

TMD and Orthodontics

Medico-legal considerations

CE Lecture by:

Assistant lect. Hala Mohammed and Asist Prof. Dr. Mehdi Alrubayee

TMDs

Several conditions affecting the:

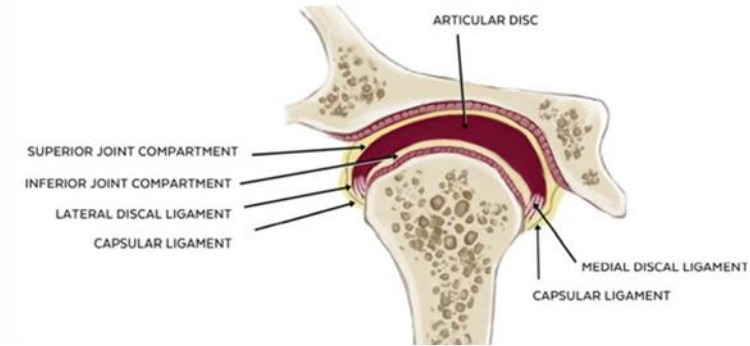
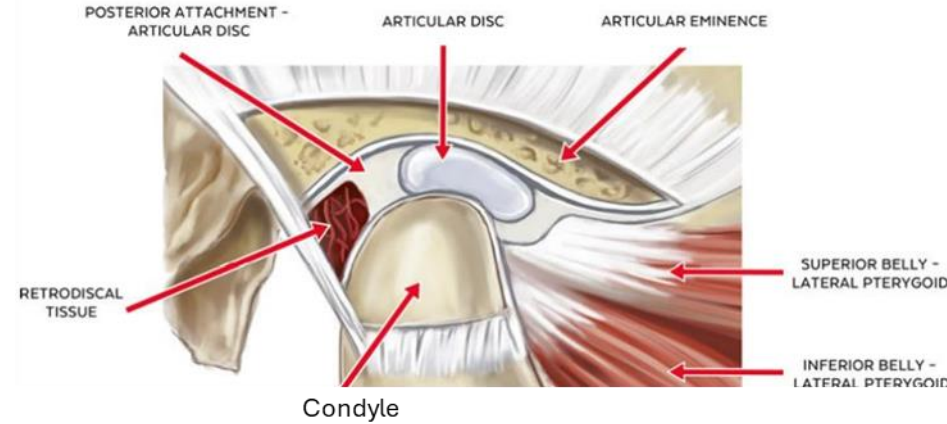
- **temporomandibular joint (TMJ)**
- **masticatory muscles**
- **associated structures such as ?**

Why TMDs important for the orthodontist

- orofacial pain vs orthodontic pain
- Misdiagnosed with other pain sources
- more common in females, 20–40 years which is the age of adult orthodontic patient

