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# Primary treatment modalities for temporomandibular disorders

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## Abstract

Temporomandibular disorder is a very common problem encountering up to 33% of individual in their lifetime. These disorders include muscular conditions, such as myofacial pain and disorders affecting the temporomandibular joint complex, such as disc replacement disorders and arthritic diseases. This paper outlines temporomandibular disorder`s etiologic factors, treatment goals, home care, and psychologic support/intervention in stress management.

**Keywords:** Temporomandibular joint, Pain, Stress management.

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## 1. Introduction

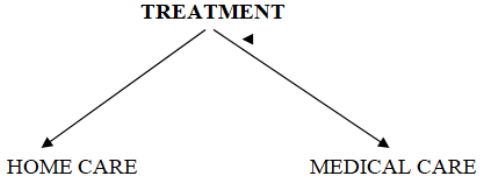
A temporomandibular disorder or TMD is a collective term that is used to designate a group of musculoskeletal condition affecting the temporomandibular joint and its associated structures. TMDs can be classified into four broad categories having similar clinical characteristics: (1) Masticatory muscle disorders, (2) Temporomandibular Joint disorders, (3) Chronic mandibular hypomobility disorders, and (4) Growth disorders. TMDs can be cyclical and self limiting, with periods of complete remittal of symptoms. Primary treatment options include (1) Self care (2) Medical care (3) Surgical care. [7]

## 2. Treatment goals

The treatment goals for TMDs are decreasing pain, restoring normal range of motion, and restoring normal masticatory and jaw function.

### 2.1 Etiological factor

1) Stress, muscle disorders, trauma etc.
2) The presumed association between edentulism and TMDs resulted from the traditional mechanistic notions tooth loss is a predisposing factor to mandibular dysfunction.
3) The loss of vertical dimension of occlusion has also been assumed to play an important role in the etiology of TMDs in elderly and edentulous patients.
4) Mechanistic etiological concepts have now been eclipsed by biological variables, which include cellular, molecular, neurophysiological, neuroendocrinological, immunological, and genetic mechanisms of joint diseases.
5) In the case of muscle-related TMDs, sensitization of peripheral tissues, neuro-plasticity in pronociceptive and antinociceptive circuits and behavioral sensitization associated with increased emotionality and with pain-specific neuroendocrine and autonomic responsivity have been reviewed.[6]




### 2.2 Self-Care (Home Care):

Convincing information indicates that self care is an effective method to address TMDs pain.

- A successful home care program consists of:
  - Resting the masticatory muscles by limiting jaw movements,
  - Parafunctional habit modification,
  - Emphasizing a soft diet
  - Moist heat and /or ice therapy.

- Physical self–regulation (PSR), which involves training in breathing, postural relaxation, and proprioceptive reeducation, or standard dental care (SDC), which consists of patient education about self-care.
- Thus, a formalized self-care education program is as effective as the standard appliances that can be used.
- Appliances may be superfluous in the treatment of patients with TMDs.[3]

**2.3 Medical Care (Non-Surgical):**

- **Physical modalities:**

➢ A wide range of physical modalities includes
✓ The use of heat and cold therapies
✓ Ultrasound
✓ Joint mobilization
✓ Passive stretching
➢ Local heat application is widely used for pain relief; its benefit has been questioned because raised temperature increases tissue inflammation.
➢ On the other hand, the superiority of cold over heat therapy for reducing inflammation and swelling has been documented.[3]
➢ The vapocoolantspray (e.g. Gebauerethylchloride) provides a temporary anesthesia effect to the muscles, so a more intense stretch can be achieved without pain[5]
➢ Although the long-term efficiency of physical modalities for musculoskeletal pain conditions has not been established, their safety, low cost and short-lived benefit in providing pain relief justify their use as palliative measures for TMDs[3].

**2.4 Pharmacotherapy:**

Commonly used pharmacological agents for the treatment of TMDs include analgesics, nonsteroidal anti-inflammatory drugs (NSAIDs), local anesthetics, corticosteroids, muscle relaxants and anti-depressants.

