

## Controversies in TMD: Riddles of Taxonomy

Rewriting a chapter on controversies in temporomandibular disorders (TMD) for the second edition of a text on the temporomandibular joint (TMJ) reinforced for me the extent to which disagreements on the treatment of TMD patients hinges on problems of classification. An ideal taxonomy should be based on verified etiology (not presumed as is frequently the case with TMD). Although frequently presumed, the cause of TMD is thought to be unknowable and the syndromes therefore classified on the basis of signs and symptoms. Although Rugh and Solberg<sup>1</sup> have pointed out that similar signs and symptoms do not confirm a common etiology and that a spectrum of disorders is widely accepted, the unitary syndrome concept persists.

Balancing interferences, interferences between centric occlusion and centric relation, Class II division 2 malocclusions, orthodontic treatment, bruxism, and whiplash have all been cited as causes of TMD by some and refuted by others. While Lund<sup>2</sup> has contended that "the etiologies of none of the TMD are known," perceptions of etiology, reinforced by treatment successes independent of the type of treatment, sustain these controversies. Depending on training and background, some clinicians may still see TMD as a syndrome of occlusal origin and others as a syndrome of psychological origin. The former will treat with splints and the latter with biofeedback or other stress-reducing modalities. Regardless of whether the etiology is knowable, biases about cause affect treatment selection. Since TMD of muscle origin tends to get better despite the type of treatment (occlusal treatment and stress-relieving treatment are equally efficacious), presumptions about cause are further reinforced.

Even though all current diagnostic schemes for TMD are based on a classification of symptoms and signs, further controversy is created by differences in opinion as to what criteria define TMD. These criteria are referred to as a "gold standard." A gold standard for a disease or disorder is the

consensus definition of what constitutes that disease or disorder. Not only is the gold standard important for the patient, ie, they do have or they do not have the disease or disorder, but it is also the benchmark against which diagnostic protocols and devices are tested for validity.

While there is a general agreement that TMD represents a spectrum of disorders (with presumably different gold standards), the widely accepted single gold standard for TMD includes (1) pain in muscles or the TMJ, (2) limited range of motion, and (3) clicking or crepitus in the joint. (Some would also include headache in this list of obligate signs and symptoms.) Although this singular gold standard encompasses disorders of muscle and joint origin, it leads to confusion in choice of treatment modality, assessment of treatment efficacy, and coding for third-party reimbursement.

Our Academy, in conjunction with the International Headache Society, has developed categories of headache or facial pain associated with the TMJ and masticatory muscles: there are six subclassifications of TMJ disorders and six subclassifications of masticatory muscle disorders with specific diagnostic criteria.<sup>3</sup> These may be considered gold standards. Dworkin and colleagues<sup>4</sup> have developed a dual-axis diagnostic protocol with eight clearly defined subgroups in Axis I (Clinical TMD Conditions) and three incompletely defined classification criteria for Axis II (Pain-Related Disabilities and Psychological Status). Criteria for each subgroup have been established. While multiple gold standards for TMD now exist, clinicians and investigators frequently adhere to the single gold standard.

A perusal of TMD journal articles illustrates the residual tendency to regard TMD as a single syndrome. Astute readers may at this point interject that frequently TMD is manifested by signs and symptoms of more than one subgroup. Diagnosis must permit the concurrent identification of features common to both Academy classifications 11.7 and 11.8, as is done in the Research Diagnostic

Criteria for TMD of Dworkin and colleagues.<sup>4</sup> Use of a single gold standard for TMD, rather than multiple gold standards, inevitably results in controversy because the cases being examined or treated are not the same.

While assumptions regarding etiology and a single gold standard are reasons for controversy in identifying and treating TMD, a major step must be the adoption of diagnostic criteria that allow both clinicians and investigators to identify comparable subsets of the TMD spectrum. Treatment becomes more focused as diagnostic criteria are better characterized. A single gold standard does not encourage differentiating a disc displacement from capsulitis or myofascial pain from myositis. The efficacy of an instrument to quantify the pain of muscle pressure points or changes in condylar movement pattern will be higher when tested against gold standards for myofascial pain and disc displacement rather than against a single gold standard. Developing a consensus on the use of multiple gold standards would reduce the controversy in TMD from continued use of a single gold standard.

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## References

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3. American Academy of Orofacial Pain. McNeill C (ed). *Temporomandibular Disorders. Guidelines for Classification, Assessment, and Management*. Chicago: Quintessence, 1993.
4. LeResche L, Von Korff MR. Research diagnostic criteria. Axis I: Clinical TMD conditions. Axis II: Pain-related disability and psychological status. In: Dworkin SF, LeResche L (eds). *Research Diagnostic Criteria for Temporomandibular Disorders: Review, Criteria, Examinations and Specifications, Critique*. *J Craniomandib Disord Facial Oral Pain* 1992;6: 327-334.

## Erratum

The authors Stephen Levitt, MD, PhD, and Michael McKinney, PhD, wish to apologize for an inadvertent error in their recently published "Appropriate Use of Predictive Values in Clinical Decision Making and Evaluating Diagnostic Tests for TMD" (*J Orofacial Pain* 1994;8:298-308).

The error involves the data interpretation key for positive and negative predictive values in Figs 2 to 4 on page 303. In each figure, the words "Positive Predictive

Value" should have been followed by an open box (□), and "Negative Predictive Value" by a filled-in circle (●). The predictive value curves reproduced here with these changes correctly demonstrate increasing positive predictive values and decreasing negative predictive values as the pretest estimate increases from 0% to 100%. The results and discussion within the manuscript are then correct as published.

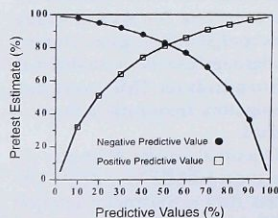


Fig 2 Predictive values of the Global Scale versus pretest estimates of the likelihood of TMD.

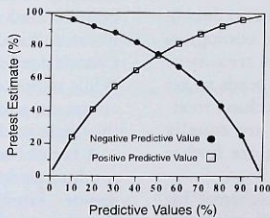


Fig 3 Predictive values of the Joint Dysfunction Scale versus pretest estimates of the likelihood of presence of joint dysfunction.

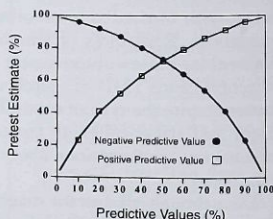


Fig 4 Predictive values of the Stress Scale versus pretest estimates of the likelihood of presence of stress.