أهلا وسهلا

الأستاذ الدكتور يوسف حسين

أستاذ التشريح وعلم الأجنة - كلية الطب – جامعة الزقازيق – مصر

رئيس قسم التشريح و الأنسجة و الأجنة - كلية الطب - جامعة مؤتة - الأردن

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دكتوراة من جامعة كولونيا المانيا

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Muscles of mastication

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Muscles of mastication

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- **General rules :**

They include **4 muscles:**

1) Masseter.
2) Temporalis
3) Lateral pterygoid.
4) Medial pterygoid.

- **Origin**: they arise from the temporal and infratemporal fossa.
- **Insertion**: they are inserted into the ramus of the mandible.
- **Nerve supply**: they are supplied by the mandibular nerve.
- **Development,** they developed from the 1st pharyngeal arch.

Muscles of Mastication

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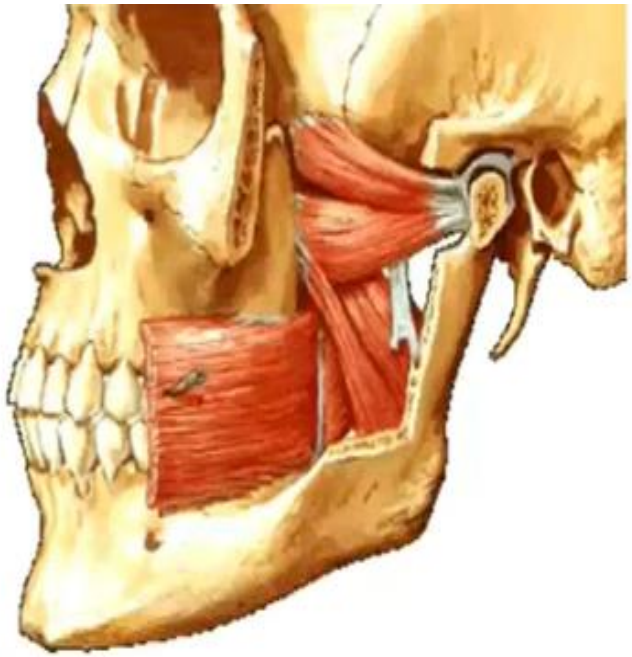
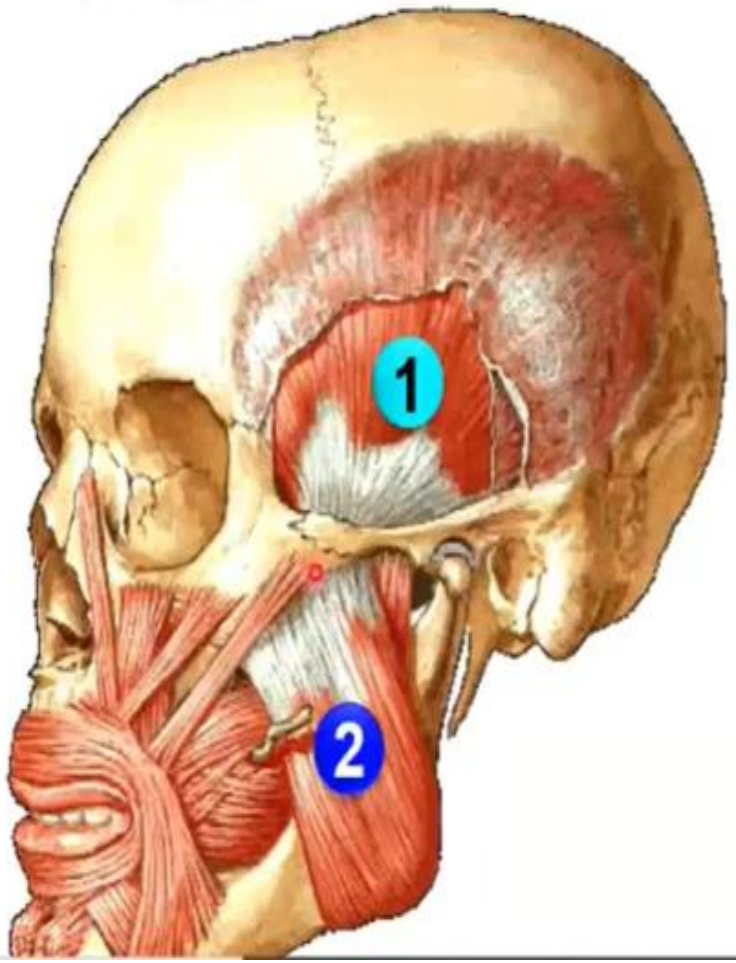
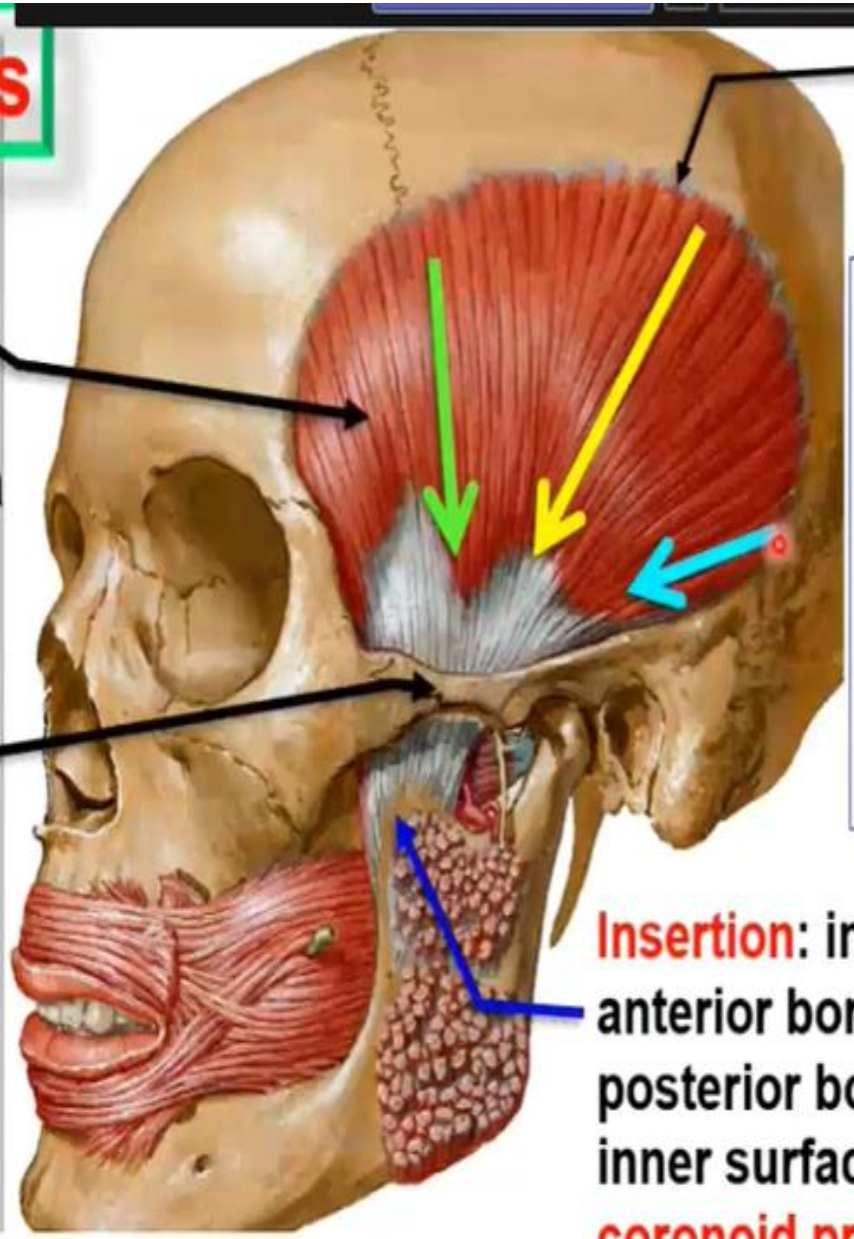




1. Temporalis
2. Masseter
3. Lateral Pterygoid
4. Medial pterygoid

Temporalis



Origin From Temporal fossa and Deep surface of temporal fascia

Origin From Inferior temporal line

- **Direction of fibres;**

- **Anterior** fibers are vertical downward.

