

Temporomandibular Disorders: Priorities for Research and Care. A New Milestone for the Specialty of Orofacial Pain

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In January of 2019, the National Academy of Medicine (NAM) initiated an in-depth, 15-month study of the status of current knowledge and clinical practices associated with temporomandibular disorders (TMDs). The National Academy of Sciences, which includes the NAM, was chartered by Congress in 1863 as a nonprofit institution that works outside of government to provide unbiased, objective opinions; consequently, its activities are conducted with multiple layers of oversight in order to ensure that objectivity and accountability are at the forefront of any final report. In this brief commentary, we will discuss a Report that was generated. Its formal title is *Temporomandibular Disorders: Priorities for Research and Care (2020)*.¹

The authors of this Commentary were directly involved in the National Academy process, with R.O. being one of only 3 individuals with training in dental medicine on the 18-member panel that met over the 15 months, and C.G. being one of the 15 reviewers of the draft version of the Report. We urge the readers to carefully read the accompanying Announcement, which summarizes the 11 major recommendations that were proposed in the final Report. We hope this will stimulate the readers to look online at the Report itself in order to appreciate the importance of this major document. The Report was published in March 2020, just as the COVID-19 pandemic began, and consequently the Report received little attention at that time. The purpose of the Announcement is to bring attention to this significant report on TMDs, and the purpose of this Commentary is to highlight, from the published Report, major points of relevance and their direct implications for the readership of this Journal.

The fact that the NAM became involved, for the first time in its history, in a very substantial examination of a particular segment of the dental profession is itself an indicator of the significance of this Report.

Patient advocacy for disorders specifically affecting the temporomandibular joint (TMJ) has, for decades now, pushed governmental agencies, including the National Institutes of Health (NIH), to do more for individuals affected by those disorders. In 2018, Congress finally examined the plight of those individuals and ordered the NIH to develop a document summarizing the current status and future directions for TMDs. Jointly, the Director's Office of the NIH and the National Institute of Dental and Craniofacial Research (NIDCR) requested that the NAM conduct an independent investigation of the status of TMDs—notably, the Director's Office seldom provides funding for institute-specific mandates, but this problem was considered serious enough that the highest level of NIH remained fully involved. The NAM did a broad search of several research and academic fields in order to identify the members of the panel. The primary charge to the panel was to examine all aspects of TMDs and to prepare a summary report of their findings.

Why did the NIH, NIDCR, and NAM need to conduct this investigation? Because the TMD field is our most controversial practice area within the dental profession, and one might say it is also our most malignant area in terms of morbidity (eg, human suffering) rather than mortality. Therefore, that a report of nearly 500 printed pages emerged from this in-depth examination of TMDs has substantial meaning to the dental profession. Fifteen months were required for this task; the panel members were all scientists and mostly from nondental fields, which means that their opinions after reviewing all the oral and written testimony deserve respect.

In our opinion, the Report is rewarding insofar as it demonstrates the considerable knowledge that has emerged primarily from dental research institutions. Those findings have shaped a solid base for

understanding at least some aspects of TMDs and pain more generally. Nevertheless, the findings were largely negative, reflecting the current reality of what patients experience as they seek treatment: a dearth of health care providers who understand the complexities of the masticatory system, who know and utilize the evidence regarding etiologies and current treatments that address what we do know about TMDs, and who follow the dictum of “do no harm.” The Report is also a scathing indictment of clinical practices that continue to be promoted and utilized despite having been sufficiently discredited based on a considerable body of research. Professional dental organizations that promote discredited ideas regarding TMDs are identified in the Report, which further demonstrates the value of rigorous independent review with multiple layers of oversight.

The recommendations in the Report (as summarized in the accompanying Announcement) cover every aspect of education, research, public health, and care delivery relevant to the TMD field. Within these recommendations are reflections of the current realities regarding the many shortcomings in this corner of the dental profession. In particular, the evidence for occlusion as a substantial causal factor or necessary treatment factor related to TMDs was examined, and once again both the panel and reviewers of the Report find that there is no support in the scientific literature for either claim.

A notable aspect of the Report's recommendations points to the need for much greater education within the profession. Training physicians and allied health care providers, such as nurses or physical therapists, to a greater extent regarding TMDs is another laudable and important goal. However, the realities of the spectrum of pain disorders affecting the masticatory system and adjacent structures, perhaps best exemplified by a recently published comprehensive and inclusive taxonomy of pain conditions affecting this part of the body,² point to the dental profession as having the best chance to meet the needs of these conditions. Why? Because of the complexity of masticatory function and the challenges of differential diagnosis associated with the most common source of pain in this region; ie, the teeth. Consequently, a much greater number of training programs for TMD and orofacial pain specialists is needed in order to provide sufficient coverage across the population. This type of advanced training must focus on skills in managing complex disease; there is no substitute for a supervised training model in order for a dentist to achieve the very different type of competence that is required for TMDs. Training dental students to better recognize these disorders

and to better understand the limits of what predoctoral education can provide is also critically needed; de-implementation of simplistic mechanistic models of TMD diagnosis and care must start with better education. Because TMDs can become complex once they move beyond the acute phase, appropriate management of the acute phase becomes even more important. Furthermore, we now know that even when they are acute, a TMD problem is seldom an isolated disorder, but rather emerges from within a complex mixture of risk determinants. As demonstrated elsewhere, clinical success of one's favored therapies does not prove mechanisms, and it does not prove generalizable (and predictable) efficacy.³

It is also notable that the Report identifies the AAOP as an important stakeholder in the clinically relevant steps required to achieve the stated Recommendations. Among the clinical organizations purporting to address TMDs within the USA, only the AAOP has developed patient education materials consistent with the peer-reviewed and evidence-based knowledge base that is available at this time. The existence of a valid board certification, as well as a journal that contributes scholarly research to the field, also highlights the appropriateness of the AAOP being identified in this important role. The approval of Orofacial Pain as a recognized specialty in the USA, which occurred shortly after the Report was published, was certainly a fortuitous event, built on many years and profound efforts of many of the leaders in this field. Thus, the Report affords profound opportunity for the AAOP, for the specialty, and for the field to advance the profession's understanding of contemporary TMD management concepts.

In summary, educators, researchers, clinicians, and patients with concerns about TMDs are strongly encouraged to read the accompanying Announcement as a first step and then to read the Report in its entirety. The readers of this journal will definitely appreciate this document for its scope, for its critical appraisal of where the dental profession is and where it needs to go, and for its goals that are achievable through a combination of strong science and smart policy.

References

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