dr. Cress has been in practice and a family of Arrowhead Dental lab since 1995.*

As dental clinicians, we see malocclusion every day in our practice. We also see patients with Obstructive Sleep Apnea everyday but often fail to screen, diagnose or treat it. They are both the same patient. Keep in mind that malocclusion and OSA are compensatory diseases of our modern lifestyle. Scientific literature reveals how we improve a patient's overall health as a result of addressing their OSA issues. Wearing the DNA appliance is not the "fix all to fix all" but a key element for addressing the genetic potential of a patient for a balanced and symmetrical facial body plan. The DNA appliance addresses OSA, malocclusion and midface underdevelopment, bringing them all in line to establish a healthier body. The ultimate goal is to optimize facial balance and symmetry by enhancing the development of the upper and lower face. All of this is accomplished using the DNA appliance system—and best of all one can see results in as little as 90 days.

For more information or to become a certified provider of the DNA Appliance System visit our website: [www.adentmag.com/botox-fillers](http://www.adentmag.com/botox-fillers) or contact Arrowhead Dental Laboratory at 1-800-800-7200.

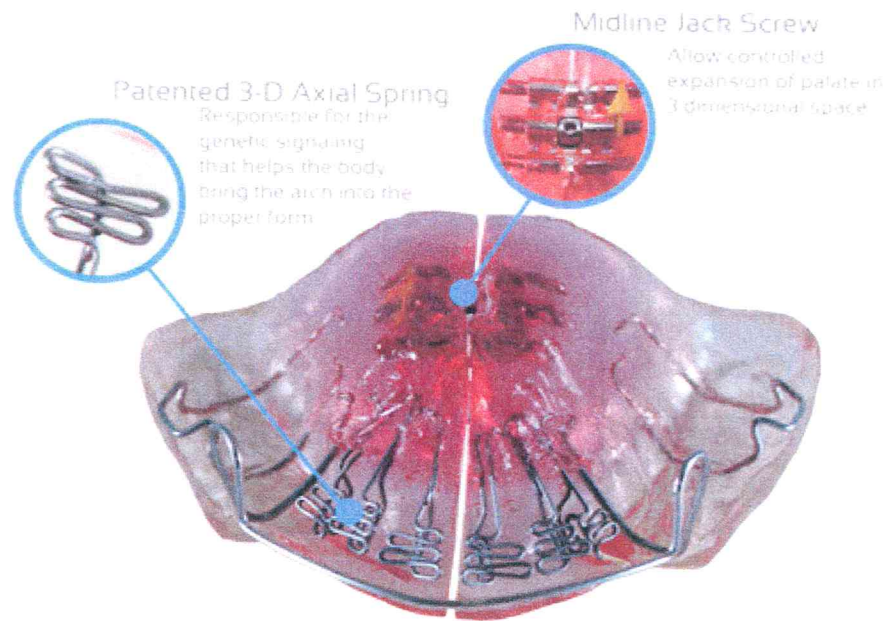
I would like to thank Dr. Dave Singh D.D.Sc., Ph.D. B.D.S., the sole inventor of the DNA appliance system, for his help with this article. ■





*FDA approved Mandibular Repositioning Appliance by SomnoDent*

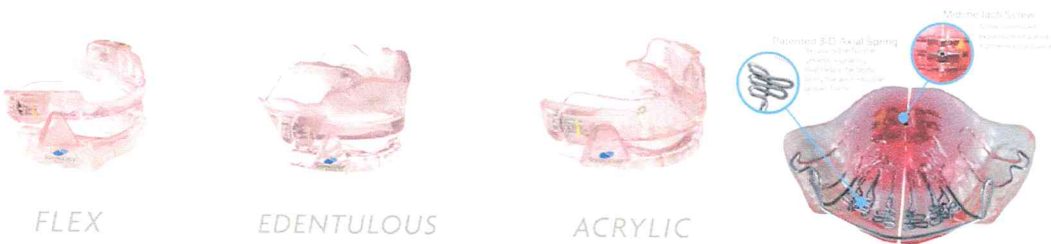
Awaiting FDA approval, DNA™ oral appliance



Continuous Positive Airway Pressure (CPAP)

# ORAL APPLIANCE THERAPY FOR OSA

---



## **An Oral Appliance...**

An oral appliance is worn in the mouth during sleep and helps to improve sleep quality by controlling sleep apnea and snoring. It is held in place by the teeth. There are many FDA approved oral appliances to choose from and the DNA™ oral appliance is waiting FDA approval.

