

TMDs—Where are we today?

Temporomandibular disorders (TMDs) are a group of musculoskeletal and neuromuscular conditions that involve the temporomandibular joints (TMJs), the masticatory muscles, and associated tissues. The condition was first recognized by Costen in the 1930s and over the next 80 years the terminology has been revised multiple times until the current term 'temporomandibular disorders' was introduced, which is now largely accepted. It is now clear that they do not occur in isolation but may also be associated with other systemic and comorbid medical conditions. Sleep disorders like obstructive sleep apnea (OSA) and sleep bruxism also show a higher incidence in TMD patients. Hence TMDs are now considered under the umbrella of 'Orofacial Pain,' which is now a recognized dental specialty in the United States since 2020. The common features of TMDs include pain in the face and preauricular areas, pain, limitations and noise emanating from the TMJs during mandibular movements.

With a prevalence of about 10–15% for adults and 4–7% for adolescents, they are the 2nd most common cause for orofacial pain following odontogenic pain. They are also primarily a condition of young and middle-aged adults, twice more common in women than in men.

The etiology is multifactorial, and several risk factors appear to predispose, precipitate, initiate or prolong TMD-pain. These can be classified as Trauma (Direct, indirect, microtrauma), Anatomic (Skeletal, occlusal relationships), Pathophysiologic (Systemic, local, genetic) and Psychosocial. Direct trauma or microtrauma includes a direct injury/blow to the jaws/TMJ, wide or prolonged mouth opening (yawning or opening for a dental procedure) and intubation. Whiplash injury associated with car accidents constitute indirect Trauma, while Parafunctional habits (clenching and bruxism) and postural imbalances which apply force in a sustained and repetitive manner to the body structures for a long period of time, constitute microtrauma. Though the relationship between dental occlusion and TMD has been a controversial topic, there is robust 21st century literature backed by solid scientific methodology which clearly shows that occlusion has no role to play in the etiology of TMDs. Evidence is increasing about the genetic susceptibility for TMDs, but genetic association studies are limited. The often neglected systemic and psychosocial factors seems to play a greater role in the etiology.

Classification systems involved were the Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD) published in 1992, which has been replaced by the Diagnostic Criteria for TMD (DC/TMD) in 2014. It involves a biopsychosocial model which includes Axis I (physical assessment of the disorder using reliable diagnostic criteria, which classifies the disorders as joint or muscle disorders) and Axis II (psychosocial assessment, which could influence the expression and management of the TMD).

Only 3.6–7% of individuals with TMDs have been estimated to require treatment/ management as they are often self-limiting, remitting or fluctuating over time. Progression to a potentially more serious non-reducing disc status or chronic and disabling intracapsular TMJ disease is relatively uncommon. There is international consensus that reversible and conservative treatments should generally form the first line intervention for TMDs. These include patient education, physical self-regulation, cognitive behavioral therapy, physical therapy, pharmacotherapy and splints or stabilization appliances. Irreversible therapies like occlusal equilibration (selective grinding of teeth), orthodontics and restorative treatments lack any scientific evidence to support their use in the management of TMDs. Surgical interventions are only indicated in a small number of cases and only if there is an intra-articular disorder, degenerative joint disease, or other evident disease affecting the temporomandibular joint.

To summarize, TMDs should be considered as an entity of orofacial pain. Relevant precipitating, perpetuating and contributing factors should be identified through a detailed history and clinical examination. It is important to incorporate and evaluate the sleep history of patients as these disorders modify the nature of the disease. Muscle disorders like myofascial pain, are more difficult to diagnose and may require recurrent treatment. The role of systemic factors is extremely important and needs to be investigated. There is little evidence to implicate occlusal factors in TMD etiology and hence irreversible occlusal adjustments should not be performed. Evidence-based diagnosis and treatment are the need of the hour.

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