- **Posterior** fibers are downward and forward.

- The **most posterior** horizontally forward.

Zygomatic arch.

Insertion: into the tip, anterior border and posterior border and inner surface of the coronoid process.

Fan shaped muscle

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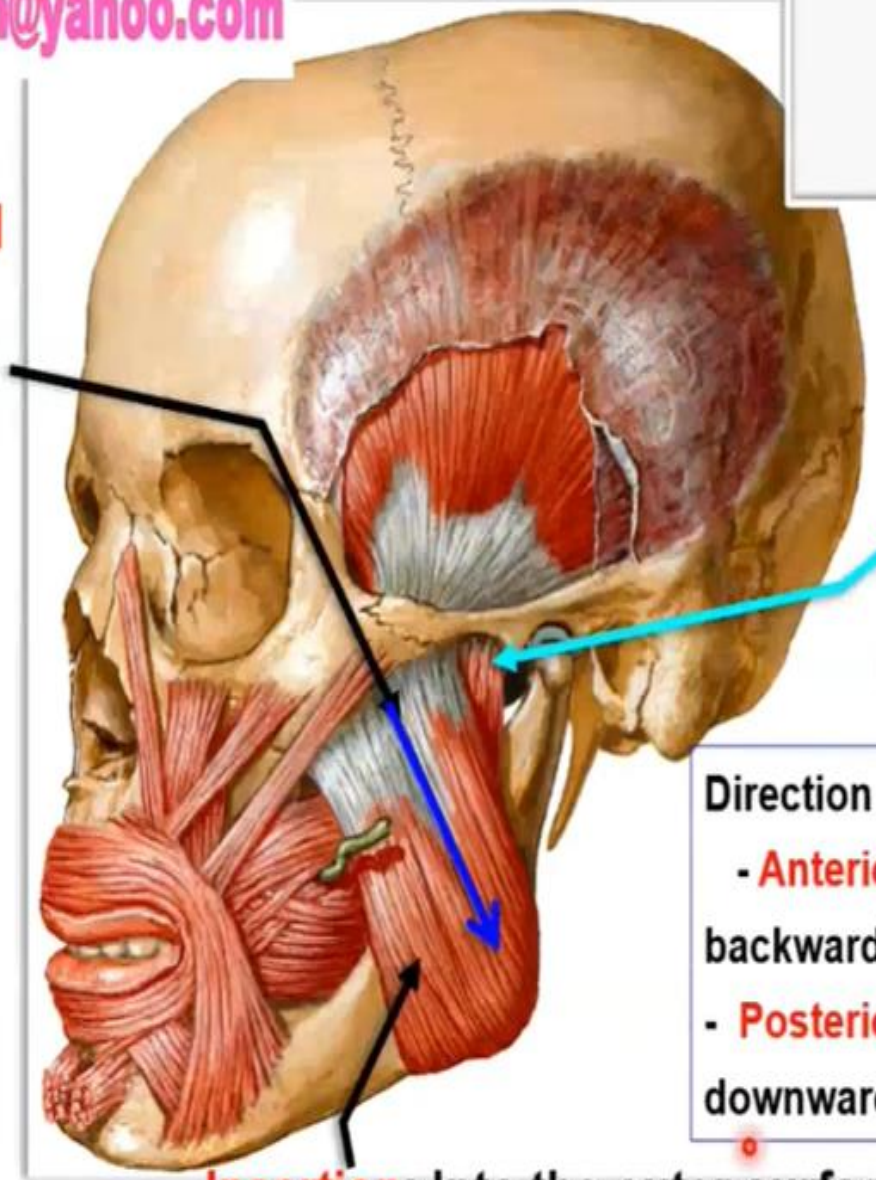
Masseter muscle

Origin: Superficial fibers from lower border zygomatic arch



Origin: Deep fibers from deep surface of zygomatic arch

Direction of the fibres:

- **Anterior** directed downwards and backwards.
- **Posterior** directed vertically downwards.

