WHY THE FABRICATION OF OCCLUSAL NIGHT GUARDS MY BE DETRIMENTAL TO THE OVERALL HEALTH OF YOUR PATIENT

Brock Rondeau, DDS, IBO, DABCP, DACSDD, DABDSM, DABCDSM.

The majority of dentists in North America learn to fabricate occlusal night guards (upper or lower) for patients who are diagnosed with bruxism. In the last 10 years there has been an increased awareness of the serious health problems that can arise from obstructive sleep apnea. Many articles have been published which indicate that the occlusal night guard will actually increase the severity of the obstructive sleep apnea by allowing the mandible to fall back at night, which also causes the tongue to retrude which reduces the size of the airway.

The American College of Prosthodontists Position Statement, June 3, 2016 stated that increasing the occlusal vertical dimension with a maxillary night guard without mandibular protrusion has been found to aggravate obstructive sleep apnea in some patients. They are recommending that all prosthodontists should screen for sleep apnea prior to fabricating night guards to prevent bruxism.

I would like to mention to you an article entitled, "*Aggravation of Respiratory Disturbances by the Use of Occlusal Splint in Apnea Patients".* Authors included Yves Gagnon, Pierre Mayer, Gilles Lavigue.

<u>Results of the study:</u>

AHI was increased more than 50% in 5 out of 10 patients.
Snoring increased 40% with the occlusal flat plane splint.

Obviously snoring is an extremely serious social problem affecting about 50% of the population over the age of 50. Anything that makes snoring worse is certainly a problem.

Obstructive sleep apnea effects 25% of the adult population and this serious medical disorder is undiagnosed 85% of the time. Sleep apnea can cause high blood pressure, heart attacks, strokes, type 2 diabetes, 5 times increased rate of cancer, daytime fatigue, increased risk of motor vehicle accidents, memory loss, impotence, Alzheimer's, dementia and many other factors detrimental to your health. Research has shown that people with sleep apnea have reduced life of approximately 10 years. Therefore we must screen patients for obtrusive sleep apnea prior to the fabrication of night guards. The diagnosis of sleep apnea can only be made by sleep specialists reading the report following a sleep study. Sleep studies can be done at hospitals (polysomnogram) or home sleep studies. The sleep study will reveal whether or not the patient has sleep apnea.

AHI Apnea Hypopnea Index
Apnea, number of times patient stops breathing for 10 seconds or more
Hypopnea, oxygen desaturation 4% or more.

2. Moderate Sleep Apnea: AHI 16-30. Stop breathing 16-30 times per hour

The treatment of choice for mild to moderate sleep apnea is an oral appliance. Oral appliances are effective in treating sleep apnea by moving the lower jaw forward and holding it forward all night which opens the airway.

3. Severe Sleep Apnea: AHI over 30. Stop breathing over 30 times per hour.

The treatment of choice would be a CPAP (Continuous Positive Air Pressure Device). The American Dental Association passed a resolution October 2017 that all dentists in the US must screen for sleep apnea.

Two screening forms that I recommend:

- Epworth Sleepiness Scale
- Stop Bang Form

If you would like copies of these forms, contact lee@rondeauseminars.com for a free copy.

Bruxism occurs when the teeth touch at night. (nocturnal bruxism). The standard night guard allows the posterior teeth to contact and encourages the contraction of the masseter, temporalis and medial pterygoid muscles. Many patients will report that in the morning they have headaches when they first wake up. I believe that it is important to stop the habit of bruxism but I have found that the existing design of the night guards actively encourages patients to brux more when they wear the night guars.

If night guards really prevent bruxism why do many patients often destroy their night guards by biting on them all night. This proves that night guards do not prevent bruxism.

Dentists prescribe night guards to prevent more damage to the teeth due to occlusal forces. Signs of bruxism include attrition, wear facets, morning headaches, flattened cusps, abfractions, worn down incisors, etc. I do agree that bruxism needs to be managed and I do recommend that the patients with bruxism should wear an appliance at night. I use an upper appliance that I have named Farrari 2 that only contacts the lower incisors. There is no posterior contact and therefore this prevents bruxism and prevents the masseter, temporalis and medial pterygoid muscles from contracting. The Farrari 2 also has an incisal ramp that helps prevent the mandible from falling back at night which helps prevent the airway from collapsing.

There is a strong correlation between patients with Temporomandibular Joint Dysfunction (TMD) and obstructive sleep apnea (OSA). It is extremely important not to use an occlusal night guard at night for a patient with internal derangements (problems within the TMJ). I have seen several patients who had internal derangements (clicking jaws) and their jaws locked (chronic closed lock) because the night guard allowed their lower jaw to

fall back at night. If the patient has TMD or obstructive sleep apnea the clinician must try to move the lower jaw downward and forward not backward.

Nocturnal bruxism (bruxism at night) has lately been referred to in the literature as sleep bruxism. Many authorities believe that patient brux at night in order to open their airways so they can breathe. As I told you previously as many as 25% of adults have sleep apnea so this an extremely common problem.

Added to the sleep apnea problem, a stressful lifestyle can also contribute to nocturnal bruxism. Stressful situations such as final examinations for students, family bereavement, marriage, divorce, job changes, etc.

Bruxism is obviously a very serious problem for many patients. I would urge you not to fabricate the standard occlusal night guard for patients who show signs of bruxism. Obviously if the patient is making holes in the appliance it is not preventing bruxism.

You are being urged by the American College of Prosthodontists not to fabricate occlusal night guards without first getting a sleep study to determine if your patient has life-threatening severe obstructive sleep apnea. If you are interested in more information about snoring and sleep apnea or TMD please feel free to contact Lee at Rondeau Seminars (lee@rondeauseminars.com). Scott Manning and Rondeau Seminars are committed to help you to increase your knowledge about bruxism, TMD, and sleep apnea so you can help your patients live longer and in better health.