❖ Tylenol (acetaminophen). This medication is usually tolerated well by the patient with minimal side effects[3]
❖ The strongly addictive drugs (e.g., morphine) are generally contraindicated for musculoskeletal pain[5]
❖ NSAIDs are helpful with most TMD pains. These drugs are effective for mild to moderate inflammatory conditions and acute postoperative pain.
❖ Ibuprofen (e.g., Motrin 400-600mg, Nuprin 1200-3200mg orally/day) has proved to be effective in reducing musculoskeletal pains. A common dosage of 600 to 800 mg three times a day will often reduce pain and stop the cyclic effects of the deep pain.[6]
❖ Local anesthetics are primarily used when a myofascial trigger point is present. Muscles may be sore for the first 48 hrs after the injection, but generally should be less tender after that[7]
❖ The most common local anesthetic drugs used for short-duration pain reduction in TMDs are 2% lidocaine (Xylocaine) and 3% mepivacaine (Carbocaine), 1ml of amcinolone.[5]
❖ Corticosteroids (eg: hydrocortisone 10mg /5 ml) may be used for acute and chronic TMD symptoms[7]
❖ Anti-depressants (eg, Amitriptyline 25-50 mg/day) may be used (tension type headache, depression in TMJ disorder patients)[5].

**2.5 Surgical therapy:**

❖ Surgical recommendations will depend on the degree of pathology as well as the result of previous conservative treatments.
❖ Arthrocentesis: It is a minimally invasive procedure to remove debris and inflammatory byproducts.[1]
❖ TMJ arthroscopy: Patients with pain and jaw dysfunction not responsive to nonsurgical dental /medical management, frequent mandibular dislocation, but it is crucial to keep the procedures as brief and atraumatic as possible.[6]
❖ Modified condylotomy: It addresses the TMJ indirectly, it may be helpful for treatment of pain and if locking is experienced[2]
❖ Open joint surgery: Open joint surgery (arthrotomy) to repair or replace the joint ,but it depends on the degree of pathology / the result of previous non surgical treatments.[1]

So, consideration should be given to the patient's extent of impairment and their compliance with previous nonsurgical treatment modalities [2].

**2.6 Splints for occlusion:**

Anterior repositioning splint prescription may vary, but it is usually used for chronic, intermittent closed-locking patient [4]. The short term (6 weeks) use of this appliance is mainly recommended. By the use of this appliance the bite changes start to happen and the patient should be instructed to discontinue the use of the splint, and it may need to be converted to a stabilized non reposition appliance. Some patients may feel increased pain with the use of a splint. In this case, the splint as well as initial diagnosis should be reevaluated. If the pain persists, the discontinuation of splint therapy is recommended. [7]

**2.7 Psychologic Support/Intervention:**

When physical or sexual abuse is suspected, it is often best for the dentist to refer the patient to a qualified clinical psychologist or psychiatrist for evaluation and appropriate therapy. Referral to mental health professional specializing in pain disorders place a major role in temporomandibular disorder treatment modalities. [8]

**2.8 Stress management:**

Stress management is a wide spectrum aimed at controlling a person's level of stress.

Clinical examination of TMJ disorder and stress includes:

- Para functional habits including bruxism and clenching[4]
- Orofacial pain
- Limitation of jaw opening
- Vertical dimension collapse[8]

The prevention of stress related TMJ disorders include

- Life style modification
- In bruxism and clenching, the treatment includes psychological counseling, night guards/or occlusal splints.[4]
- Avoid/minimize using recreational drugs such as ecstasy and cocaine.[5]

## 3. Conclusion

Orofacial pain is relatively common, and tempromandibular disorders encompass the majority of these cases. Diagnosis is assigned to a specific criteria based on signs and symptoms and is critical to offering appropriate treatment. Because the etiology of temporomandibular disorders is poorly understood, recommendations for treatment are suggested to be reversible, palliative and evidence based. Many temporomandibular disorder patients require prosthodontic treatment to stabilize their occlusion and should be evaluated by advanced radiologic imaging to ascertain the stability of the temporomandibular joint complex. Although most temporomandibular joint derangement is stable, the patient should then be counseled as to the potential need for further treatment if the disorder precipitates any change.

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