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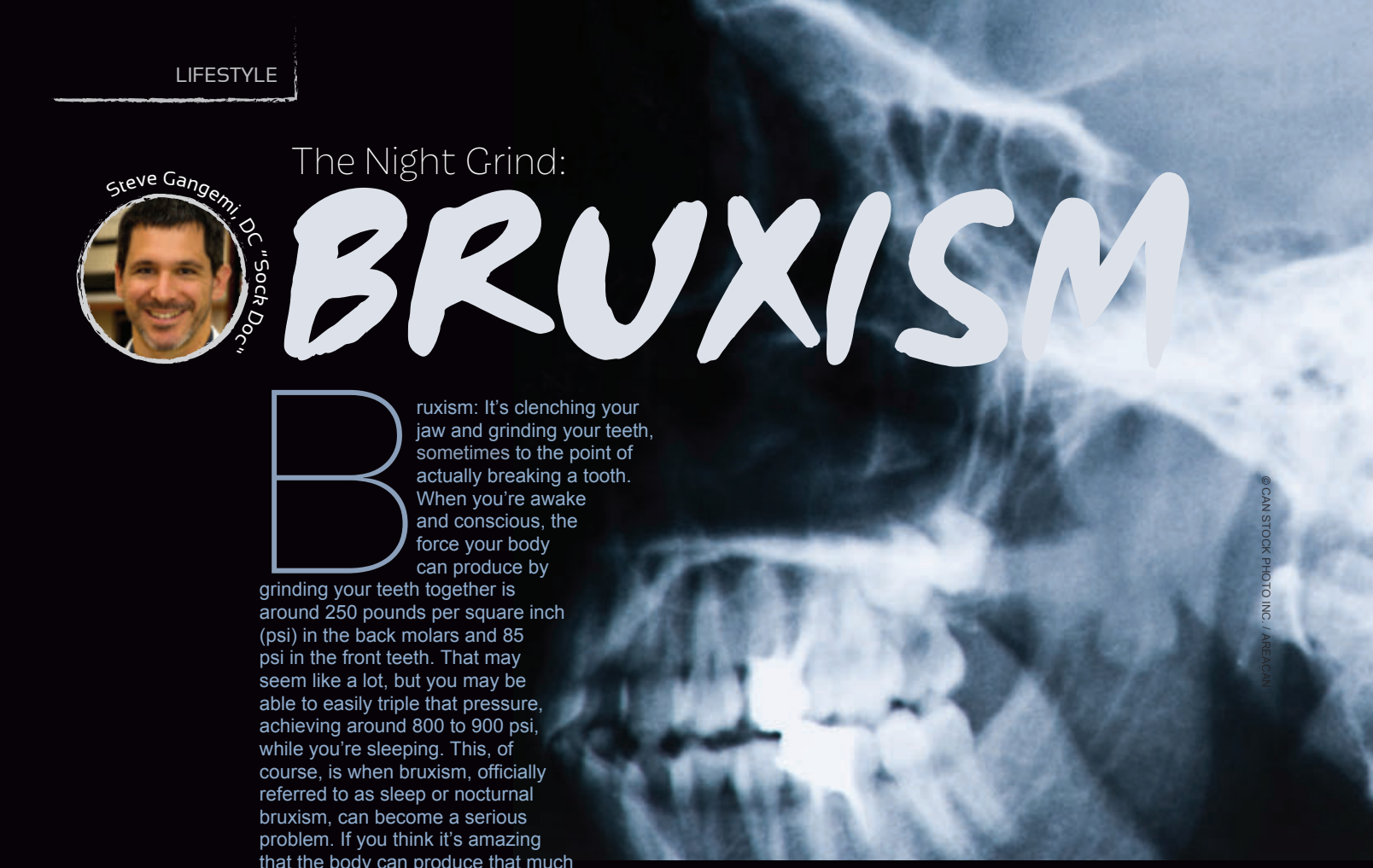
The Night Grind: BRUXISM