Anatomy

- Mandibular condyle
- Articular disc
- Glenoid fossa
- Ligaments
- Capsule

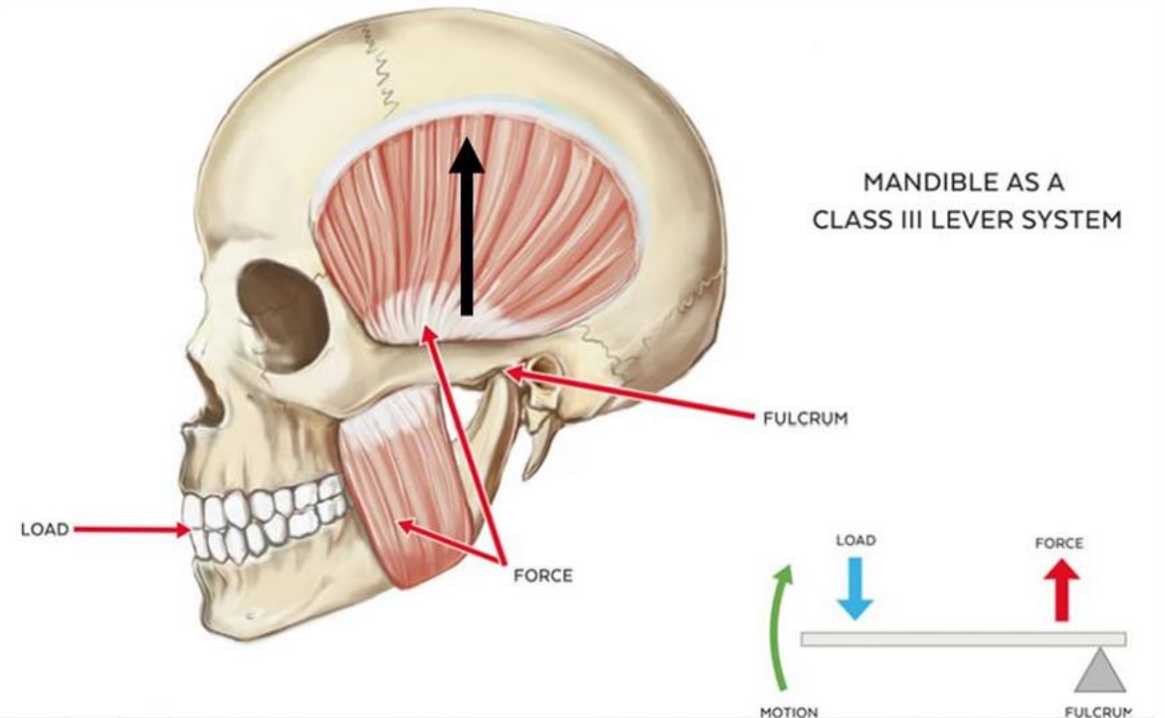


- Muscles of mastication:

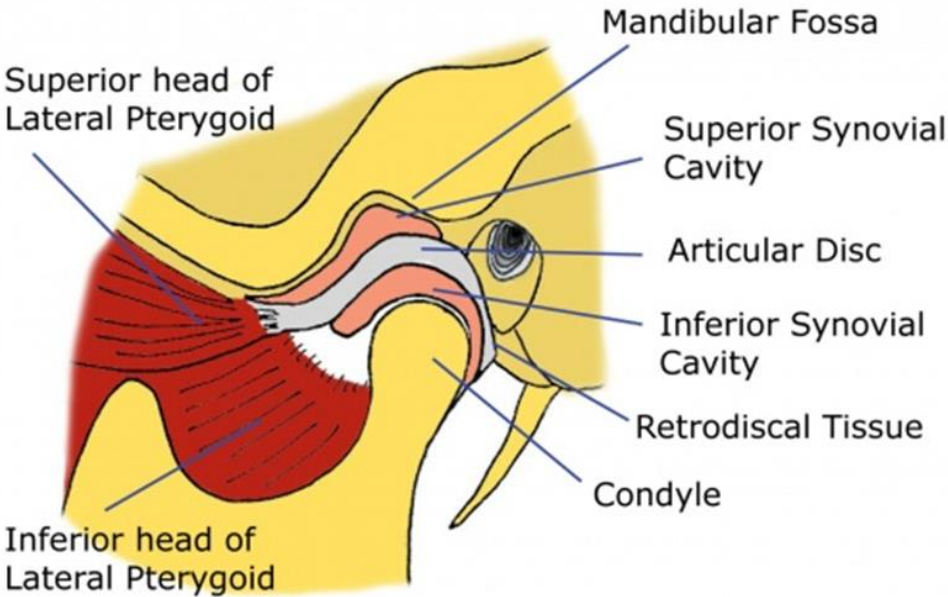
- Masseter
- Temporalis
- Medial & lateral pterygoids

- TMJ movements:

