



TMDs: How Much Does a Sleep Dentist Need to Know? *by Samuel J. Higdon, DDS*

If asked, most dentists would describe “TMJ” as a pain problem. There is little doubt that pain is usually what causes a patient to seek treatment. But if dentists limit their understanding to see only pain, then no pain would equal no problem, leaving both patient and dentist open for negative consequences of this narrow view.

For any dentist, whether or not they choose to treat TMD in their practice, this level of understanding of TMDs falls far short of meeting our professional obligation to the public with regard to these disorders. Having devoted over 30 years of practice to managing TMJ disorders, I can assure you that if these disorders are recognized in their early stages, perhaps even before the patient is aware of pain, the potential to treat them in a definitive manner is greatly enhanced. Early detection and treatment minimizes the probability of the patient experiencing recurring and persistent TMD in their life.

For years, several professional organizations, including the ADA,^{1, 2, 3, 4, 5} have recommended that all dentists screen their patients for TMDs. However, my experience suggests that very few dentists comply with these recommendations. Perhaps one of the reasons for this is that most dentists do not really know what it means to screen their patients for TMDs or how to incorporate a screening procedure into their practice. In a later article, I will discuss the screening procedure, including a protocol for its use.

But I also suspect that many dentists would prefer to believe that they can wait until the patient describes a specific TMD complaint before they need to be concerned and decide to do something about it. In my view, this is professionally short sighted. But because of the minimal training that most dentists received while in dental school, most are poorly prepared to take a more progressive approach to the identification and management of TMDs in their early stag-

es. As with caries, periodontal disease, and heart disease, identifying and treating TMDs in their incipient stage is the best assurance of a favorable long-term prognosis.

For the dentist providing mandibular advancement devices (MADs) for the treatment of sleep disordered breathing conditions, the stakes are much higher regarding the need to identify potential, even nonsymptomatic, TMD problems prior to initiating MAD treatment. Although the development of a TMD complaint in response to MAD treatment may occur infrequently, recognizing the potential for this to occur is extremely important for the sleep dentist.

Screening for TMD Signs and Symptoms — What Are We Looking For?

A screening history and exam can identify both muscle and joint conditions that have the potential, in response to MAD treatment, to evolve into significant clinical problems. A TMD screening history, if used routinely with all patients in any type of dental practice, can identify those patients who require a screening exam. However, because of the increased potential for triggering a TMD with MAD treatment, a screening history, alone, is not sufficient for SDB patients and both a history and a screening exam are always indicated.

The objective of a screening history and exam is to rule in or rule out potential problems. TMD signs, even before the patient is aware of symptoms, may involve only muscles. However, there is clearly a need to rule out any potential for involvement of the temporomandibular joints. If early signs of joint involvement are present, even before there is joint pain, it is necessary to determine if these signs represent a potential to develop into a clinical problem involving the temporomandibular joints with MAD treatment.

A PDF copy of a screening history and exam form is available for download at <http://medmark.link/2iEiYNe>. A discussion of this form and its implementation into your practice will be a part of a future article.

Muscle Signs in Screening History and Exam

Although the patient may not have made an association of certain signs suggesting involvement of the masticatory muscles, on the screening history muscle involvement is

strongly suggested when the patient indicates that they have temporalis headaches, tiredness when chewing or difficulty holding their mouth open wide at dental appointments.

On a screening exam, tenderness to palpation of the temporalis and masseter muscles will confirm that the masticatory muscles display hypertonicity and tightness, if not overt pain. These findings may be suggestive of clenching or grinding of the teeth but it would be naive to assume that this is the only possible explanation. Certain occlusal conditions, in particular a lack of occlusal stability, are often involved with muscle complaints, even in the absence of clenching and grinding. A full discussion of occlusal issues is beyond the scope of this series of articles.

In response to MAD treatment, muscle symptoms (in the absence of any TM joint signs) may not worsen. However, in a patient who is a clencher or grinder, where significant muscle tenderness is found on examination, the unavoidable increase in vertical dimension, due to the thickness of the MAD, may contribute to increased bruxism and potentially increased muscle symptoms. For this reason it is usually advisable to consider minimal thickness when choosing a MAD. In a patient with a deep, tight bite, the amount of vertical opening necessary to allow the advancement of the mandible using a MAD will, unfortunately, sometimes require a fairly significant increase in the vertical dimension and, thus, a fairly thick MAD. This presents a clinical dilemma that must be considered on a case by case basis.

It has been advocated by some that a combination of mandibular advancement together with some degree of increase in

Clinical dilemmas must be considered on a case by case basis.



Dr. Samuel J. Higdon's practice, for over 30 years, has been devoted to the non-surgical management of TMDs and other problems related to the function of the jaw system. He practices in Portland, Oregon. He is the author and illustrator of, "Illustrated Anatomy of the Temporomandibular Joint in Function/Dysfunction", an education aid for both patients and dental professionals regarding the unique functional anatomy of the TMJs. It is available at TMJAnatomy.com. He is also the co-author of an educational website related to temporomandibular disorders for professionals and patients, at DrawbridgeDDS.com.

