

Temporomandibular Disorders



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Temporomandibular disorders (TMDs) are among the most common complaints in the general population. TMD is a term applied to clinical problems involving the muscles of mastication, the temporomandibular joint (TMJ) and associated structures, or both. TMJ pain is reported in 10% of the population and TMD may occur in 46% of the US population making TMDs significant contributors to pain in the face and head region. Characterizing TMD is difficult as there is such variability of signs and symptoms among studied populations. The most prevalent symptom of TMD is pain. However, pain associated with joint tenderness and/or worsened with function may also be present. Among the most frequent signs accompanying the pain are joint noises, such as clicking or crepitus and limited or deviated mandibular range of motion. 40% to 75% of the population shows at least one sign of joint dysfunction and about 33% have at least one pain symptom. Fewer than 5% out of the 75% with a sign or symptom require treatment. TMD is 1.5-2 times more prevalent in women indicating that the female reproductive hormones may have an etiologic role.

The TMJ is one of the most complex joints in the body since it allows a hinging movement in one plane and at the same time provides for gliding movements, making it a ginglymoarthrodial synovial joint. It has two compartments an upper and lower joint space. The mandibular condyle and the temporal fossa are separated by an articular disc. The condylar stability during mandibular movement is maintained by the articular disc which is mostly devoid of vasculature and nerve tissue. In contrast, the retrodiscal tissue on the posterior aspect of the disc is highly vascularized and well innervated and plays a major role in the pathophysiology of TMJ pain. Additionally, inflammation or injury of the joint capsule and the synovial tissues can cause pain within the joint but this inflammatory process usually resolves without any complications.

Asides from capsulitis and synovitis, polyarthritides are the other primary inflammatory conditions of TMJ. Polyarthritides are primarily associated with rheumatologic diseases and are uncommon. Chronic TMD is most often associated with painful derangement of the joint. The articulating surfaces, including the disc, are composed of dense fibrous connective tissue which make them more resistant to degenerative changes and give them a greater capacity to repair. However, alteration in the disc morphology and elongation of the retrodiscal ligament may lead to disc displacement and tissue breakdown. Different factors like age, gender, stress, previous trauma and systemic illness can contribute to this process. Most often acute and chronic disc displacements are not painful. Disc derangement disorders are categorized as either disc displacement with reduction or disc displacement without reduction.

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In a disc displacement with reduction during mouth opening, the temporarily misplaced disc improves or reduces its structural relationship with the condyle and a clicking or popping accompanies this movement. If the noise is also heard during the mouth closing, the clicking is called reciprocal which is produced by the redisplacement of the disc. Clicking noise in the reducing disc displacement is very common and is not pathogenic or a sign of degeneration. In an asymptomatic sample of individuals with TMD, over 33% can have moderate to severe derangement and as many as 25% of clicking joints display normal or slightly displaced disc positions. Therefore, treatment is not warranted in asymptomatic clicking joints. Disc displacement with reduction may persist for years to decades without any complication or progression to disc displacement without reduction. The condition where the dislocated disc is nonreducing and or unable to return to its normal position on the condyle is called disc replacement without reduction or closed lock. In the acute stage, there is a sudden onset of a persistent marked limited opening and pain due to a jamming or trapping of the disc. Clinically the acute phase is manifested with a lack of joint noise in the affected joint, deflection of mandible to the ipsilateral side as well as marked limited laterotrusive movement to the contralateral side. With the transition into a chronic stage, there is a significant pain reduction or complete pain relief and gradual increase of opening range to normal.



Pain of muscular origin is by far the most common type of TMD with myofascial pain being the most diagnosed muscle disorder. Myofascial pain is characterized by a regional muscle pain described as dull and achy or throbbing when more severe associated with the presence of trigger points. These are localized areas in the muscles, tendons or fascia felt as taut bands. The trigger points clinically may be present in an active or latent state. Palpation of an active trigger point generates pain referred to a distant site. Each muscle has its own specific pain pattern. When latent, palpation may be tender locally, but does not produce referred pain. The diagnosis is confirmed by an immediate pain reduction of greater than 50% after each trigger point is injected by local anesthetic. The etiology of myofascial pain is not clear.



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