

## Diagnosis and Treatment of Temporomandibular Disorders: Emergence of a New “Standard of Care”



The readers of *Quintessence International* are fortunate to have so much information presented on so many topics in each issue. One topic that crosses all international boundaries is orofacial pain (OFP), because every dentist needs to understand and deal with the myriad of pain problems that come into their offices daily. Fortunately, many of these problems are common and can be successfully treated (eg, toothaches and tissue lesions)—and even better, they usually can be visualized with either the naked eye or radiographs. However, many other painful conditions are not so straightforward, featuring mostly subjective symptoms and few (if any) clinical findings. Unfortunately, some of these conditions may mimic ordinary toothaches, and they often end up being unsuccessfully treated with dental procedures.

Of all these non-odontogenic OFP conditions, those most familiar to dentists are the temporomandibular disorders (TMDs). It would be helpful if the dental profession had widespread agreement about the body of foundational knowledge required to care for TMD patients. However, it will be no surprise to the readers of this journal that this is not the case. Despite the many books and articles that have been written about TMDs, a clear standard of care for either diagnosing or treating TMD patients has not yet emerged. Guidelines regarding TMDs have been published by the American Academy of Orofacial Pain (AAOP),<sup>1</sup> and the American Academy of Oral Medicine has published a handbook for managing various orofacial pain conditions,<sup>2</sup> but these are not officially recognized as authoritative documents. The American Dental Association (ADA) has never established clinical guidelines for this segment of dental practice, but in Canada, the province of Ontario has done so.<sup>3</sup> The situation varies throughout the rest of the world, but in general, the topic of TMDs remains among the most controversial areas of interest for dentists in almost every country.

The arguments in the TMD field revolve around both major topics of clinical care, ie, diagnosis and treatment. Regarding diagnosis, the basic question is: What tools can the dentist use beyond his or her clinical skills to determine what the problem is? While various imaging modalities have been developed and validated for their use in diagnostic assessments of intracapsular TMJ problems, most of the technological devices that measure TMJ sounds, muscular activity, or jaw movements have failed to meet standards of reliability and validity. In other words, they do not satisfy the requirements for sensitivity and specificity that are essential for clinical diagnosis of individual patients. In the treatment area, the arguments are primarily about occlusal relationships, condylar positions, neuromuscular balance, and similar mechanistic issues.

Based on various concepts of “ideal,” many dentists believe these variables are the most important etiologic factors for developing TMD signs and symptoms. Therefore, their opinions about these variables drive the extensive and invasive treatment plans that have been and still are being provided to many TMD patients.

Some readers may interpret these comments to mean that the situation in the TMD field is so confused that it can be described as chaotic. However, that is not the case at all, because the dental literature of the past 30 years has gradually produced a body of information that is both scientifically valid and clinically useful. A few salient points are:

1. The use of so-called adjunctive diagnostic devices (except for various imaging procedures) does not add much to the ability to correctly diagnose orofacial pain problems based on a thorough history and examination protocol. Instead, their use may pose a relatively high risk of obtaining false-positive findings that lead to mechanistic therapies. Patients with non-TMD orofacial pain problems often end up being classified as TMD patients, and their real diagnosis becomes obscured by subsequent treatments for TMD.
2. The treatment of TMDs by conservative and reversible means has been shown to be both appropriate and successful. Little or no evidence has been found (when controlled studies are done) for the necessity of permanently changing occlusal relationships or condylar positions. In addition, it has been amply demonstrated that internal derangements (ID) of the TMJ disc usually do not need to be corrected. Instead, the majority of symptomatic ID patients will respond well to pain management and physical medicine approaches to those problems.
3. The importance of biopsychosocial variables, which tend to be ignored or minimized by mechanistic approaches, has been emphasized throughout the medical pain management world. Since TMDs are ultimately just another set of musculoskeletal pain conditions, it is obvious that dentists need to incorporate this perspective into the care for those patients. This is especially true when the patient’s pain becomes chronic, as this has a profound effect on psychosocial well-being.