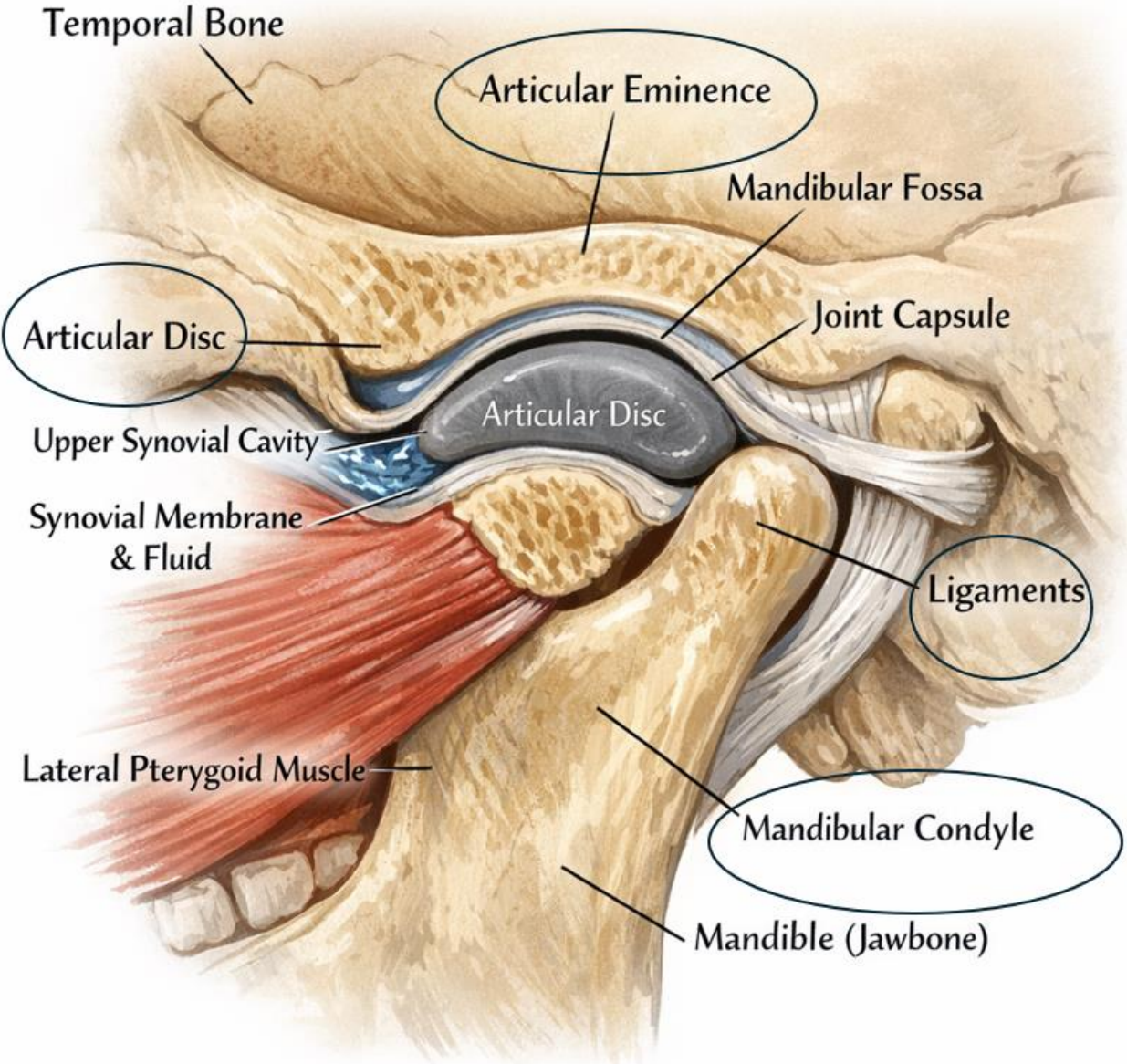
- Rotation in the lower compartment
- Translation in the upper compartment



Don't trust some resources??



