

Multidimensional classification system for temporomandibular disorders (TMD)

<h2>Patho-anatomical factors</h2> <table border="1"> <tr> <td> Non TMD <ul style="list-style-type: none"> Referred pain Local inflammation / infection Neurovascular Psychiatric Medically unexplained </td> <td> Less common TMD <ul style="list-style-type: none"> Neoplasms Fracture Infection Systemic disease Growth disturbances </td> <td> More common TMD <ul style="list-style-type: none"> Myalgia Arthralgia +/- <ul style="list-style-type: none"> Disc displacement Degenerative changes Hypermobility, subluxation Headache attributed to TMD Mixed </td> </tr> </table> <p style="text-align: center;">.....▶ Red flags?</p>		Non TMD <ul style="list-style-type: none"> Referred pain Local inflammation / infection Neurovascular Psychiatric Medically unexplained 	Less common TMD <ul style="list-style-type: none"> Neoplasms Fracture Infection Systemic disease Growth disturbances 	More common TMD <ul style="list-style-type: none"> Myalgia Arthralgia +/- <ul style="list-style-type: none"> Disc displacement Degenerative changes Hypermobility, subluxation Headache attributed to TMD Mixed 	
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<h2>Neuro-physiological factors</h2> <p>Stage: Acute → Subacute → Chronic [Recurrent]</p> <p>Progression: Improving Stable Deteriorating</p> <p>Behaviour: Mechanical ↔ Non-mechanical</p> <p>Mechanism: PNS ↔ CNS</p>					
<h2>Physical factors</h2> <p style="text-align: right;">Low ↔ High</p> <p>Macro trauma</p> <p>Micro trauma: stress / strain / hyperactivity / loading due to...</p> <table border="1"> <tr> <td>Sustained postures</td> <td>Parafunction</td> <td>Movement patterns</td> <td>Muscle hypertonicity</td> </tr> </table>		Sustained postures	Parafunction	Movement patterns	Muscle hypertonicity
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<h2>Comorbidities & genetic factors</h2> <p style="text-align: right;">Low ↔ High</p> <ul style="list-style-type: none"> Health comorbidities (e.g. sleep disorders, fibromyalgia, RA) Medications (e.g. SSRIs) Dental (e.g. malocclusion, hypodontia, poorly fitting dentures) Genetic (e.g. pain sensitivity, hypermobility) 					
<h2>Cognitive factors</h2> <p style="text-align: right;">Low ↔ High</p> <ul style="list-style-type: none"> Beliefs, thoughts (fearful), catastrophising, hypervigilance, expectations, self efficacy 					
<h2>Psychological / emotional / affective factors</h2> <p style="text-align: right;">Low ↔ High</p> <ul style="list-style-type: none"> Stress sensitivity, anxiety, depression, anger 					
<h2>Social factors</h2> <p style="text-align: right;">Low ↔ High</p> <ul style="list-style-type: none"> Relationships, culture, socioeconomic (e.g. litigation), occupation (supervisory support, satisfaction, control), life stress ± events 					
<h2>Lifestyle factors</h2> <p style="text-align: right;">Low ↔ High</p> <ul style="list-style-type: none"> Life stress, ergonomics, hobbies, diet, sleep pattern / hygiene, work structure, caffeine, smoking, alcohol, recreational drugs 					
<h2>Overall risk status:</h2> <p style="text-align: right;">Low ↔ High</p>					

Further Information

Red flags

 (Indicators of serious pathology for orofacial area)

- **Age <19 or >51:** new or unfamiliar symptoms / dysfunction [cancer; growth disturbance]
- **Progressive pain / dysfunction despite treatment;** non-mechanical, constant [cancer]
- **Paroxysmal unilateral lancinating pain;** autonomic signs (eye watering / redness or drooping eyelids) [trigeminal neuralgia; trigeminal autonomic cephalalgias]
- **Unilateral headache / scalp tenderness;** new; age >50; jaw claudication; visual symptoms; general malaise; polymyalgia [temporal arteritis / GCA]
- **Pain precipitated by exertion, coughing, sneezing;** or abrupt in onset; severe; or interrupts sleep [intracranial pathology; cardiac ischaemia]
- **Severe night pain** [cancer; infection; inflammation]
- **Occlusal changes;** new [cancer; bone growth (e.g. acromegaly) around the TMJ; inflammatory arthritis; trauma; secondary to use of occlusal appliance]
- **Trismus:** mouth opening less than 15mm; progressively worsening; no history of clicking; pain of non-myofascial origin (e.g. neuralgia); swollen lymph glands; suspicious intra-oral soft tissue lesion; painless limitation in young [cancer; growth disturbance]
- **Pulsating tinnitus;** unilateral [vascular pathology]
- **Persistent loss of smell;** purulent discharge; nasal blockage; recurrent bleeds [nasopharyngeal tumour; chronic sinusitis]
- **Hoarseness;** sudden onset [cancer]
- **Globus sensation;** with pain [cancer]
- **Neurological S&S** changes in: facial sensation / power, vision, smell, taste swallow; or muscle atrophy, dizziness, cognitive changes, gait disturbance, reduced hand dexterity, long tract signs [intracranial pathology e.g. cancer, MS]; or ipsilateral hearing loss [acoustic neuroma; nasopharyngeal tumour]
- **Trauma** to head / neck; osteoporosis [fracture]
- **Weight loss** [cancer]
- **Fever** [septic arthritis, osteomyelitis, intracranial abscess, tooth abscess, mastoiditis]
- **History of cancer** [new cancer; recurrence; metastases]
- **HIV / AIDS / injection drug abuse** [infection; immunosuppression]
- **Facial asymmetry;** deformity; mass; nodule; swelling of TMJ, mandible, parotid gland [trauma; cancer; infection; inflammatory arthropathy; lymphadenopathy; growth disturbance] (muscle hypertrophy!)
- **Neck mass / persistent cervical lymphadenopathy** [cancer; infection]
- **Skin lesions;** growing, pigmented – e.g. face, mouth, neck [cancer]

Physical factors

Micro trauma: stress / strain / hyperactivity / loading due to...

Sustained postures	Parafunction	Movement patterns	Muscle hypertonicity
<ul style="list-style-type: none"> • Forward head position • Phone bracing • Prone sleeping • Chin resting on hands • Tooth contact • Jaw bracing • Denture holding • Protrusion • Lateral excursion • Tongue between teeth 	<ul style="list-style-type: none"> • Sleep bruxing • Awake habits: <ul style="list-style-type: none"> □ Clenching / tooth tapping □ Nail / skin biting □ Gum / pen / hair chewing □ Lip or cheek sucking / biting □ Tongue thrusting / biting • Sustained talking / singing • Musical instrument (∝ jaw) 	<ul style="list-style-type: none"> • Hypomobility (why?) • Hypermobility, subluxation • Deviation (∝ joint sounds) • Excessive protrusion • Mastication (anterior or unilateral dominance) • Cocontraction 	<ul style="list-style-type: none"> ∝ Emotional tension ∝ Protective guarding ∝ Physical activity ∝ Apprehension

Useful questions to help identify psychosocial factors

- What do you **understand is the cause** of your symptoms?
- What are you **expecting will help** you?
- What are **you doing to cope** with your symptoms?
- How are **other people responding** to your symptoms?
- Have you had **time off work** with symptoms?
- Has your **social life** been restricted due to symptoms?
- **Low mood, anxiety, life stress?**