## **The Oral Appliance works as follows...**

The appliance gently positions the lower jaw and tongue slightly forward and opens the space in the back of the throat, which reduces tissue obstruction. This helps keep the airway open and clear during sleep.

## **The Oral Appliance is a Medical Service...**

The U.S. Food and Drug Administration (FDA) has classified oral appliances as Class II medical devices, which is usually covered under most medical plans. Also, the American Academy of Sleep Medicine (AASM) defines Obstructive Sleep Apnea as a medical condition that can be treated by dental professionals who have advanced training in dental sleep medicine. Patients are referred for oral therapy by their physicians only after a sleep study establishes a diagnosis.

## **Indications for Oral Appliance Therapy...**

The oral therapy is recommended to treat mild to moderate OSA. In some cases, an oral appliance may be an effective alternative to the Continuous Positive Airway Pressure (CPAP).

## **Providing service for Oral Appliance Therapy...**

Dentists with advanced training in the field of dental sleep medicine are recommended for custom fitting and installing the oral appliances.

**Tara Griffin, Doctor of Dental Medicine**

**One of 14 dentists certified for the DNA™ appliance in Florida and the only DNA certified Dentist located within 100 miles of Panama City. Website: ECDSM.COM \* 850-249-9331**



# Breathing Easier

## The General Dentist's Role in Treating Obstructive Sleep Apnea

**F**or years, snoring has been the butt of jokes and caused turmoil in American households, exiling bed partners to the living room couch—or even the next town, depending on the frustration level. But all of that noise might be more than a pain in the neck—it could be the harbinger of obstructive sleep apnea (OSA), a serious medical disorder.

### What is OSA?

According to Carol Ash, DO, a pulmonologist and the medical director of the Sleep for Life Program, part of Somerset Medical Center in Hillsborough, N.J., there are about 80 sleep disorders, including sleep apnea. "When you go to sleep, the dilator muscles in the throat relax, and that's common," she explains. "But in sleep apnea, the airway starts to collapse." The tongue may sink to the back of the throat and create an obstruction. When the airway narrows, air turbulence develops and causes snoring. The uvula acts like a flag flapping in the wind. Negative pressure, caused by the pulling down of the diaphragm in an effort to breathe, can contribute to the airway collapse and cause desaturation (oxygen depletion in the blood).

Sleep apneas can be noisy or quiet, says Dr. Ash; some people with sleep apnea will snore, others won't. When the airway collapses, the brain senses the emergency and will yank unsuspecting sufferers out of their slumber in order to kick-start normal breathing again. As a result, the person might snort, choke, or gasp for air. Severe cases of these sleep-wake cycles may recur hundreds of times each night, often without the sufferer even being aware of them.

### Who is at risk?

OSA can and does occur at any age, but most victims fall into the middle and older age groups. In October 2003, the *Journal of the American Medical Association (JAMA)* reported that approximately one in five adults had at least mild OSA, while one in 15 had moderate or severe OSA. The National Heart, Lung, and Blood Institute (NHLBI) division of the National Institutes of Health (NIH) reported in February 2006 that more than 12 million American adults had OSA. Other clinical estimates reach as high as 30 million. Despite the statistics, the disorder hasn't reached a level of national awareness, possibly





because it often goes undiagnosed as a silent condition.

