

# Beyond Wilkes's Staging: A Case for Redefining Temporomandibular Joint Disorders Diagnosis and Treatment Planning

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Temporomandibular joint (TMJ) disorders encompass a wide spectrum of conditions, including arthralgia (joint pain), biomechanical dysfunctions of the condyle-disc complex (joint disorders), and joint diseases such as degenerative joint disease (DJD) (osteoarthritis/osteoarthrosis). These disorders can have a profound impact on an individual's health, affecting their quality of life, leading to disability, and incurring a significant economic burden.<sup>1</sup>

Traditionally, the assessment and management of TMJ disorders across various specialties have been founded on the belief that the natural history of these disorders adheres to a specific progression model. This model posits a sequence beginning with no Disc Displacement (DD)/no DJD, advancing to DD with Reduction, followed by DD without Reduction, and culminating in a stage of DJD. This sequential progression of signs and symptoms was classically described by Rasmussen,<sup>2</sup> and then reaffirmed by Wilkes,<sup>3</sup> who identified various stages of intra-articular pathological changes and their time course, suggesting the progressive nature of these conditions.

For decades, Wilkes's criteria for staging internal derangements of the TMJ have been one of the most widely adopted classification methods, shaping clinical decision-making in the field of maxillofacial surgery. These criteria have guided practitioners in diagnosing and developing surgical treatment strategies based on the presumed progression of the disease.

However, despite the extensive use of Wilkes's staging and its possible utility in determining disc position, disc gross anatomical state, and degree of osteoarthritic findings,<sup>3</sup> relying solely on these criteria as a framework for diagnostic and therapeutic decision-making may oversimplify the complexities and pathophysiological intricacies of TMJ disease progression. Such a singular approach fails to fully account for the individual's neuroanatomic, neuroimmune, functional, sociological, genetical, and developmental factors, as well as overlapping comorbidities that may modulate the individual's maladaptive response, progressive dysfunction, and TMJ pain chronicity. Moreover, clinical research has not yet unraveled or translated into meaningful evidence-based guidelines, making it difficult for clinicians to bridge these gaps in translational knowledge and convert them into safe and effective clinical treatments.<sup>4</sup>

Interestingly, the disease progression model mentioned above has recently been challenged by a significant study assessing the longitudinal stability of TMJ DD and DJD. This study observed 401 subjects over an 8-year period through magnetic resonance imaging and computed tomography.<sup>5</sup> The main findings of this study indicate that the classic model of TMJ disorders progression may be just one of many possible outcomes. It was observed that among the majority of subjects, both soft and hard tissue diagnoses remained stable over time, suggesting that the TMJ is stable and adaptive, with the potential for improvement

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and even healing.<sup>5</sup> This challenges the traditional view of disease progression and suggests that TMJ disorders are neither typically reversible nor progressive in a predictable manner. Certainly, this has significant implications for clinical practice, suggesting that interventions should be focused on managing symptoms rather than attempting to alter the structural aspects of the TMJ.

In light of compelling current and future research in the field, it is clear that while the time-honored Wilkes's model for internal derangement progression is foundational, it should no longer serve as the definitive framework for diagnosis, prognosis, and treatment. Recognizing the complexities of TMJ disorders is paramount for the evolution of diagnostic and therapeutic protocols. This recognition must call into question whether staging-based treatment schemas accurately reflect the dynamic nature of these conditions. The challenge ahead is to pivot from a staging-based model to a phenotype-based, patient-centered model. This

transition, from intervention to management, underscores our ultimate goal: to enhance the well-being of individuals living with TMJ disorders.

## References

1. List T, Jensen RH. Temporomandibular disorders: Old ideas and new concepts. *Cephalalgia* 37(7):692-704, 2017. <https://doi.org/10.1177/0333102416686302>
2. Rasmussen OC. Description of population and progress of symptoms in a longitudinal study of temporomandibular arthropathy. *Scand J Dent Res* 89(2):196-203, 1981
3. Wilkes CH. Internal derangements of the temporomandibular joint pathological Variations. *Arch Otolaryngol Head Neck Surg* 115:469-477, <http://archotol.jamanetwork.com/>
4. National Academies of Sciences Engineering and Medicine Health and Medicine Division Board on Health Care Services Board on Health Sciences Policy Committee on Temporomandibular Disorders (TMDs). From Research Discoveries to Clinical Treatment, *in* Yost O, Liverman CT, English R, Mackey S, Bond EC (eds): *Temporomandibular Disorders: Priorities for Research and Care*. Washington, DC, National Academies Press (US), 2020
5. Schiffman EL, Ahmad M, Hollender L, et al. Longitudinal stability of Common TMJ structural disorders. *J Dent Res* 96(3):270-276, 2017. <https://doi.org/10.1177/0022034516679396>