

Sleep Bruxism and Your Patient's Health

A Guide for Professionals

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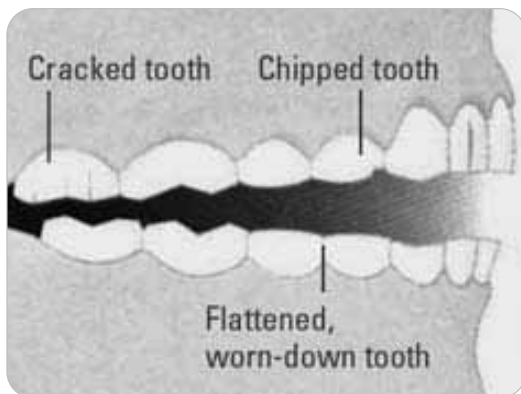
Overview - Definition

Bruxism is the medical term for grinding, gnashing or clenching the teeth. This condition affects both children and adults.

Some people with **bruxism** unconsciously clench their teeth during the day, often when they feel anxious or tense. Sleep **bruxism** is the grinding or clenching of teeth during sleep.

In most cases, **bruxism** is mild and may not even require treatment. However, it can be frequent and violent and can lead to joint and muscle disorders (Temporomandibular Disorders - TMD), headaches, damaged teeth and periodontium and other problems.

Unfortunately, people with sleep **bruxism** usually aren't aware of the fact that they brux, so they aren't diagnosed with the condition until complications occur. That's why it's important to diagnose sleep **bruxism** as early as possible, and to seek appropriate treatment.



Signs and symptoms

The signs and symptoms of bruxism may include:

- ▶ Teeth grinding or clenching, which may be loud enough to wake the sleep partner
 - ▶ Teeth that are worn down, flattened or chipped
 - ▶ Worn tooth enamel, exposing the inside of the tooth
 - ▶ Increased tooth sensitivity
 - ▶ Jaw pain or tightness in the jaw muscles
 - ▶ Earache because of violent jaw muscle contractions
 - ▶ Dull morning headache
 - ▶ Chronic facial pain
 - ▶ Chewed tissue on the inside of the cheeks
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Causes

The mechanism behind bruxism is not completely understood. In some adults, abnormal alignment of upper and lower teeth (malocclusion) may contribute to the problem.

Often, psychological factors may cause bruxism, including:

- **Anxiety, stress or tension**
- **Suppressed anger or frustration**
- **Aggressive, competitive or hyperactive personality type**

In children, bruxism may be related to growth and development. Some researchers believe that children brux because their top and bottom teeth don't fit together comfortably. Others think that children grind their teeth because of tension, anger, allergy problems, or as a response to pain from an earache or teething. Bruxism occurs in up to 30 percent of children, often around the ages of 5 and 6. It's particularly common in children with cerebral palsy or severe mental retardation. Most children outgrow bruxism before they get their adult teeth.

In some cases, bruxism isn't caused by stress or dental problems. It can be a complication of another disorder, such as Huntington's disease or Parkinson's disease. Bruxism is also associated with sleep apnea. It can also be an uncommon side effect of some psychiatric medications including antidepressants.

Risk factors⁽¹⁾

These factors have been shown to increase the risk of Sleep bruxism (SB):

- ▶ Psychological stress/anxiety

- ▶ Obstructive Sleep Apnea syndrome

- ▶ Smoking

- ▶ Caffeine

- ▶ Alcohol

- ▶ Drug Abuse (e.g., cocaine, amphetamine, Ecstasy)

- ▶ Temporomandibular disorders (TMDs) (Bruxism is believed to be one of the risk factors to TMD).

- ▶ **Age** Bruxism is common in young children, but usually disappears by age 10. In adults, the condition is common between the late teen years and the 40s. It tends to decrease with older age.

- ▶ **Familial/Genetic factors**

- ▶ **Occlusal factors**

- ▶ **Sleep factors**

(1) Current Knowledge on Awake and Sleep Bruxism: Overview, Alpha Omegan, Volume 96, Number 2, July 2003

When to seek medical advice

Because bruxism often goes untreated, and because damage is cumulative over time, it is important to suspect and test for bruxism on a regular basis.

Any supporting clinical evidence such as worn teeth or jaw, face or ear pain, morning headache certainly justify a test. Limitation or discomfort moving the jaw in the morning and similar complaints. A test is certainly warranted if the bed partner complains of grinding noises while the patient sleeps.

If a child is grinding his or her teeth, or has other signs or symptoms of this condition, it is also important to have him or her tested in the next appointment.



Diagnostic Criteria

Suspicion of SB is usually based on clinical examination of the teeth, complaints of jaw and masticatory pain, and subjective reports, usually by the bed partner or family member of the grinding and/or clenching noise. Currently the only “gold standard” for a definitive, objective diagnosis of sleep bruxism is the measurement of jaw muscle activity using a muscle activity recorder (EMG).

Clinical diagnosis in the sleep laboratory with polysomnographic (PSG) recordings is rare due to the high costs of such a study. However, the suggested cut-off criteria to distinguish bruxers from non-bruxers have been determined in clinical studies as follows: more than 4 bruxing episodes per hour and more than 6 bruxing bursts per episode and/or at least 25 bursts per hour, and at least 2 episodes with grinding sounds per hour. Unfortunately, due to the variable nature of the disorder, a single night of PSG recording may not be sufficient to diagnose SB.