"The numbers regarding undiagnosed patients can be tricky," says Dennis Bailey, DDS, FAGD, an AGD member in Colorado who specializes in the treatment of temporomandibular disorders (TMD) and the use of intraoral appliances to manage snoring and sleep apnea. Dr. Bailey also teaches a university-based training program in dental sleep medicine at UCLA. "The bottom line suggests that there are a lot of people who have the symptoms and signs of sleep apnea, besides snoring, but have not been diagnosed." Dr. Bailey estimates that, when he was a practicing general dentist 10 years ago, roughly 40 percent of his patients showed some sign or symptom of sleep apnea.

Dentists are just as likely as the general public to develop OSA. For some, firsthand experience led them into the field of dental sleep medicine. "I had sleep apnea for almost 25 years and didn't know it," says Ronald Perkins, DDS, MS, a Dallas orthodontist who focuses on managing OSA with intraoral devices. Jeffrey Pancer, DDS, president of the American Academy of Dental Sleep Medicine (AADSM) in Ontario, also has OSA.

Approximately one in five adults had at least mild OSA, while one in 15 had moderate or severe OSA.

### Physical effects of OSA

The effects of OSA go beyond losing sleep for only one night. "We've become a society in which sleep is considered the one commodity that can be sacrificed to accomplish other

tasks," says Dr. Bailey. "But without restful sleep, the body is in a constant state of fight or flight," he adds. "It's under stress."

Going night after night without sleep wreaks havoc on the cardiovascular system. Studies show that patients with OSA are at increased risk for major cardiovascular disease, such as heart attack and stroke. Sleep apnea also has been linked to obesity, hypertension, diabetes, and joint problems. Dr. Ash adds that sleep disorders are the cause of many common illnesses and can cause premature death. In addition, daytime sleepiness caused by sleep deprivation can lead to automobile accidents and other dangerous incidents.

### Diagnosing OSA

If a patient complains about being tired and irritable all the time, it could be sleep apnea, says Eric Z. Shapira, DDS, MAGD, an AGD spokesperson in Montara, Calif. Patients



frequently believe that they can't have OSA, with many of them insisting that they don't snore, he says. Patients typically view their symptoms as isolated conditions instead of recognizing that all of them combined could be the result of sleep apnea. They also tend to attribute a lack of sleep to external factors, such as stress brought on by working long hours, having young children, or worrying about the economy.

Look for bloodshot eyes, black circles around the eyes, and puffy eyes. Dentists also might see a coating on the tongue from mouth breathing, says Dr. Bailey, or scalloping on the edges from clenched teeth. "Redness of the soft palate or an enlarged uvula or tongue also can be signs of OSA," he adds.

Dr. Shapira emphasizes the need to obtain a social history to understand the patient's habits, so that signs of other issues aren't mistaken for OSA.

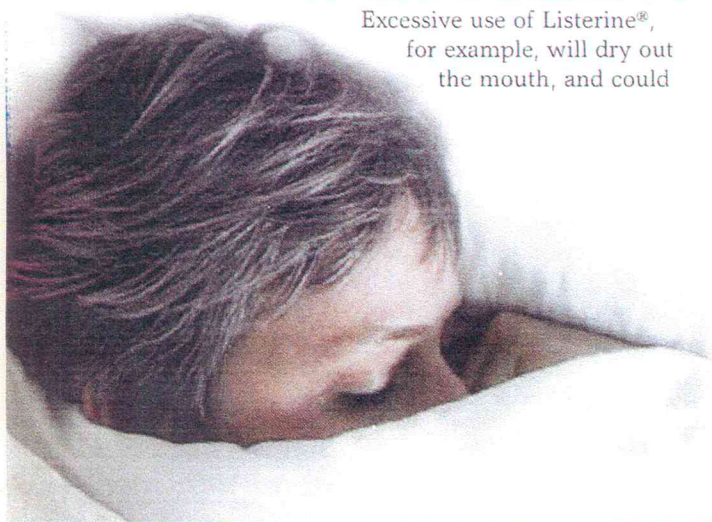
Excessive use of Listerine®, for example, will dry out the mouth, and could

indicate a false positive. Breathing obstructions caused by smoking, alcohol use, or enlarged tonsils or adenoids also can be misleading. "It's one thing to note the signs, but you have to play detective and investigate causes, too," he says. "Dentists can get a lot of false positives, which is why the social history is important."

