

Bruxism management

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Bruxism is a repetitive jaw-muscle activity characterized by clenching or grinding of the teeth and/or by bracing or thrusting of the mandible. It can occur during sleep (sleep bruxism, SB) or during wakefulness (awake bruxism, AB). About 10–13% adults experienced SB and 22–31% reported AB. In younger population, bruxism could be more frequent (40–50%).

Bruxism is a motor behavior rather than a disorder. It can be a risk factor (that may lead to conditions such as temporomandibular disorder-related pain or mechanical tooth wear), protective factor (in people with obstructive sleep apnea) or neutral factor. Since bruxism is not a disorder, we do not diagnose it as such. Instead, we assess the motor behavior and determine if any positive or negative consequences are associated with it.

The exact causes of bruxism are not fully understood. AB is often associated with stress and heightened alertness. SB is related to sleep disorders, neurologic and psychiatric disorders, medications (such as selective serotonin reuptake inhibitors and tricyclic antidepressants), and disturbances during sleep (noise in the room, sleeping ≤ 8 hours/night). Hereditary factors and substance abuse (such as heavy alcohol use, excessive caffeine consumption, smoking, second-hand smoke) can contribute to bruxism.

Management of bruxism focuses on preventing additional tooth damage and relieving associated symptoms. Bruxism can be managed with these steps.

1. Self-management

1.1. Education

Sleep hygiene, stress management and relaxation techniques can play a crucial role in managing TMJ-related issues. Stress and anxiety often contribute to jaw clenching and teeth grinding, which can worsen TMJ-related issues. Learn strategies to cope with stress and reduce these habits, ultimately providing relief from TMJ discomfort.

Sleep hygiene: stop smoking and drinking of coffee or alcohol at night, avoid eating heavy meals (e.g., snacks, pizza, or lasagna) after 19:00, limit the physical or mental activity and screen time before bed (at least 1 hour before the time you usually fall asleep), and ensure good bedroom conditions (quiet and dark, well-ventilated).

Stress reduction: Engaging in stress management techniques, such as exercises, meditation, or relaxation therapies, can help alleviate stress and anxiety, potentially reducing sleep bruxism symptoms.

You can try these techniques:

- **Deep breathing:** Practice deep breathing by inhaling your nose, holding it for a few seconds, and then slowly exhaling through your mouth to relax your mind and body.
- **Progressive muscle relaxation:** Tense your muscles briefly and then relax them, starting with your toes and moving up to your head. This can reduce overall muscle tension and promote relaxation.

Learn the relaxed position: tongue behind the maxillary anterior teeth as when saying /n/. Teeth apart and separated by 1-4mm space. Lips in slight contact and relaxed. Maintain this relaxed position at rest at all times except when eating or speaking and avoid unwanted muscle contraction with the teeth in contact.

1.2. Biofeedback

Use an app (for example BruxApp) or set an Alert (a reminder or notification on your phone) by yourself to help you focus on what's happening in and around your mouth, specifically: the teeth, the jaw muscles, and the temporomandibular joints.

The app or the Alert reinforces your awareness of any bruxism taking place, allowing correction of the harmful habit. Whenever you receive the Alert, focus your attention on the mouth area (teeth, muscles, joints) and ask yourself three key questions:

- How are my teeth positioned right now? (apart, lightly touching, tightly clenched, grinding)
- How are my muscles? (relaxed, tense jaw muscles and jaw clenched without teeth touching)
- Do I feel pain in the face? (Yes, No)

When you receive the Alert, 1) focus on your mouth (and answer the 3 questions above), 2) drop the teeth apart, 3) relax the jaw muscles.

After 7 days of training, it's time for cognitive behavioral reeducation. Whenever you receive the Alert, focus your attention on your mouth area. If you have your teeth in contact, you have to detach immediately your teeth contact and relax the jaw. If you have the tense chewing muscles, you have to move the jaw from right to left, then you have to open your mouth wide trying to release the muscle fibers and then relax them.

You will be able to repeat 30- or 60-days' periods until you have learned to be independently in the muscle rest position.

1.3. Thermal modalities

Applying heat packs or warm compresses to the muscles around your jaw can help reduce pain and discomfort associated with TMJ issues. Heat promotes relaxation and increases blood flow to the affected area which reduces muscle tension.

Cold compress reduces blood flow, reduces inflammation and swelling, reduces nerve activity, relieves pain.

1.4. Self-massage therapy

Massage is limited to the anatomic location of the painful or tense affected masticatory muscles (masseter muscle and temporalis muscle)



Fig. 1. Kneading of masseter muscle applying circular motions and intensified pressure. Three fingers are used to perform the massage



Fig. 2. Kneading of temporal muscle applying circular motions and intensified pressure is carried out with whole palm of the hand and fingers

1.5. Diet and nutrition

Consuming foods that are soft and easy to chew can help minimize stress on the TMJ and prevent excessive symptoms. Avoiding tough or hard-textured foods can provide relief by reducing the need for extensive jaw movements when you eat.

You can have that pain-free diet for 2 weeks. After that, progressively increase food consistency.

1.6. Parafunctional behavior

Identify, monitor and avoid any parafunctional behavior that exacerbate pain. Limiting extreme mouth movements, such as wide yawning or excessive gum chewing, can prevent further strain on the jaw joint and muscles. This precaution can assist in reducing pain and inflammation.

2. Physiotherapy

You can do the exercises in conjunction with an already established routine; eg, tooth brushing or going to the toilette. It helps to enhance adherence to the exercises.

Do the exercises 3-4 times/day for few minutes. An anti-inflammatory ointment can be applied at night before the massage.



Fig 1 Exercises included in the jaw exercise program I. Free movements of the mandible: (a) Maximal jaw opening, (b, c) laterotrusion, (d) and protrusion without resistance. Movement of the mandible with a small resistance (eg, with a couple of fingers): (e) jaw opening, (f, g) laterotrusion, (h) protrusion, (i) mouth closing, and (j) stretching.



Fig 2 Directions for exercises included in the jaw exercise program II. (a) Open your mouth until you hear the clicking sound. (b, c) Protrude the mandible and simultaneously close your mouth so that the incisors come in contact. This way you prevent the condyle from sliding behind the disc. Open and then close your mouth so that the incisors come in contact. While doing this movement, no clicking sound should occur. Repeat the exercise slowly for at least 3 minutes.

3. Occlusal splints

The occlusal splints are also known as bite guards, night guards. These custom-made devices are designed to fit over the teeth and are worn during sleep. It is recommended to use bite guards fabricated from hard acrylic-resin materials rather than soft-resin. The splint helps protect the teeth from the effects of grinding and clenching. They do not reduce the frequency of bruxism.

4. Pharmacological therapies

The evidence was still insufficient on the effectiveness of pharmacotherapy for the treatment of SB. Be sensible and limit the use of analgesia.

Botulinum toxin A injections in the masseter and temporal muscles may reduce intensity of muscle contractions in generic bruxism patients. But it does not decrease the incidence of SB events. The effect usually lasts for about 4–6 months. Be caution with this therapy due to limited evidence and potential for adverse effects.