The Temporomandibular Joint



Etiology of TMDs

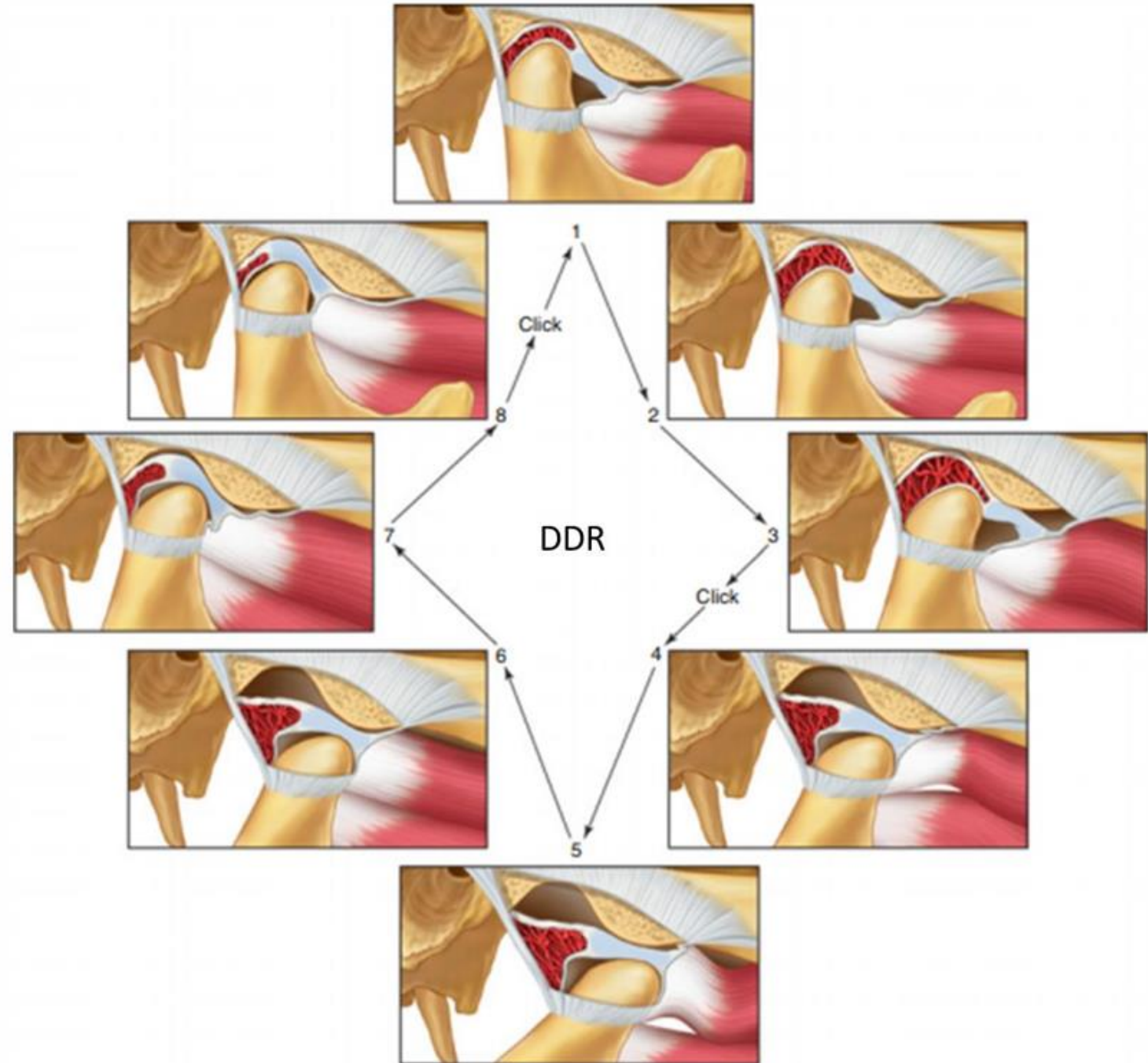
- Parafunctional habits (night bruxism, clenching)
- Psychological factors (stress, anxiety)
- Trauma (macro & micro) **WHIPLASH INJURY**
- Systemic diseases (rheumatoid arthritis)
- Postural issues
- Occlusal factors (controversial)