Keith Thornton, DDS, a general dentist in Dallas and inventor of the Thornton Adjustable Positioner® (TAP®) oral appliance for sleep apnea, says that anecdotal reports rate the patient's levels of daytime sleepiness, which could predict signs of OSA. One such report is the Epworth Sleepiness Scale, introduced in 1991 by Dr. Murray Johns of Epworth Hospital in Melbourne, Australia. "The questionnaire draws an empirical correlation between the information collected on the questionnaire and other predictors, like the Mallampati Score, with the potential for detecting patients who could be at risk for OSA," says Dr. Bailey.

OSA can include partial (hypopnea) or complete (apnea) closing of the pharynx while a person sleeps, says Alejandro Chediak, MD, FACP, immediate past president of the American Academy of Sleep Medicine (AASM) and a Miami, Fla., board-certified specialist in internal medicine, pulmonary diseases, and sleep disorders. "The apnea-hypopnea index (AHI) performed during a sleep study is currently the forerunner in the measurement of OSA severity." AHI indicates the average number of apneas and hypopneas per sleep hour, measured in a sleep laboratory using polysomnography.

Dr. Pancer cautions that symptomology can be a real issue, adding that test results can be misleading. "I've seen patients with an AHI of 5, which is very low, yet they were symptomatic for OSA. My own AHI was 45, but I felt great even though my numbers indicated that I had severe OSA."



## CUSTOM-MADE ORAL APPLIANCES



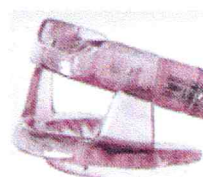
Elastic Mandibular Advancement (EMA®)  
[www.johnsdental.com](http://www.johnsdental.com)



Klearway™  
[www.klearway.com](http://www.klearway.com)



PM Positioner®  
[www.jparkerdds.com](http://www.jparkerdds.com)



SomnoDent MAS™  
[www.somnomed.com](http://www.somnomed.com)



The Silencer®  
[www.the-silencer.com](http://www.the-silencer.com)



SUAD® (Modified Herbst appliance)  
[www.strongdental.com](http://www.strongdental.com)



Thornton Adjustable Positioner® (TAP®)  
[www.sleepwellsolutions.com](http://www.sleepwellsolutions.com)

All of these appliances have been accepted by the FDA for the treatment of snoring and sleep apnea. The fee the dentist pays for the appliance depends on the lab that he or she uses. Dentists should first become familiar with the material used to make the appliance and how to make adjustments to ensure patient comfort.



Measuring adjusted neck circumference is another diagnostic tool that can be done in the office, a service Dr. Thornton offers in his practice. "The sleep test is a tool, but it is not the end-all," says Dr. Chediak. "It helps the medical doctor plan the best therapy."

Dr. Shapira favors using a conservative approach to rule out other causes, such as craniofacial problems or allergies. He concedes that the problem may be sleep apnea but notes that treatments and sleep studies are costly and often are not covered by insurance. "Do your homework first, and inform before you perform," he says.

### Documenting your concerns

Sleep apnea is considered a medical disorder. "The dentist's role in diagnosis lies in recognizing a patient who might be at risk for sleep apnea and in making the appropriate referral to the patient's physician or to a sleep specialist," says Dr. Bailey.

When Dr. Bailey was in general dental practice, he sent letters to patients' physicians whenever he detected signs of a medical disorder, including sleep apnea. This was unheard of at the time, he says, but these days, it's medically and legally prudent to inform both patients and their physicians of your suspicions. "Anyone who has a license to practice health care is obligated to identify all medical conditions and to notify the patient," he says. Reporting possible sleep apnea is no different than noting a suspicious-looking mole on the face, signs of high blood pressure, or indications of diabetes. Dentists also need to be diligent about follow-up. "Be sure to document everything," says Dr. Shapira.