Insertion: Into the outer surface

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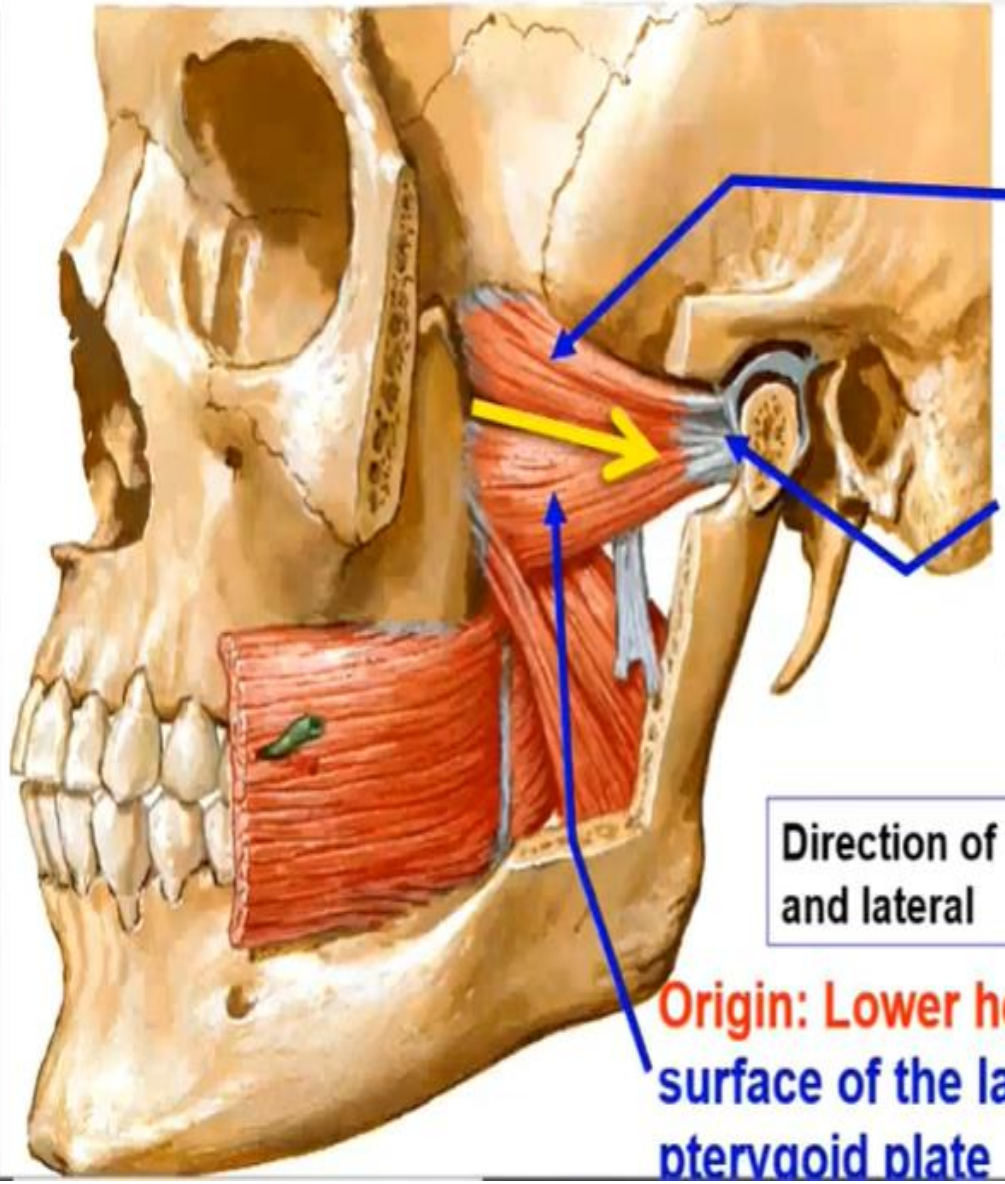
Lateral Pterygoid muscle



Origin: Upper head from infratemporal surface of greater wing of sphenoid

- Insertion: Pterygoid fovea on anterior aspect of neck of mandible.
- Capsule and articular disc of temporomandibular joint.