Classification of TMD

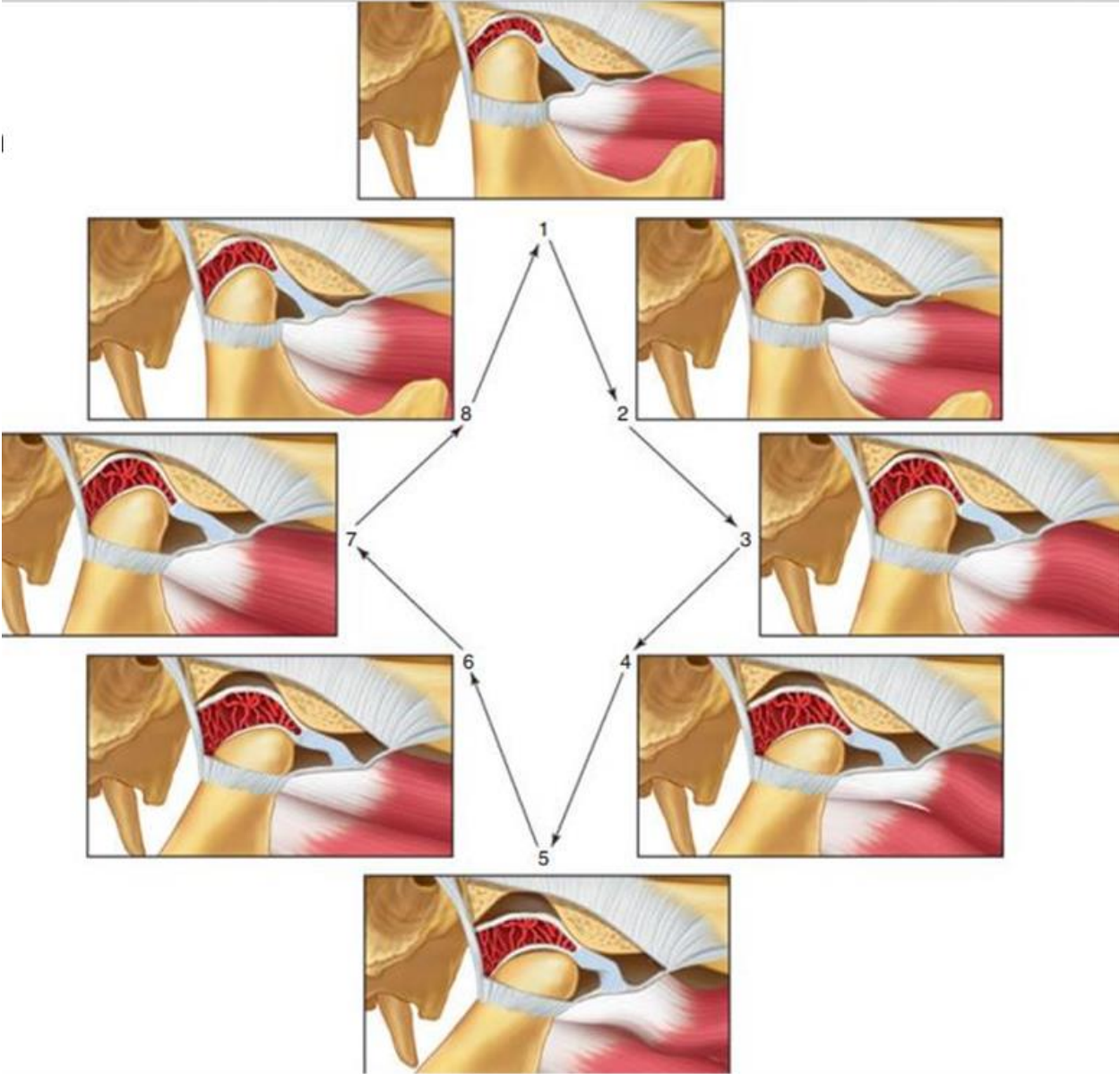
- **A. Extracapsular Muscle Disorders 90%**
 - Myalgia
 - Myofascial pain
 - Myositis
- **B. Intracapsular Joint Disorders**
 - Disc displacement with reduction
 - Disc displacement without reduction
 - Degenerative joint disease (osteoarthritis)
 - Inflammatory conditions (synovitis, capsulitis)