## CHILDREN AND OSA

Despite articles in the *Journal of Pediatrics* and in the sleep literature, "we're just starting to scratch the surface when it comes to children and OSA," says Dennis Bailey, DDS, FAGD, an AGD member in Colorado who specializes in the treatment of temporomandibular disorders (TMD) and the use of intraoral appliances to manage snoring and sleep apnea. Sleep problems often occur in children because of congenital issues, but Dr. Bailey believes that children who are sleep-deprived need to be evaluated by both general dentists and pediatric dentists. "No child should snore, in my opinion," says Ronald Perkins, DDS, MS, a Dallas orthodontist who focuses on managing OSA with intraoral devices. "If they do, they should be evaluated by an ENT." Yosh Jefferson, DMD, MAGD, a general dentist who has limited his practice to orthodontics, TMD therapy, and major oral rehabilitation cases, says that morning crankiness or behavior problems at school could signal a warning for OSA; long, narrow faces may indicate sleep deprivation; and a bluish hue under the eyes can be a sign of allergies or oxygen deprivation. According to Dr. Jefferson, children who have sleep disturbances are often smaller because they lack vital growth hormone production during lesser stages of rapid eye movement (REM) sleep. Finally, Dr. Bailey notes that sleep deprivation can cause attention and behavior problems and increase the risk of obesity.

That documentation could prove valuable from a legal standpoint; for some OSA patients, sleep deprivation could compromise their immune system, which in turn could affect how they respond to dental treatment. In addition, notes Dr. Ash, conscious sedation could impair the brain of a patient with OSA, and the brain might fail to jump-start the breathing process in such a situation. "Dentists have to manage the treatment of patients with OSA differently," she says.

### Working with sleep physicians

Dr. Chediak believes that the intermingling of medical and dental treatment can be a complementary situation, where one's success depends on the other. Care of OSA patients provides a great opportunity for dentists and sleep physicians to work together. "Dentists can be very valuable in the

treatment of sleep apnea," he says. "As sleep physicians, we know how to look at the health outcomes and evaluate if treatment is successful. But I don't have the skill set to construct an oral appliance."

However, Dr. Ash says that dentists are left out of the patient care because

diagnosis and treatment of OSA hasn't been a priority and a lot of physicians haven't received adequate training for follow-up. "Some physicians are not familiar with the processes and the resources. It depends a lot on the physician's frame of reference," she explains. Thus, the dentist might refer the patient to his or her physician for a follow-up, but the process could stop right there if the doctor is unsure of how to obtain a diagnosis. "We all need more education," says Dr. Ash.

Although the fear of litigation or learning a new aspect of the profession are genuine concerns, they shouldn't prevent dentists from being leaders in the field, says T. Bob Davis, DMD, FAGD, an AGD spokesperson and general dentist in Dallas, Texas. "Dentists should be aware of how sleep apnea presents itself and what the disorder can do to general health, in addition to knowing how to design the treatment appliance," he says, adding that dentists and sleep physicians have to work together to provide successful patient care.

"Sleep medicine is a wonderful field," says Dr. Pancer. "It changed my life because we were able to find help for patients. You develop a different relationship with other physicians and help each other."

"Patients with OSA can die, so we desperately need dentists to identify patients with sleep apnea and to learn to make the treatment appliances," says Dr. Ash. "We also need medical doctors to reach out to dentists and embrace these methods to help patients."





Dr. Carol Ash, medical director of Somerset Medical Center's Sleep for Life Program, and Jeff Sank, respiratory therapist, prepare a patient for a sleep study.

