



## The Nightly Grind by Niles F. Guichet, D. D. S. with Beverly Bush Smith

The sound, which breaks the silence of the night, can frighten small children and startle sound sleeping adults. It has been likened to "someone walking up creaking stairs" or "the cracking of nuts." It is the sound of someone grinding or bruxing his teeth. Bruxism is excessive teeth grinding or jaw clenching. It is an oral parafunctional activity; i.e., it is unrelated to normal function such as eating or talking.

Many dentists consider the published to be conservative figures that 1 in 20 adults and 3 in 20 children grind their teeth. Although the noise may disturb spouses, children, friends and roommates, it is in the long run far more distressing to the bruxer, though he may not even know he is bruxing, than to the listener.

Stressful gnashing of the teeth in sleep is virtually an automatic reflex of the neuromuscular system and can exert thousands of pounds pressure per square inch on the tips of the teeth. This can be very rough indeed on the teeth themselves, as well as the bone which supports the teeth, the gums, and the jaw joints.

But before we investigate the sometimes painful results of bruxism, let's look into the why.

For many years it was believed that bruxism was a tension symptom - which it stemmed from emotional stress or instability. But several studies have shown that no long term psychiatric or psychological differences exist between those who did and those who didn't grind their teeth. Most dental authorities now agree that though emotional stress may be a contributory factor, the main causes of bruxism exist right in the patient's mouth.

Most people grind their teeth in an unconscious effort to correct irregularities of the chewing surfaces of the teeth - what your dentist terms malocclusion. They grind away in order to eliminate a spot which is too high, or so as to find a comfortable place to fit the upper and lower teeth together.

The problem is that if opposing teeth do not meet properly they can function as a fulcrum. The lower jaw acts as a lever with the jaw muscles providing the driving force. Such a lever can create stresses in the maloccluded teeth and, as we will see, in other components of the head and neck complex, which are many times greater than normal.

You may not know that you grind your teeth, but if you do, your dentist will know after a careful examination.



You may recognize signs of night grinding as top surfaces of teeth gradually become worn down to flat, dull nubs. Bruxism can actually crack a tooth, chip the enamel, or even cause teeth to shift, thereby creating open spaces between teeth which collect food and encourage gum disease and tooth decay.

The enormous forces of bruxism can actually wiggle teeth loose. When through bruxism you rock a tooth back and forth, the bone which holds the tooth in place literally retreats from the root of the tooth.

But this may be only the beginning of the problems. Often minor gum infections occur because you do not brush your teeth properly, even for just a few days, or because you do not have your teeth cleaned sufficiently often by a dentist or dental hygienist. Such minor gum infections may be evidenced by bleeding of the gums upon brushing the teeth. Frequently these infections can be aggravated when teeth are jiggled in their sockets by bruxism. This can accelerate development of "pyorrhea pockets" or periodontal pockets as your dentist calls them.

Sometimes the stresses of bruxism are transferred to the jaw joint - the temporomandibular joint. This can result in pain on the side of the face in the area of the ears. The patient suffering from this problem most frequently consults the physician and complains of an earache.

The physician, finding nothing wrong in the ears, will recognize the earache to be a dental problem and refer the patient to the dentist for treatment.

Malocclusion can cause the whole jaw to jiggle out of place. Muscles will move the jaw to get a high spot of a tooth into a place where it fits better. But when the jaw moves to a new position, however slight, some other high spot usually appears - sometimes on the other side of the mouth. The jaw then finds a new way to twist and turn to find a comfortable way to fit the teeth together. This locates parts of the jaw joint itself into new or compensating positions and can cause ligaments and muscles to be excessively stressed and strained. It can also cause clicking sounds in the jaw joint when you open and close your mouth, as well as earaches, facial pain around the jaw joint, and an inability to move the jaw. It can even cause dizziness and impaired hearing.

Moreover, there is a good deal of evidence today that such stresses in muscles that move the jaw are transferred to other muscles in the head and neck. This is because the head is positioned on the spinal column like a big ball precariously balanced on the end of a pole and stabilized only by an intricate system of muscles and tendons. When one part of the system is stressed, generalized stresses occur in the rest of the system. These stresses or tensions in the muscles can cause such remote ailments as soreness in the muscles of the neck, stiff neck, and recurring headache - even on the top or back



of the head. The "catch" to bruxism then is that it solves no problems. Instead of relaxing tensions, bruxism causes aches and pains which make for greater tension. So you brux more. Bruxing thus leads to pain, which causes tension, which leads to more bruxing.

What then, can be done to eliminate bruxism?

Sometimes it may be stopped and wear on the teeth prevented by giving the patient a "splint" to wear at night. These are similar to the rubber or plastic mouth pieces worn by boxers and football players.

This, however, is only a temporary treatment.

Medications such as muscle relaxants and anti-inflammatory may lessen pain but in the long run are only temporary measures.

If a machine doesn't mesh properly we correct the defects so the parts fit together. This is what must be done in the mouth. Treatment of the chewing surfaces of the teeth so the teeth fit together properly is called "occlusal treatment." This may be accomplished by orthodontics - that is, by straightening the teeth with "braces." This method is used with children to prevent the afore mentioned conditions from developing. Orthodontics is also used in treatment of adults.

Many times in order to get the teeth to fit together properly; the dentist will make an occlusal adjustment by reshaping the chewing surfaces of the teeth. This procedure is called "occlusal equilibration."

More and more dentists as part of their regular dental examination give periodic occlusal relation examinations. In other words, they check to detect minute or gross irregularities of the chewing surfaces of the teeth. This examination can include checking the external jaw muscles for pain and tenderness as well as the muscles of the head, neck, and shoulders, It may also include stethoscopic examinations of the jaw joints for abnormal sounds such as clicking as well as observation of jaw deviation when the patient opens and closes his mouth.

Correcting the bite may be a simple matter of selective reshaping of an offensive ridge of a tooth or a too-high filling. However, many times in order to adequately treat the occlusion the dentist may have to employ a combination of procedures which might include selective reshaping of the teeth, orthodontics to locate teeth in more favorable positions, extraction of malposed teeth, or restoration of the occlusion by means of inlays, bridges, and/or dentures.



When the occlusal treatment requires that the dental restorations (inlays, bridges, dentures, etc.) be constructed in the dental laboratory, in order to get a completely accurate picture of the mechanics of a patient's jaw movements, some dentists make a recording of the patient's jaw joint functions. This recording is used to program a mechanical jaw movement Simulator to simulate the unique jaw movements of the patient. When casts of the patient's dental structures are located in the simulator the dentist can accurately diagnose bite conditions and accurately plan and effect occlusal treatments. By this means, dental treatments and/or restorations can be planned so that opposing teeth will meet properly in any position in which the patient may elect to bring the teeth together. This results in minimal stresses in the muscles, joints, teeth, and other related structures of the head and neck complex.

Admittedly some people can "live" with malocclusion and accommodate to it. Others will have no problem until a time of psychic stress arises to trigger bruxism. Some symptoms will go away spontaneously. But for the patient in distress, proper occlusal treatment can bring what one patient termed, "that wonderful peace I have in my face now"

Careful attention to the proper meshing of the teeth then is the lasting answer; not only to relieving night time grinding, but to preventing and alleviating the strain and pain and eventual loss of teeth which can result from prolonged bruxism.