

Nonsurgical Management of Pediatric Temporomandibular Joint Dysfunction



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KEYWORDS

- Temporomandibular disorder • Temporomandibular joint • Management • Pediatric • Children
- Therapy

KEY POINTS

- Patients with temporomandibular joint dysfunction most commonly present with pain, restricted or asymmetric mandibular motion, and temporomandibular joint sounds during mandibular movements.
- The prevalence of temporomandibular disorders in infants, children, and adolescents tends to increase with age. However, the prevalence varies extensively in the literature.
- Nonsurgical management of temporomandibular joint dysfunction consists of a combination of patient education, home-care plan, biobehavioral therapy, physical therapy, pharmacotherapy, and orthotic jaw appliance therapy.

INTRODUCTION

Temporomandibular disorders (TMD) are defined as a subgroup of craniofacial pain problems that involve the temporomandibular joint (TMJ), masticatory muscles, and associated head and neck musculoskeletal structures.^{1,2} Patients with TMD most commonly present with pain, restricted or asymmetric mandibular motion, and TMJ sounds during mandibular movements.² TMD can become chronic, produce significant dysfunction, suffering, disability, and alteration of function and activities of daily living. The American Academy of Orofacial Pain (AAOP) has suggested that TMD can be divided in 4 broad categories: TMJ articular disorders, masticatory muscle disorders,

headache disorders, and associated structures (**Boxes 1–3**).³

The prevalence of TMD in infants, children, and adolescents tends to increase with age.⁴ However, the prevalence varies extensively in the literature. This variation may be attributed to multiple methodological differences, such as disparity in examination and assessment methodology, difference in diagnostic criteria, dissimilar cohort samples, and inter-rater and/or intrarater variations among examiners.⁵ Most articles have reported the prevalence of TMD-associated signs and symptoms to be rare in infants with primary dentition. However, others have reported that up to 34% of children with primary dentition may have at least 1 sign or symptom associated with TMD.^{5–8} Similar disparity

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Box 1**Taxonomic classification for temporomandibular disorder**

1. Temporomandibular joint articular disorder
2. Masticatory muscle disorders
3. Headache disorders
4. Associated structures

Box 2**Taxonomic classification for temporomandibular joint articular disorders**

1. Joint pain
 - A. Arthralgia
 - B. Arthritis
2. Joint disorders
 - A. Disk: condyle complex disorders
 - i. Disk displacement with reduction
 - ii. Disk displacement with reduction with intermittent locking
 - iii. Disk displacement without reduction with limited mouth opening
 - iv. Disk displacement without reduction without limited mouth opening
 - B. Other hypomobility disorders
 - i. Adhesions/adherence
 - ii. Ankylosis (fibrous, osseous)
 - C. Hypermobility disorders
 - i. Subluxation
 - ii. Luxation
3. Joint diseases
 - A. Degenerative joint disease (osteoarthritis, osteoarthritis)
 - B. Condylitis
 - C. Osteochondritis dissecans
 - D. Osteonecrosis
 - E. Systemic arthritides
 - F. Neoplasms
 - G. Synovial chondromatosis
4. Fractures
5. Congenital/developmental disorders
 - A. Aplasia
 - B. Hypoplasia
 - C. Hyperplasia

Box 3**Taxonomic classification for masticatory muscle disorders**

1. Muscle pain limited to the orofacial region
 - A. Myalgia
 - i. Local myalgia
 - ii. Myofascial pain with spreading
 - iii. Myofascial pain with referral
 - B. Tendonitis
 - C. Myositis
 - i. Noninfective
 - ii. Infective
 - D. Spasm
2. Contracture
 - A. Muscle
 - B. Tendon
3. Hypertrophy
4. Neoplasms
 - A. Jaw
 - B. Soft tissues of head, face, and neck
5. Movement disorders
 - A. Orofacial dyskinesia
 - B. Oromandibular dystonia
6. Masticatory muscle pain attributed to systemic/central disorders

is observed in children with mixed dentition. The prevalence varies from as low as 5% to nearly 10%.^{5,9} Likewise, in adolescents with permanent dentition, prevalence of symptoms and signs associated with TMD ranges from 5% to 32.5%.^{5,10} Among adolescents from 16 to 19 years of age, 32.5% of girls and 9.7% of boys have reported school absences and analgesic consumption caused by pain associated with TMD.¹⁰

Irrespective of the subtype of TMD, the pathophysiology is poorly understood. However, it is considered to be multifactorial. The most commonly identified causal factors include female gender,^{11,12} pain provoked during jaw function and/or palpation, oral parafunctional behaviors, trauma, presence of other chronic pain conditions, pain sensitivity,¹³ and psychosocial characteristics.^{4,13,14} This article focuses on TMJ articular disorders (TMJADs), which seem to be more prevalent in the pediatric population.

Management of TMJADs consists of a combination of patient education, home-care plan,

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