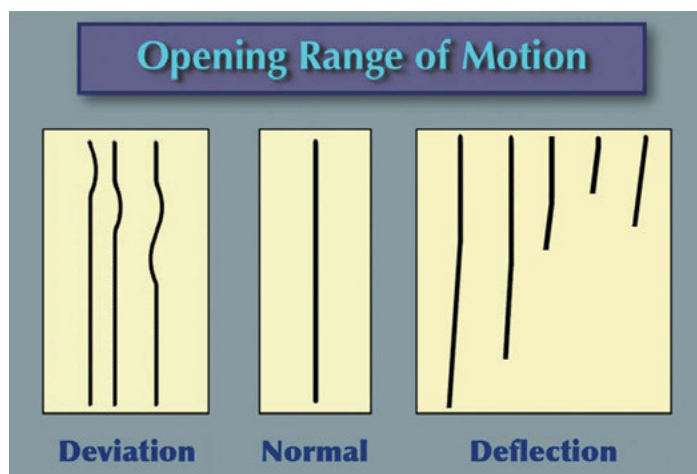


Figure 1

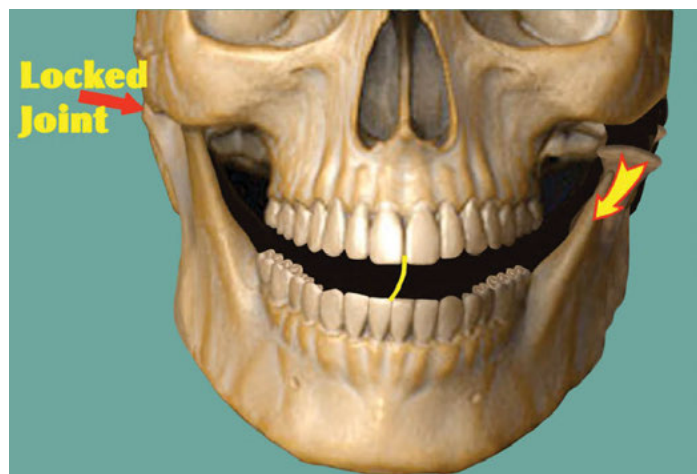


Figure 2

vertical dimension (beyond the minimum necessary for the appliance itself) may contribute to opening the airway. Currently, the literature supporting this approach is limited but suggests that an increase in vertical dimension for this purpose is not indicated.^{5,6}

Temporomandibular Joints Signs in Screening History and Exam

When there is retrodiscal tenderness of the temporomandibular joints, in response to palpation through the ear canal or with joint loading, even if the patient is relatively unaware of joint pain, there is a particular need to be cautious with MAD treatment. This pain, alone, suggests that the TM joints have sustained some degree of structural change that has allowed loading on retrodiscal tissues which, in an anatomically-normal joint, would not occur and would not result in pain.

What this may mean, as related to MAD treatment, can vary depending on other findings involving the joints; in particular, the presence and nature of joints sounds, the patient's range of motion, and whether they experience pain with certain jaw movements. As background information regarding what all of these findings may mean, a thorough understanding of both normal TMJ anatomy and variations in dysfunctional TMJ anatomy is extremely important.

When the signs and symptoms include the combination of "pain and restricted movement," the pain must be treated first before an adequate differential diagnosis of the cause of the restricted movement can be made. Initial assessment of range of motion is essential, not simply how far the patient

can open, but also their ability to move the jaw laterally and protrusively. The ratio of jaw opening vs. lateral movements in a healthy system is approximately 6:1.⁸ In a healthy system, bilateral movements would be expected to be approximately equal. Lateral movements of less than 8 mm are generally classified as restricted.^{9,10} The extent of protrusion (i.e. condylar translation) provides important information on the mobility of the joints. When opening is restricted but lateral and protrusive movements are within normal limits, the limitation on opening can be a result of elevator muscular tightness. If this tightness is effectively treated, the opening range of motion may return to normal limits.


The difference between the terms, deviation and deflection, and their significance needs to be understood (Fig. 1). Deviation on opening refers to a movement away from the midline but a return to midline at full opening. Deflection refers to a movement away from the midline that remains to the affected side at full opening. A deflection may be an indication of a disc displacement without reduction (joint locking) (Fig. 2). A deviation can be caused by a momentary interference (catching) of the disc that then is overcome (releases), usually accompanied by a click, and allowing a return to the midline. Evidence of nonsymptomatic catching and locking of a TM Joint should be seen as a red flag when considering MAD treatment. These anatomical variations will be addressed in greater detail in a future article.

In some cases, such as nonsymptomatic clicking and popping of the joints, there may be minimal consequences in response to

MAD treatment. In other cases, with similar findings, extreme caution may be indicated. Hard tissue crepitus or grinding sounds, if accentuated when opening the jaw from a protruded position, may be a contraindication for advancement of the mandible with a MAD.

The clinical judgement required to make an appropriate clinical decision regarding MAD appliance selection can be largely dependent on experience in dealing with temporomandibular disorders. Assuming that many dentists who are providing MAD treatment for sleep disordered breathing disorders

lack this depth of experience, it is all the more important, following a careful screening of the patient, that the findings of the history and exam be explained to the patient as thoroughly as possible regarding the potential for the development of TMD problems, including pain in response to MAD treatment.

In the next article, I will be explaining the use and implementation of the screening history and examination. In a future article, the findings related to a TMJ examination and the variations in TMJ anatomy will be discussed in much greater detail. 

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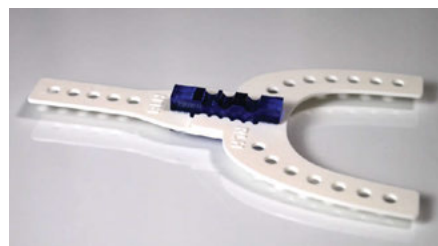
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