The introduction of the **BiteStrip®**, an innovative home sleep bruxism test, finally makes true EMG-based diagnosis possible at a reasonable cost. The device, which monitors jaw muscle EMG signals throughout the night, performs automatic analysis based on the criteria described above, to produce a clinically validated indication of bruxism severity in the morning.



Treatment

- **Stress management** Professional counseling or strategies that promote relaxation, such as exercise and meditation may be helpful.
 - **Dental approaches** A mouth guard or protective dental appliance (splint) can prevent damage to the teeth and gums. A dentist can create a custom mouth guard providing the best fit to the specific patient. Over-the-counter mouth guards are available and they're less expensive than custom guards, but they generally don't fit well and can dislodge during bruxing. If bruxism seems to stem from dental problems, the dentist may also correct misaligned teeth. In severe cases, when tooth wear has led to sensitivity or the inability to chew properly, the dentist may need to use overlays or crowns to entirely reshape the chewing surfaces of the teeth.
 - **Behaviour therapy** Behavioural change by practicing proper mouth and jaw position may be appropriate. The recommendations call for resting the tongue upward with the teeth apart and lips closed. This should keep the teeth from grinding and the jaw from clenching. It may be beneficial to use biofeedback, a form of complementary and alternative medicine that uses a variety of monitoring procedures and equipment to teach the patient to control involuntary body responses.
 - **Medications** In general, medications aren't very effective for treatment of bruxism. In some cases, a doctor may suggest taking a muscle relaxant before bedtime. If bruxism developed as a side effect of an antidepressant medication, the doctor may change the medication or prescribe another medication to counteract bruxism. Botulinum toxin (Botox) injections may help some people with severe bruxism that have not responded to other treatments.
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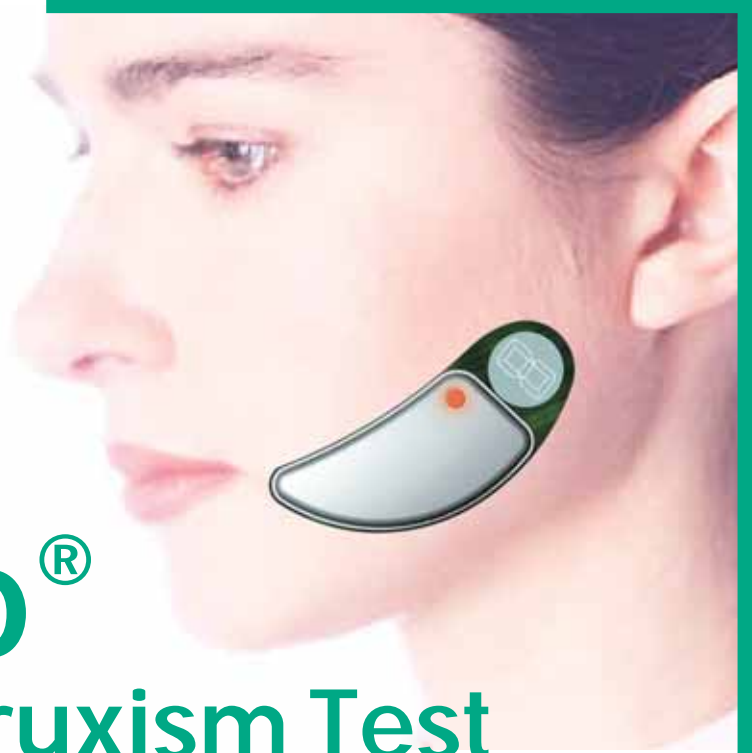
Self-care

These self-care steps may prevent or help treat bruxism:

- **Limit alcohol, tobacco and caffeine** - Cutting down on daily intake of alcohol, tobacco and caffeine, or giving up these substances entirely may help, because they seem to make bruxism worse.
- **Reduce stress** - Keeping life stresses to a minimum may reduce the risk of developing bruxism. The less anxiety and tension, the better chance of avoiding bruxism.
- **Consult the sleep partner** - Consult the bed partner to be aware of any grinding or clicking sounds while sleeping. The sleep partner can then provide continuous feedback on any teeth grinding sounds in the night.
- **Have regular dental exams** - Dental exams, preferably with the BiteStrip prescribed by a dentist, are the best way to screen against bruxism.

Conclusions

Bruxism is a parafunctional activity that occurs both during wakefulness and sleep. Recent evidence supports the definition of SB as a powerful masticatory muscle activity associated with sleep arousal mechanisms. Until now there is no single solution that can be recommended for Sleep Bruxism treatment. Stress management and patient education about lifestyle changes may be beneficial, but few control studies demonstrate the efficacy of these approaches. Oral splint therapy could be useful to protect teeth from damage, but the mechanism of the action remains to be elucidated. The short-term use of some medications may be beneficial, especially when there is secondary pain, but there are side effects (e.g., drowsiness, sleepiness, exacerbation of sleep breathing disorders).



BiteStrip®

Disposable Bruxism Test

BiteStrip® is an exact, economical device for single use to diagnose bruxism.
BiteStrip® detects the existence and the intensity of bruxism.



No bruxism: comparable to a sleep lab brux count of up to 30 over 5 hours



Mild: comparable to a sleep lab brux count between 30 and 60 over 5 hours



Moderate: comparable to a sleep lab brux count between 61 and 100 over 5 hours



Severe: comparable to a sleep lab brux count of more than 100 over 5 hours