Bruxism: It's clenching your jaw and grinding your teeth, sometimes to the point of actually breaking a tooth. When you're awake and conscious, the force your body can produce by grinding your teeth together is around 250 pounds per square inch (psi) in the back molars and 85 psi in the front teeth. That may seem like a lot, but you may be able to easily triple that pressure, achieving around 800 to 900 psi, while you're sleeping. This, of course, is when bruxism, officially referred to as sleep or nocturnal bruxism, can become a serious problem. If you think it's amazing that the body can produce that much pressure during what should be a restful period, realize that it can even double that force to around 2,000 psi if you're on certain mood-altering medications. Pressure that high is tooth-breaking, tissue-damaging force, along with a whole lot of pain and discomfort to the head, neck and jaw region.

What Causes Bruxism?

Although bruxism can be due to a variety of health problems, in a nutshell it comes down to one thing: too much stress to your body. At a time when your body should be relaxing and recovering (sleeping), the nervous system is unable to calm down into a parasympathetic, relaxed state. Rather, it remains in sympathetic dominance, as though your body were fighting a battle for survival. Ultimately, hormones and neurochemicals are altered further as you're grinding away during what should be a restful time.

The stressors that result in bruxism can be any type or combination of emotional/mental, chemical/nutritional or physical/structural stressors. You could have one big stress—say, the loss of a loved one (emotional stress), or a major physical accident (structural damage to your body), which results in bruxism either immediately or over time. You could also have several smaller stressors that add up over a period of time and eventually affect your sleep, either through insomnia, restless sleep or bruxism. If you have a diet that is high in refined carbohydrates and caffeine, and add in a high-stress job and perhaps some health problems, then bruxism may be the way your nervous system tries to deal with the volume of stress when you finally try to get some shut-eye.

Antioxidant depletion is another common problem for those who are under too much stress, especially dietary stress. Not only does this impair overall health, but there is an association with sleep problems, particularly bruxism, and free-radical damage. High levels of anxiety, antioxidant depletion, and bruxism all tend to run together.

Grinding on Meds

Bruxism is closely associated with taking certain medications. Interestingly enough, these same medications, which are thought to help you deal with stress, can also be a trigger for more nervous-system stress and bruxism. Then again, if you "need" a certain medication, there is almost always a health problem in the first place.

There is a strong connection between many neurotransmitter-type (mood-altering) drugs and bruxism. These are the medications people take for depression, anxiety, addictions and other mental-health–related disorders. As previously mentioned, the pressure a person can elicit in their jaw while on certain medications can easily push nine times or more what can be consciously achieved. And people who take these types of medications are under a heavy load of unhealthy stress as it is—or they wouldn't need these drugs in the first place.

As with everything in the human body, it's all about balance. The neurotransmitters are no exception. These chemical messengers provide multiple functions, from shaping our personalities to affecting each and every mood and feeling we have throughout the day, including how we interpret pain. The balance is between excitation ("the uppers") and inhibition ("the calmers"). Most often, those who feel the "need" for some drug support or are prescribed such by their physician are trying to create some balance out of the imbalance. I stress the word "try," because the full mechanism of action of these drugs is still

unknown and some researchers feel as though the majority (70 percent or more) have a placebo effect. Dietary excitotoxins such as MSG and aspartame are known to elicit an excitatory prevalence in the body, resulting in stress that can produce symptoms such as bruxism.

There is a definite link between diet, depression/anxiety and antidepressant use, particularly with the common selective serotonin reuptake inhibitor medications, commonly known as SSRIs. The majority of serotonin (90 percent) is produced by cells that line the digestive tract, so eating foods that impair digestion can affect serotonin production and therefore result in stress to the nervous system and bruxism. It is a known fact that bruxism can occur from taking SSRI medications (called SSRI-induced bruxism) such as Paxil, Prozac, Celexa and Zoloft, as well as drugs such as Wellbutrin that also affect the dopamine pathway.