Therefore, there is a clear need for a widely recognized Standard of Care in the TMD field—one that is based on the best available evidence and is endorsed by a major authoritative professional organization. A first attempt at this was presented in 1996, when the American Association for Dental

Research (AADR) published a Science Information Statement on TMDs.<sup>4</sup> Several years ago, the Neuroscience Group of AADR appointed a committee, headed by myself and including Professor Iven Klineberg from Australia as well as Professor Merete Bakke from Denmark. Our mission was to develop a new TMD Statement that would reflect the considerable advances in knowledge about TMDs and that would be quite clear and specific about the proper approach to diagnosis and treatment of TM-related conditions based on the best available scientific evidence. For its part, the AADR insisted on groups presenting a strong case for the necessity of making changes in previous Statements, and it also required literature citations to support those proposed changes. After a long review, revision, and approval process involving all levels of the AADR hierarchy (including their attorneys), the new TMD Statement that appears here was finally approved in March 2010.

We do not expect these new guidelines to end all discussion or controversy—especially in a field where the knowledge base still is incomplete due to the complexity of the relevant topics—but it is clear that the TMD Statement presented here represents the most reasonable positions on these topics at this time in history. Also, although the recommendations within that Statement are based on the best current evidence and are almost universally accepted within the scientific community, we expect that the practitioner community may have mixed reactions to it. We urge all clinicians to read it carefully and to look at the supporting references, and hopefully this new TMD Statement will have a strong, positive impact that will ultimately benefit both patients and professionals.

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## REFERENCES

1. American Academy of Orofacial Pain. De Leeuw R (ed). Orofacial Pain: Guidelines for Assessment, Diagnosis, and Management, ed 4. Chicago: Quintessence, 2008.
2. Greene CS, Hinderstein B, Konzelman J, Sollecito TP, Clark GT, Greenberg MS. Temporomandibular disorders: myogenous and arthrogenous conditions. In: Brown RS, Arm RN, Epstein JB (eds). Chronic Orofacial Pain, ed 2. Hamilton, Ont: BC Decker, 2008:21–37.
3. Guidelines of the Royal College of Dental Surgeons of Ontario: Diagnosis & Management of Temporomandibular Disorders & Related Musculoskeletal Disorders. Revised 2009. [http://www.rcdso.org/pdf/guidelines/Guidelines\\_TMD\\_Jul09.pdf](http://www.rcdso.org/pdf/guidelines/Guidelines_TMD_Jul09.pdf). Accessed 2 June 2010.
4. American Association of Dental Research: Scientific Information Statement on Temporomandibular Disorders. AADR Reports 1996;18(4).

## AADR REVISION OF TMD POLICY STATEMENT

Approved by AADR Council 3/3/2010

The AADR recognizes that temporomandibular disorders (TMDs) encompass a group of musculoskeletal and neuromuscular conditions that involve the temporomandibular joints (TMJs), the masticatory muscles, and all associated tissues. The signs and symptoms associated with these disorders are diverse and may include difficulties with chewing, speaking, and other orofacial functions. They also are frequently associated with acute or persistent pain, and the patients often suffer from other painful disorders (comorbidities). The chronic forms of TMD pain may lead to absence from or impairment of work or social interactions, resulting in an overall reduction in the quality of life.

Based on the evidence from clinical trials as well as experimental and epidemiologic studies:

1. It is recommended that the differential diagnosis of TMDs or related orofacial pain conditions be based primarily on information obtained from the patient's history, clinical examination, and, when indicated, TMJ radiology or other imaging procedures. The choice of adjunctive diagnostic procedures should be based upon published, peer-reviewed data showing diagnostic efficacy and safety. However, the consensus of recent scientific literature about currently available technological diagnostic devices for TMDs is that, except for various imaging modalities, none of them shows the sensitivity and specificity required to separate normal subjects from TMD patients or to distinguish among TMD subgroups. Currently, standard medical diagnostic or laboratory tests that are used for evaluating similar orthopedic, rheumatological, and neurological disorders may also be utilized when indicated with TMD patients. In addition, various standardized and validated psychometric tests may be used to assess the psychosocial dimensions of each patient's TMD problem.
2. It is strongly recommended that, unless there are specific and justifiable indications to the contrary, treatment of TMD patients initially should be based on the use of conservative, reversible, and evidence-based therapeutic modalities. Studies of the natural history of many TMDs suggest that they tend to improve or resolve over time. While no specific therapies have been proven to be uniformly effective, many of the conservative modalities have proven to be at least as effective in providing symptomatic relief as most forms of invasive treatment. Because those modalities do not produce irreversible changes, they present much less risk of producing harm. Professional treatment should be augmented with a home care program, in which patients are taught about their disorder and how to manage their symptoms.

(This document includes a list of supporting references; to view them go to <http://www.aadronline.org/i4a/pages/index.cfm?pageid=3465>.)