## Treatment options

Continuous positive airway pressure (CPAP) or surgery is the most commonly recommended course of action. CPAP works like an air splint, forcing air pressure through a small nasal mask that the patient wears while sleeping, keeping the throat open so that the wearer can breathe normally, says Dr. Pancer. CPAP has been shown to work for patients with moderate to severe OSA; however, some patients simply can't tolerate the device and/or won't wear it. Meanwhile, according to Dr. Ash, surgery often is too extreme to be the first line of treatment. "It's like sending a patient with chest pain straight to the cardiovascular surgeon," she says.

In cases where CPAP isn't tolerated and surgery is too radical, oral appliances might be the answer. "CPAP can save and change lives," says Dr. Ash, "and in the right patient population, oral appliances can do the same thing."

An oral appliance designed to treat OSA gradually brings the jaw forward, which opens the airway. Dr. Pancer says that in clinical trials, oral appliances have proven to be effective for patients with mild and moderate OSA and they are indicated for treatment if the patient prefers the oral appliance to CPAP. However, he emphasizes, dentists need to know which oral appliances are available for treating OSA and how and when to use them.

Dozens of appliances, including the TAP, Klearway™, PM Positioner®, SUAD®, Elastic Mandibular Advancement (EMA®), and SomnoDent MAS™, are specified for treating sleep apnea. However, devices advertised to silence snoring are not indicated for OSA.

Screw mechanisms on oral appliances move the jaw forward in quarter-millimeter increments, says Dr. Thornton. During a series of

follow-up visits, the dentist gradually adjusts the appliance and tests the fit, which has to be comfortable enough for the patient to wear all night. Dr. Shapira advises that patients should be forewarned because initially the bite will feel strange. Not wearing the appliance because of pain or discomfort will defeat the purpose and put the patient at risk, so close monitoring of appliance use is important.

The location of the adjustment mechanism varies from appliance to appliance. For example, the adjustment mechanism for the TAP is located in the front of the appliance. "The TAP provides an easy way to position the jaw while the appliance is seated in the patient's mouth, speeding up the titrating process," explains Dr. Pancer. "Most oral appliances must be removed to titrate the device."

Dr. Thornton has adapted the TAP so that it can be used in combination with CPAP. "The custom mask treats patients who are on a ventilator," says Dr. Thornton. Among those for whom Dr. Thornton designed the PAP-TAP is a patient

in an iron lung. Dr. Thornton receives referrals from all over the country and works closely with Joe Viroslav, MD, a pulmonologist.

## Drawbacks to oral appliances

Oral appliances can alter the bite, change or move teeth, and cause the patient discomfort or even pain. Excessive salivation could discourage patients from using the devices. "Patients salivate like crazy when they first start to wear the appliances," Dr. Pancer says. "They should come in regularly for checkups, to circumvent problems. You might get dramatic changes in a short time, or it might take a long time for problems to develop."

Bite changes are the most common drawback, says Dr. Bailey. Transient bite issues exist briefly, typically in the first half hour after the device is removed. Dr. Thornton recommends a special oral exercise for patients to do after removing the appliance, in order to reset the joint. Dr.

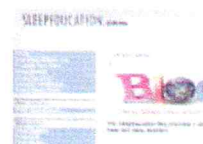
## DENTISTRY AND SLEEP APNEA SOURCES



American Academy of Dental Sleep Medicine (AADSM)  
[www.aadsm.org](http://www.aadsm.org)



American Academy of Sleep Medicine (AASM)  
[www.aasmnet.org](http://www.aasmnet.org)



American Academy of Sleep Medicine (AASM)  
[www.sleepeducation.com](http://www.sleepeducation.com)  
An educational tool and interactive forum for the general public and persons affected by sleep disorders.



## THE ROLE OF THE GENERAL DENTIST

Following a diagnosis from an accredited sleep study, and when appliance therapy is recommended by a sleep doctor and selected by the patient, the dentist will construct an oral appliance and manage patient follow-up care and treatment, in collaboration with the patient's physician. According to Keith Thornton, DDS, a general dentist in Dallas and inventor of the Thornton Adjustable Positioner® (TAP®) oral appliance for sleep apnea, making an oral appliance to manage sleep apnea is similar to making a bite guard. The dentist takes an

upper and lower impression and measures the protrusive range of motion, starting from where the teeth come together and then pushing the jaw forward as far as it can go. The patient must be comfortable in this position and the airway must be open.