TMJ disc displacement/ internal derangement



Disc displacement with no reduction

TMJ locking



Clinical Signs & Symptoms

Pain
(jaw, face, ear,
temple)

Joint sounds
(clicking,
crepitus)

Limited mouth
opening/locking

Deviation

Headache

Ear symptoms
(tinnitus,
fullness)

How must orthodontist respond if receiving a TMD-based referral?

A dual challenge

1- educated the patient

2- orthodontist must inform the referring doctor about more appropriate referral

Developing TMD symptoms before, during or after orthodontic treatment

- Before? don't launch treatment unless TMD symptoms relieved
- During ? stop the active mechanics and follow a conservative protocol
- After? It is unwise that dentists ask the TMD patients if they have a previous orthodontic treatment/extraction of 4s

Diagnosis of TMD

- **A. History Taking**

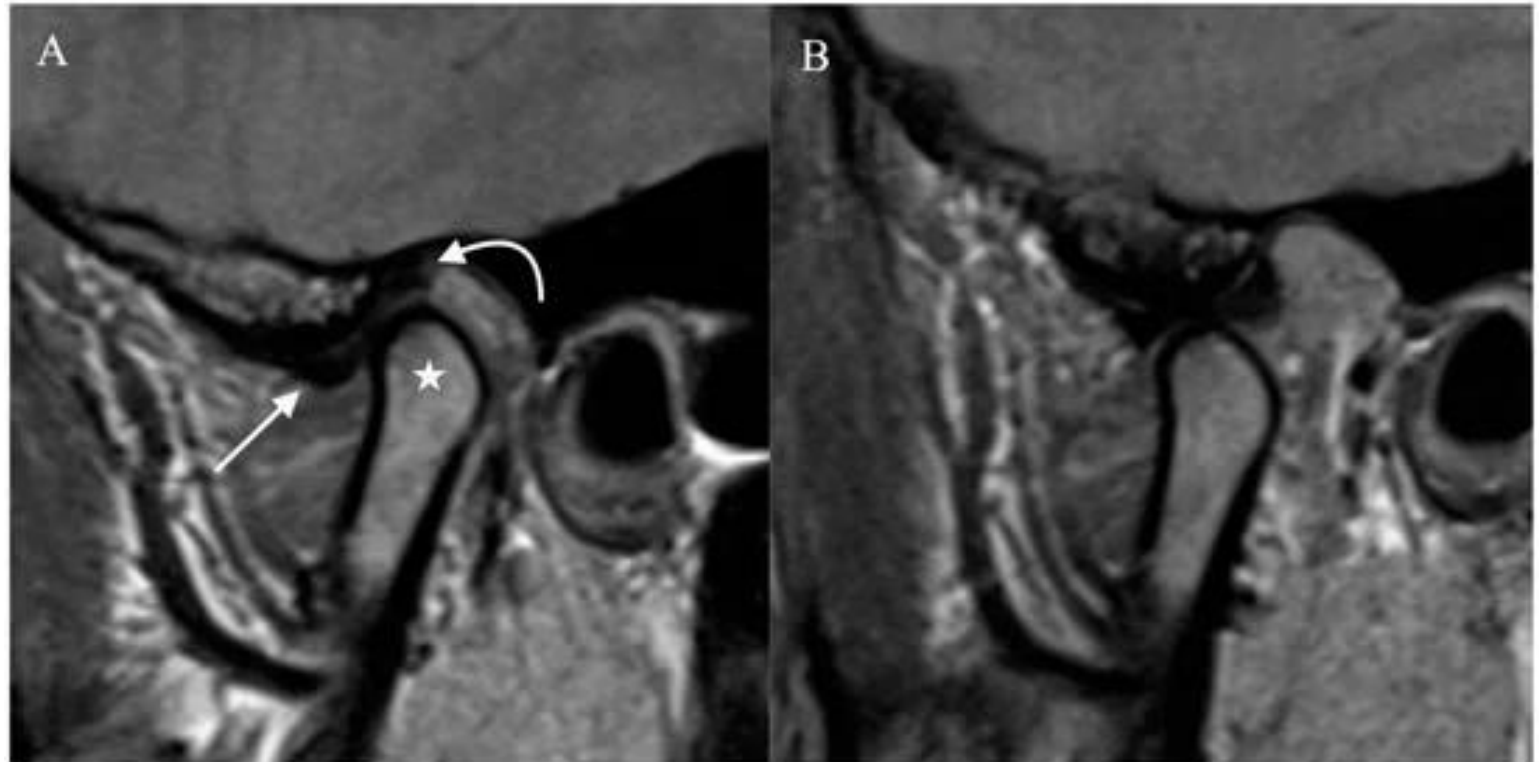
- Pain characteristics
- Duration, triggering factors
- Parafunctional habits

