



Stomato 202

LECTURE 3

**Craniomandibular
articulation**

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☞ Temporomandibular joint

- It consists of:

1) Three articulating components

- a) Condyle
- b) Mandibular fossa
- c) Articular disc

2) Capsule (primary attachment)

3) Ligaments

a) The condyle:

- **2cm** wide medio-laterally
- **1cm** thick antero-posteriorly
- Its superior (articulating) surface is convex
- Its anterior surface is tilted medially

b) Mandibular fossa (glenoid fossa):

- It's a depression in squamous temporal bone
- Its mediolateral dimension is longer than anteroposterior dimension (like condyle)
- It has a **medial tubercle** (wall) that controls medial movement of the condyle
- Its lateral end is slightly elevated to form a lateral tubercle **smaller** than medial tubercle
- The lateral tubercle limits movement of condyle in skull
- Anterior to the fossa is the **articular eminence**

▪ **Articular eminence:**

- At birth, articular eminence is very small, allowing **horizontal movement** of condyle
- It **increases in height** with eruption of primary teeth, changing the movement into **forward&downward movement**

يعني و احنا صغيرين بتبقى صغيرة فبتسمح بحركة افقية بس, لما بتكبر بتعمل زي المطب فبتخلي الفك يتحرك لقدام و كمان لتحت

- It develops (grows) more with eruption of permanent teeth
- **Function of articular eminence:**
 - 1) fixation of the condyle to act as a fulcrum
 - 2) lower the mandible to separate posterior teeth during **protrusion&laterotrusion** of the mandible

c) capsule (capsular ligament) (essential ligament):

- it's the **primary attachment** of the condyle to the mandibular fossa
- it surrounds mandibular fossa and neck of condyle

d) articular disc:

- it's devoid of any blood supply or nerve fibers (so there is no pain)
- it's positioned between the **two bones** that form the joint
- **the fibrous nature of the disc is favorable in two aspects:**
 - 1) fibrous tissue is less susceptible to degenerative changes with old age than hyaline cartilage
 - 2) repair of fibrous tissue is easier than that of hyaline cartilage

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▪ synovial fluid in the joint space has two functions:

1) **transition** of the nourishments and waste products to and from the disc

2) **lubricating** the disc

❖ **attachment of the disc**

1) **posterior:**

- retrodiscal tissue attaches disc to capsule
- this retrodiscal tissue is loose & highly vascularized and innervated
- **superior retrodiscal lamina** attaches disc to the tympanic plate
- **inferior retrodiscal lamina** attaches the disc to the posterior margin of the condyle

2) **anterior:**

- **superiorly** to the anterior margin of the articular eminence
- **inferiorly** to the anterior margin of the articular surface of condyle

e) ligaments:

1. capsular ligament (major)
2. temporomandibular ligament (major)
3. discal ligaments (major)
4. sphenomandibular ligament (accessory *فرعية*)
5. srtlomandibular ligament (accessory)

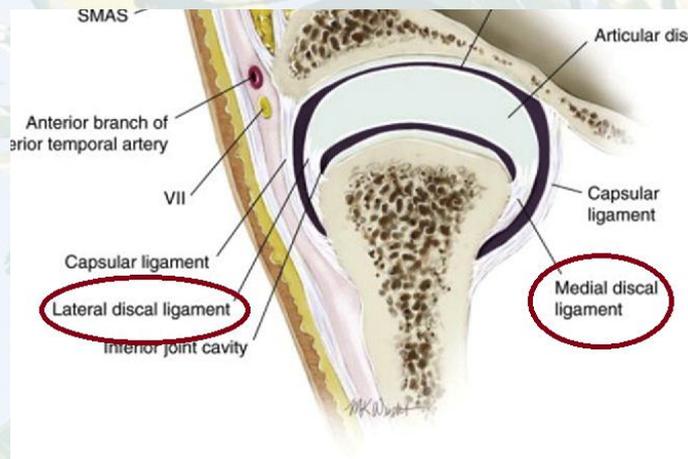
- these ligaments are **important** because they **limit** craniomandibular articulation & **define** the border movements of the mandible

temporomandibular ligament:

- it has 2 parts: outer oblique, and inner horizontal
- **function:** to limit and prevent undue backward movement of the mandible (condyle) into the posterior wall

discal ligament

- it attaches the **lateral** edge of the disc to **lateral** pole of condyle, and the **medial** edge of the disc to **medial** pole of condyle
- they **do not stretch**
- **function:** move the **disc** with the gliding **condyle** (بيخلو الاتنين)
(يتحركوا مع بعض بس مش بيحصلهم شد)



sphenomandibular ligament

- extends from spine of sphenoid to lingual of mandible
- **function:** limits movement of mandible to prevent stretch of inferior alveolar nerve

stylomandibular ligament

- extends from styloid process to mandible
- **function:** limits protrusive movement of mandible

