Bruxism: What you should know.

Have you ever woken up in the morning with soreness in your jaw or with an earache or headache or neck or shoulder pain? Have you ever broken a tooth when biting into a soft piece of food? Have you ever experienced cold or sweet sensitivity in your teeth that seemed to disappear as quickly as it came without any apparent reason? Or, have you noticed the biting edges of your front teeth becoming flatter and straighter across? Well, these are all common experiences with bruxism, or tooth grinding.

Bruxism is prevalent in 80-90% of the adult population and is found in equal numbers among men and women. It only varies in the degree, frequency and time of occurrence. There can be numerous episodes throughout the night, each lasting up to five minutes. These episodes commonly occur during the transition from a deeper sleep into a lighter one. Consequently, if you do not sleep well and there are more of these transition periods, the frequency of your bruxing may increase. Audible sounds from teeth grinding together are only heard 20% of the time. And it is most interesting to note that only 10% of adults are aware they brux.

Three ideas have evolved to explain why so many of us unconsciously grind our teeth. The first and most highly supported cause is our state of mind. High levels of bruxism appear to correlate with emotionally stressful days or in anticipation of stressful events. Secondly, bruxism has been linked to systemic influences from alcoholism and some medication. There also seems to be a genetic component. Finally, there is the idea that bruxism is the body's attempt to correct a malalignment between your teeth and your jaw joint. Although this is ultimately important in regards of the consequences of bruxism, it is not likely the most important cause.

The strongest component for the cause of bruxism is the stress we experience in our lives and how we subsequently deal with it. Because of this, bruxism can not generally be stopped permanently. We can, however, ensure that the damage done to the teeth, the jaw joint or TMJ (like popping or clicking noises), or the muscles and to the gums is limited. We can do this by wearing a "nightguard" during our sleep. The nightguard design needs to be very particular. The surface must be flat and very hard, permitting the jaw to easily skate around without any resistance. It is of utmost importance that the nightguard be designed to align the jaw joint with the biting surface of the nightguard. It must allow contacts between all teeth and the nightguard surface to be of equal intensity.

What can happen if I don't wear a nightguard?

Think about this for a moment. Have you ever driven a car with the front end out of alignment? Or have you ever wondered why your new tires need to be balanced? Well, this analogy applies to your teeth and your jaw joint. Aligning the front end of your car and balancing the tires ultimately ensures relatively even wear on your tires. Similarly, aligning your teeth with your jaw joint, where contact between teeth is of equal intensity, results in less damage to any one particular tooth because the pressure is spread evenly

among all of your teeth. It means less damage to the jaw joint and reduced or eliminated discomfort with the jaw and neck muscles and therefore fewer headaches. Just as the car needs contact with the road to show that the alignment or tire balance is off, your teeth need to grind against each other in order for you to realize the associated symptoms.

Does this mean everyone should wear a nightguard? No. First we need to assess the jaw joint, muscles and teeth for damage. If none or little exists or if you are aware that bruxing was more of a problem in the past, you need not concern yourself with a nightguard. Keep in mind, however, any esthetic work done to improve the appearance of your teeth. Because many of the new materials used for esthetic work are susceptible to breaking, we need to pay particular concern to the issue of bruxism. You eat well because you are a proactive about your health. Similarly, you should be proactive about your jaw/tooth alignment because it will ultimately mean more comfort and better looking teeth for a long time.

Bruxism

Definition: a parafunctional habit. It is not a functional habit, unlike chewing, swallowing or speaking. It can be nocturnal or diurnal. It is a neuromuscular habit.

Etiology (nocturnal bruxism) the ideas are presented:

1. Bite (occlusal) discrepancies-it is the body's attempt to eliminate occlusal discrepancies, although the evidence to support this is limited.
2. Psychological-evidence is mounting that this is a sleep disorder related to emotional conditions. The state of mind you are in can influence what happens (e.g. heart attacks most commonly occur on Monday morning in anticipation of the workweek). Studies show that (a) levels of bruxism vary greatly from night to night; (b) levels of bruxism correlate with emotionally stressful days; and (c) anticipation of a stressful event appears to elicit bruxism.
3. Systemic-bruxism has been associated with alcoholism, some medications and in some instances, there appears to be a genetic component.

Prevalence:

1. Bruxism occurs in 80-90% of the population (the degree-frequency and time of bruxism varies).
2. It occurs equally in males and females; however, the manifestations of bruxing show more in males. In females, the bones are generally thinner, which allows for greater tooth mobility. A tooth can move somewhat out of the way resulting in less wear as compared to males. Furthermore, muscles in females tend to be smaller, resulting in less force being exerted on teeth. However, females do show more TMD or temporomandibular disorder symptoms.
3. Only 10% of adults and 5% of children are aware they brux.
4. Bruxism is very common in children up to the age of 12. The first permanent molars can be subjected to severe bruxing. Excessive wear shows as a loss of cusp tips and subsequent yellowish-orange dimples (this is dentin, the tooth layer under the enamel). Most outgrow the severe bruxing that can occur during these years. Damage to the permanent teeth can be seen as early as age 15 or 16.

Highlights (nocturnal bruxism)

1. Most often occurs during the transition from the deeper to the lighter stage of sleep.
2. Most often occurs at 90-minute intervals.
3. Occurs during scattered periods throughout sleep. Does not occur all night long.
4. The longest recorded episode is five minutes; usually occurs for seconds at a time. In one study, the individual total time recorded was 162 minutes or bruxing, but it was not consecutive.
5. There are audible sounds in only 20% of subjects.
6. There are more symptoms when bruxing occurs during REM sleep.
7. The occurrence of bruxism is variable and can be associated with stress, the work cycle, menstrual cycle.
8. If there is muscle pain, it may peak at 18-24 hours later. Pain is due to micro-tears in the muscle, the same tears that occur in any form of muscle building. If there is a long history of bruxing, the muscles adapt to the same force and repetitions and consequently, there is no pain. (The same is true for weight lifters).
9. Average bite force is 162 pounds. The average bruxer can reach 6 times that amount.
10. The maximum recorded bite force is 975 pounds for 2 seconds.
11. Bruxism probably follows a similar pattern of jaw movements to chewing. 90% of bruxers move their jaw side to side, front to back or solely on one side, while 10% move their jaw up and down. These patterns account for the wear patterns recorded on bruxer's teeth. These patterns are determined by the central nervous system and cannot be permanently altered.
12. Once the enamel has worn away exposing the softer yellowish-orange layer underneath it, tooth erosion can occur at an accelerated rate. Enamel starts eroding at a pH of 2.9. Acidic fruits and bulimia may add to this problem.

Nightguard treatment-objectives

1. Used to reduce muscle hyperactivity. The night guard must be hard and completely flat and must make contact of equal intensity with each tooth.
2. Reduce tooth wear. The hard nightguard surface is still softer than your tooth enamel.
3. The nightguard must be adjusted for a jaw position known as centric relation. It is a seated, stable position of the jaw and a starting point for the jaw movement. There is also reduced muscle activity in this position. IT WILL NOT STOP THE BRUXING HABIT.