

# The Unintended Effects of Oral Appliances

Treatment May Have an Impact Beyond the Intended Outcome

Some dental professionals and continuing education providers have a tendency to separate the different areas of dentistry, treating them as individual disciplines that have no relationship with one another. However, the truth is that no dental therapy stands on its own; whatever treatments you perform affect the entire stomatognathic system, as well as the patient's overall systemic health. Failure to recognize this could result in poor patient outcomes, possibly creating or exacerbating other related conditions.

For example, clinicians commonly assume that a bruxism appliance only will protect the teeth and place the mandible in the selected position. Every oral appliance, however, will have a number of effects beyond the intended treatment outcomes. If you do not know all of an appliance's potential ramifications, then the appliance may end up seriously harming the patient rather than protecting the teeth.

## Beyond the teeth

Here's what I mean: Let's say you place a bruxism appliance in a patient who has another systemic condition. In patients with obstructive sleep apnea, for example, this appliance could fill up the tongue space and force the tongue back into the throat, making the patient's condition significantly worse, or even life-threatening.

Further, if you deliver a bruxism appliance to a patient with temporomandibular disorder (TMD) and orofacial pain, that patient may return in a few days with increased pain. Whether they're used for bruxism, TMD, orthodontics, or obstructive sleep apnea, occlusal and oral appliances affect a much greater anatomical area than the teeth.

Every type of dental appliance directly impacts the joints, airway, head and neck muscles, and tongue. Most practitioners know this, but some may lack a real understanding of the affected anatomy and the potential repercussions for their patients' underlying conditions. Dentists must be well-versed in every aspect of oral appliances and how they will affect the entire head and neck area.

Those not well-versed and well-trained in occlusal therapy, TMD/orofacial pain treatment, and dental sleep medicine should not be making any type of removable oral appliances for their patients. As many know, these fields are all closely interrelated and can have significant effects on one another.

It's also important that patients know that when you place any type of oral appliance, their condition may stay the same, get better, or get worse. Appliances often serve a diagnostic function in addition to their treatment function, providing the information you need to find the right therapeutic answers—if you have been trained in what to look for.

For example, if you seat an anterior bite plane for TMD/orofacial pain and the patient gets better, what does that mean? Generally, it means that all or most of the facial pain is muscle-related, and the patient is therefore an excellent candidate for BOTOX® therapy, which directly treats the muscles involved. If the patient does not get better and/or gets worse with an anterior bite plane, then he or she most likely has a joint problem. It's important that dentists think about all of these possible concerns and consequences prior to providing oral appliances.



Dr. Malcmacher demonstrates a muscle exam and mapping for trigger point therapy for orofacial pain and dental sleep medicine during a live continuing education class.

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### Understand an appliance’s impact

Using oral appliance therapy for obstructive sleep apnea without considering the patient’s present musculature, facial pain, or TMD symptoms is not compatible with successful therapeutic clinical outcomes. Many dentists have fallen into this trap, making a sleep apnea appliance for a patient who later returns with TMD symptoms and significant orofacial pain.

When a patient uses a sleep apnea appliance, the lateral pterygoid muscles are thrust forward and placed under tremendous stress. If you don’t understand the musculature, then those lateral pterygoids will go into acute or chronic spasms, thereby throwing off the occlusion and causing dysfunction in normal mastication.

If you understand how to do a proper examination and test the facial musculature in advance, however, you will have much greater success with oral appliances for bruxism and obstructive sleep apnea.

What does any of this have to do with facial esthetics? If your appliance makes a patient’s sleep apnea worse, how do you think that will make them look? Look at yourself in the mirror after you have had a poor night’s sleep—you have bags under your eyes, your whole face is drooping, and your best attempts at smiling will not be very successful.

On the other hand, how do you look after you’ve gotten a good night’s sleep? Your skin is much tighter, your smile is much wider, and you simply feel better, which makes you look better.

In order to learn how to diagnose and treat oral appliance cases properly and to achieve truly outstanding clinical outcomes, live patient training in all of the related disciplines—occlusal therapy, TMD/orofacial pain, and dental sleep medicine—is a must.

It’s time for dentists to stop delivering oral appliances without fully considering their potential effects. Oral appliance therapy is a balancing act among the different conditions affecting your patients; as the treating dentist, you are the primary health care provider who must maintain that balance and ensure these appliances have positive effects on your patients. ♦



Louis Malmacher, DDS, MAGD, is a practicing general dentist and an internationally known lecturer and author distinguished by his comprehensive and entertaining style. Dr. Malmacher is the president of the American Academy of Facial Esthetics. Contact him at [impact@agd.org](mailto:impact@agd.org).



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