- **B. Clinical Examination**

- Palpation of muscles & TMJ
- Measurement of mouth opening
- Joint sounds
- Occlusal evaluation such premature contact

Imaging

- OPG (screening)
- MRI (gold standard for disc position)
- CBCT (bony changes)



What is the TMD clinical threshold?

- Transient and self-resolving Most of signs and symptoms detected in TMJ muscles of mastication may be temporary
- Not self-resolving TMJ imperfection but not clinically significant and do not reach the threshold of being significant clinical TMD problems.
- True TMDs with major symptomology that are discovered in screening of orthodontic patient

Management of TMD

- **Conservative (First-line)**
- Education & reassurance
- Soft diet
- Avoid parafunction
- Physiotherapy (Exercise, Heat therapy, Posture correction)
- Stress management
- NSAIDs, muscle relaxants such as Myocalm twice daily

Occlusal Appliances

- Stabilization splint (Night guard/ bite guard/Michigan splint)
- Indications and limitations

Use of Splints in treatment of TMDs

many potential negative outcomes due to:

- irreversible occlusal and jaw position changes
- altered vertical dimension major dentoalveolar discrepancies
- quite invasive, expensive

However, advantages:

- temporary
- relaxation of muscles
- Reduction of oral habits
- reduced joint loading
- general relief of symptoms

Advanced Management

- Intra-articular injections steroids or botolium
- Arthrocentesis
- Surgery (last resort)

Medicolegal considerations of TMDs

- TMJ examination should always be accompany the orthodontic examination.
- Documenting negative findings are equally important as documenting positive findings.
- Records should always be clear, thorough, and timely records.

Taking the informed consent

Verbal vs written consent

- Interactive treatment decision
- In and understandable language what the particular problem is?
- the various ways in which it can be treated,
- benefits,
- risks,
- limitations,
- compromises associated with each viable treatment approach
- any necessary secondary treatment
- prognosis associated with each approach as well as the option of no treatment
- how long treatment will take, scheduling concerns, financial responsibilities etc.
- opportunity to ask and have answered all of their questions.
- Patient agreement that everything is clear and all questions were answered
- Patient. Care`s signature

Conclusions

- TMD is common but manageable
- Accurate diagnosis is essential
- Conservative treatment is usually effective
- Multidisciplinary approach may be required

Thank you