Anatomical bite issues, range of motion in the joints, mobility of the teeth, small mouths, and recessed chins require evaluation to determine if the patient is a good candidate for appliance therapy. "Dentists can't learn all of this in a few hours and be ready to hit the ground running,"

cautions Dennis Bailey, DDS, FAGD, an AGD member in Colorado who specializes in the treatment of temporomandibular disorders (TMD) and the use of intraoral appliances to manage snoring and sleep apnea. "It takes a series of courses to get it right." All dentists should be aware of and understand the effect of these oral appliances on the temporomandibular joints, adds Ronald Perkins, DDS, MS, a Dallas orthodontist who focuses on managing OSA with intraoral devices. A correctly fitted appliance for sleep apnea brings the jaw forward and supports the TMJ.

Perkins has modified the TAP to balance the bite in the back. "Most OSA patients clench their teeth," he explains. "Balancing the device with two posterior pads alleviates some of that stress."

Some patients have no problems at all with appliance therapy. If the appliance is balanced, tooth pain, joint pain, and bite changes should be minimal. "Once you've worked several cases, when a patient comes in with a problem, you'll know what it is immediately," says Dr. Perkins.

A bite change is a minor issue, however, compared to the morbidity and mortality of sleep apnea, says Dr. Thornton. Patients must understand the follow-up care necessary to manage sleep apnea successfully with an oral appliance. Be sure that patients understand that if the appliance isn't working, they need to see their physician and get CPAP instead.

Internet devices and products advertised to treat snoring are risky at best for treating OSA. "Snoring is a symptom, but it isn't sleep apnea," says Dr. Ash. A severe risk of using snoring devices to treat sleep apnea is that the device might silence a noisy apneic, perhaps forever, warns Dr. Shapira. "Oral appliances that aren't custom-made and do not fit well can become dislodged during the night and choke the wearer," he says. Finally, Dr. Perkins says that sprays and pillows are a waste of money and are not indicated for OSA.

## Care of OSA patients provides a great opportunity for dentists and sleep physicians to work together.

### The future of dentistry and OSA

Devices like the Remmers Sleep Recorder or the WatchPAT™ could make it possible for dentists to play a larger role in treating OSA, says Yosh Jefferson, DMD, MAGD, a general dentist who has limited his practice to orthodontics, TMD therapy, and major oral rehabilitation cases. Both of these are take-home devices that measure oxygen saturation in the patient's blood, as well as other indicators of sleep disturbances. Results can be sent electronically to the patient's physician for review and to evaluate whether the oral appliance is doing its job to decrease the patient's AHI rate.

"We're not the definitive diagnosticians for sleep apnea yet," says Dr. Davis. "No dental schools have said that this is an area of dental responsibility, but in the future, I think it will be." "I'm convinced that the dental profession can save a lot of lives," adds Dr. Perkins.

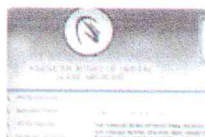
"Dentists aren't in this alone," says Dr. Shapira. "They can work as a team with other practitioners—ENTs, pulmonologists, and sleep centers—in the best possible way and in the best interest of the patient." ♦

To comment on this article, e-mail [impact@agd.org](mailto:impact@agd.org).

Published with permission by the Academy of General Dentistry.  
© Copyright 2009 by the Academy of General Dentistry. All rights reserved.



