



The clinical management of awake bruxism

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Many oral habits exist that can cause damage to the stomatognathic system. Several of these are well documented or readily identified by the patient. Many people, however, clench or grind their teeth while they are awake without realizing they are doing so. For brevity, throughout this article we will refer to this activity as *awake bruxism*. This term is consistent with the definition of bruxism in the 8th edition of the *Glossary of Prosthodontic Terms*:

1: the parafunctional grinding of teeth 2: an oral habit consisting of involuntary rhythmic or spasmodic nonfunctional gnashing, grinding, or clenching of teeth, in other than chewing movements of the mandible, which may lead to occlusal trauma—called also tooth grinding, occlusal neurosis.¹

There are multiple kinds of diurnal oral parafunctions that can affect the stomatognathic system, including but not limited to nail-biting, chewing on cheeks or other mucosa, and chewing on pens or other objects. Although clinicians should be aware of these conditions and educate patients about the effects, for brevity, in this article we will focus specifically on awake bruxism— tooth-to-tooth contact while the patient is awake. In our clinical experience, this is a relatively common habit that frequently results in the need for dental work (Figure 1). Compounding the problem, there is a lack of awareness specific to awake tooth clenching and grinding. In addition, the personal awareness of these other habits is not present with bruxism²; we will address the lack of awareness and its sequelae.

We believe it is our responsibility as clinicians not only to diagnose disease and treat patients but also to educate patients about the possible causes and effects of awake bruxism. However, the paucity of available literature on the subject and the low level of self-awareness of patients who exhibit this behavior present a challenge.

ABSTRACT

Background. Awake bruxism is a common clinical condition that often goes undetected, often leading to pain or damaged teeth and restorations.

Methods. The authors searched electronic databases regarding the treatment and effects of awake bruxism compared with those of sleep bruxism. The authors used the search terms *diurnal bruxism* and *oral parafunction*. The authors combined information from relevant literature with clinical experience to establish a recommended protocol for diagnosis and treatment.

Results. The authors found articles regarding the diagnosis and treatment of bruxism. The authors combined information from the articles with a review of clinical cases to establish a treatment protocol for awake bruxism.

Conclusions. Literature and clinical experience indicate a lack of patient awareness and, thus, underreporting of awake bruxism. As a result, myriad dental consequences can occur from bruxism. The authors propose a need for increased awareness, for both patients and professionals, particularly of the number of conditions related to awake bruxism.

Practical Implications. Clinicians should look for clinical signs and symptoms of awake bruxism and use minimally invasive treatment modalities.

Key Words. Diurnal; bruxism; clenching; occlusal guard; parafunction.

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The purpose of this article is to help establish a protocol to identify patients at high risk of having this behavior, review treatment modalities, and develop a predictable dialogue to educate patients about awake bruxism.

The prevalence of bruxism varies greatly across studies, varying from as low as 5% to greater than 90%.³ However, there seems to be a consensus that public awareness of bruxism is low and that it generally is underreported.⁴ In addition, Gibbs and colleagues⁵ reported that bite strength in people exhibiting parafunctional activity can be up to 6 times greater than that



Figure 1. A. Despite reported nightly compliance with a guard, this 46-year-old man showed continued wear on his anterior teeth. B. On questioning, we determined that the patient had an awake bruxism habit—grinding his anterior teeth in times of stress.

in those without parafunctional habits. Therefore, parafunctional activity (such as awake bruxism) can induce detrimental effects on the stomatognathic system quickly. Restoration failure, such as material chipping and fractures, is an unfortunate and costly occurrence that happens all too often.

IDENTIFICATION

For clinicians to treat awake bruxism, they first must diagnose it. A simple first screening step is to ask patients (on a medical history or examination form) whether they clench or grind their teeth. Much parafunctional activity is not accompanied by noise, however, which can make self-awareness difficult. This likely results in underreporting and, hence, the wide variation in frequency of reported bruxism, both sleep and awake.⁶ There is encouraging evidence, however, that once a person is made aware of waking oral habits, he or she is more likely to give accurate feedback.^{7,8} This initial screening can serve as an opening dialogue for clinicians to educate and inform patients about awake bruxism.

Another critical way for clinicians to identify a patient with a parafunctional habit is by damage to tooth structure. This damage includes wear facets, fractured teeth and restorations, craze lines, abfraction lesions, and ultimately loss of teeth (Figure 2).^{4,9-12} Although many times these are readily identifiable through a clinical examination, clinicians should use mounted diagnostic models to detect these defects more accurately and thoroughly. Other intraoral signs include indentations along the side of the tongue, as well as bony exostoses or tori.^{9,10,13} Periodontal changes, including widening of the periodontal ligament, tooth mobility, and recession, also may occur.^{11,14} If clinicians note this kind of damage, they should discuss the damage with the patients and review their medical history to determine the cause. When the clinician suspects a patient has a sleeping or waking parafunctional habit, it is important to discern what that habit specifically is. Although this article focuses on awake bruxism, there are multiple types of

waking oral habits that have been identified and that may require a different type of treatment.^{8,12,15} If a clinician (or patient) desires a more definitive method of diagnosis, they can use various techniques. To differentiate between sleep and awake bruxism, for example, the clinician can measure the electromyographic activity of the

masticatory muscles.¹⁶⁻¹⁸ The dentist can prescribe easy-to-use electromyographic devices to use during sleep to confirm muscle activity (for example, BiteStrip, Great Lakes Orthodontics). After initial screening and suspicion of a parafunctional habit, more in-depth patient questionnaires (with clear definitions) and at-home journaling can help further identify what type of parafunctional activities the patient engages in and how often.^{7,8}

CORRELATIONS AND COMORBIDITIES

A strong correlation exists between temporomandibular disorders (TMDs) and bruxism.^{9,19-21} Whether bruxism causes TMDs is undetermined, but there is support to show that diurnal bruxism exacerbates TMD symptoms, including headache, muscle and joint pain, and jaw locking.^{7,22-24} The activity of bruxism results in muscle hyperactivity, particularly the masseteric sling muscles (masseter and medial pterygoid) and the lateral pterygoids. Therefore, myalgia and muscle spasm can result, as well as temporal headaches.^{9,11,25-27} Subsequently, it is not uncommon to see hypertrophic masseters as a result of long-term bruxing. Some TMDs can elicit symptoms, including tinnitus, vertigo, and auditory changes, which also can worsen with diurnal bruxism.²⁸ Any patient who self-reports TMD, morning masticatory muscle pain or stiffness, or joint noises should be considered a possible bruxer and then identified as a sleeping or awake bruxer.

Bruxing is also a common phenomenon in children, particularly as deciduous and secondary dentition erupts. Carlsson and colleagues¹⁹ found that most self-identified adult bruxers were also bruxers as children. Specifically, awake bruxers continued to exhibit awake bruxism, and people with other parafunctional habits carried those into adulthood.

In addition, there are also medical conditions related to awake bruxism. These include dystonias and other

ABBREVIATION KEY. TMD: Temporomandibular disorder.

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