Restless leg syndrome (RLS) has also been associated with nocturnal bruxism, as they both are linked with imbalances in the neurotransmitters serotonin and dopamine, which can be the result of medication use. Dopamine is our reward-and-pleasure neurotransmitter, and imbalances are linked to addictive personalities and those with attention deficit disorder (ADD and ADHD). Some studies show that people taking medications for ADHD have a higher prevalence of bruxism than those not treated with medications for their ADHD.

Caffeine, Stress and Bruxism

When we're under too much stress, we often turn to caffeine for its stimulatory effect in order to push through the day. Along with caffeine, there are chemicals in these products (coffee, tea, cacao) that act as stimulants for the central nervous system, providing a further "get-up-and-go." The problem here is that people who use caffeine and such products typically abuse them to the point where they begin to have other health problems related to hormonal, neurochemical, sleep and memory issues—all of which can result in bruxism.

Grinding and the Military

Many people know at least one person who is in the military, and perhaps you are one yourself. The stress these individuals are under, especially if they're in a combat situation, is one that few can comprehend unless they have been in such a situation. Though the teeth may be the last thing a solider is concerned about, there is a huge bruxism problem in the military. I learned of the problems with bruxism in the military through several meetings with a dentist who specializes in the production and fitting of oral orthotic devices, commonly known as bite splints, for a branch of the military.

Those in the armed forces are often under high physical and mental stress, and they are provided with inadequate nutrition. Adding to this stress is huge caffeine intake. Most soldiers consume more coffee, tea and high-caffeine/high-sugar energy drinks by noon than most people would consume all week, if not longer. Then to help deal with all the physical, emotional and nutritional stress, many are prescribed an antidepressant drug (Wellbutrin, which slows down the reuptake of dopamine, is common), which then kicks the bruxism into full swing to the point where they'll quickly break down their teeth if they don't wear their night splint.

Splints to Ease the Grind

Often, when I see a patent who grinds their teeth, he or she has already been fitted for a night splint. These devices are typically fitted by a dentist, although you can get one at any drug store (not a good idea, unless that's your only option). Many people don't even realize they grind their teeth until their dentist sees some signs of wear and tear, or perhaps their significant other sleeping next to them has told them they sound like a machine factory whose gears need oil.

Understand that these night splints don't correct any problem—but they can hopefully keep you from ruining your teeth and maybe also provide some relief by removing stress from your jaw and cranial muscles. Unfortunately, many night splints are made incorrectly. As my dentist correspondent likes to say, it's like "putting a rectangle into a triangle." For every 1 mm the teeth are separated in the back (your molars), the front teeth are separated by a factor of three. So for many, wearing a splint with the same thickness throughout its entirety can cause more problems, either immediately or in the future.

This is not as uncommon as it may sound, since it is common practice to make splints in such a way. Typically, within 72 hours, the body begins to adjust to the new splint, often by grinding into the splint to create a more proper fit. It may be a good idea to have your splint refitted every few years or more often if you notice excessive wear or breaking points in the splint. Some time ago, I saw a woman with sleep problems caused solely by her night splint. The back part of one side had broken off, but neither she nor her dentist had thought it was a problem. I helped her to realize this through the testing procedures I use in my office, and as soon as she was fitted for a new splint, her sleep problem resolved fully and immediately.

Resolve the Stress, Resolve Bruxism

To get to the source of the bruxism, you need to deal with the stress or stressors at their source and not try to cover up the problem with medications, other drugs (such as caffeine), or other symptom-based treatments. This means figuring out what the stressors are and correcting them, whether it's your diet, emotional stress or any health issue, including medication use.

Prevention is always easier than resolving a chronic bruxism problem. Though bruxism can be resolved, it is typically not a simple fix; unfortunately, it is common to continue to grind your teeth even after health begins to improve. It's not an overnight process, as the nervous system can get stuck in this stress pattern. But like most health issues, there is a reason for everything and your body can and will heal given some time, with persistence and dedication to the problem.

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