American Association of Oral and Maxillofacial Surgeons (AAOMS)  
[www.aaoms.org](http://www.aaoms.org)



American Board of Dental Sleep Medicine (ABDSM)  
[www.abdsm.org](http://www.abdsm.org)



Epworth Sleepiness Scale  
[www.epworthsleepinessscale.com](http://www.epworthsleepinessscale.com)



SleepWell Solutions  
[www.sleepwell-solutions.com](http://www.sleepwell-solutions.com)  
The home of the Thornton Adjustable Positioner® (TAP®); invented by Dr. Keith Thornton.

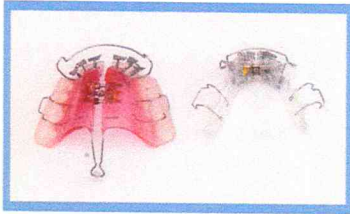


# A Dental Appliance to Treat A Medical Condition

## THE DNA DIFFERENCE

Unlike other dental appliances that simply move the jaw forward to force the airway open, the DNA appliance™ works to permanently optimize the underlying structure of the airway.

The mouth is one of the most dynamic aspects of the face. Research has shown that its form impacts a person's ability to breathe. As we grow, the genes that control the formation of the



mouth are programmed to create an arch that is 38-42mm wide between the right and left molars.

The misconception that corrections to the arch or skull can only be made in children has been proven false. Not only is the airway enhanced by bringing the mouth closer to its ideal form, but improvements in general facial structure are also possible.

- Non-Invasive Sleep Apnea Treatment
- Discrete Face and Jaw Correction
- Completely Natural
- Improved Breathing and Energy
- Effective for Adults and Children



Tara Griffin  
D.M.D. P.A.

### AN EPIGENETIC APPROACH TO SLEEP APNEA

The DNA Appliance™ is ideal for both adults and children. It is comfortable, painless and is only worn in the evenings and as you sleep. It involves no surgery, no drugs and no injections. The appliance harnesses natural developmental mechanisms to correct tooth alignment, improve facial development and open the upper airway. Most importantly, this approach addresses the root causes of sleep apnea and is proven to reduce snoring and sleep apnea.

To begin treating the causes of sleep apnea rather than just the symptoms, call Dr. Tara Griffin, D.M.D.



A Dental Appliance to Treat A Medical Condition



## TMD TEMPOROMANDIBULAR JOINT DISORDER/DYSFUNCTION

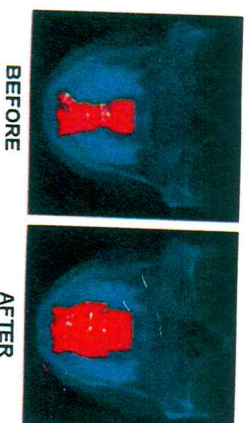
The Temporomandibular joints are the most important joints in the body. The prevalence of TMD is between 5% and 12% and more commonly seen in women.

*The most common symptoms of TMJ disorders:*

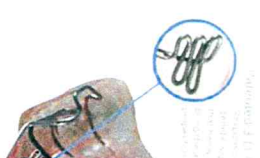
- |                                 |                               |
|---------------------------------|-------------------------------|
| <i>Headaches</i>                | <i>Neck and shoulder pain</i> |
| <i>law and facial pain</i>      | <i>Difficulty swallowing</i>  |
| <i>Ear pain</i>                 | <i>Ringing in the ears</i>    |
| <i>law clicking or grinding</i> | <i>Dizziness</i>              |
| <i>Ear stuffiness</i>           | <i>Sinus congestion</i>       |
| <i>Limited mouth opening</i>    |                               |

Recent studies reveal TMJ problems may be triggered by Sleep Apnea and Bruxism.

Pneumopedics is the process of non-surgical airway remodeling with the DNA Appliance. Images below show a person's airway before and after treatment.



DNA™ APPLIA  
TEMPORON  
DISORDE



***The DNA™ Appliance  
that treats the roo  
Bruxism by harnes  
correct craniofac***

Dr. Tara Griffin is the o  
certified to treat pat  
revolutionar

Completely 1  
No Injectio

Dr. Tara Griffin, D.M.  
850-249-933  
3135 Thomas Drive,  
32