Direction of the fibres: horizontally backward and lateral

Origin: Lower head lateral surface of the lateral pterygoid plate

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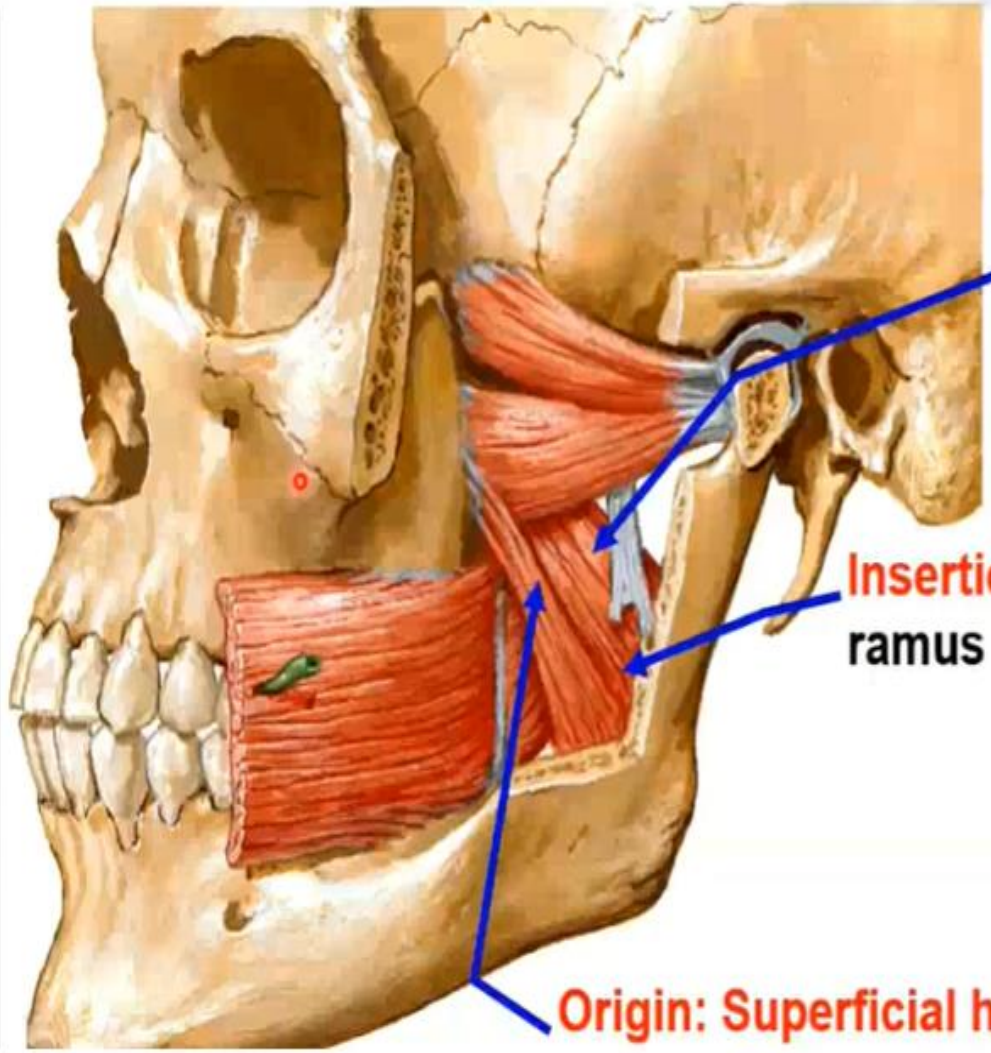
Medial Pterygoid muscle



Origin: Deep head from medial surface of lateral pterygoid plate

Insertion: Into the inner surface of the ramus and angle of the mandible

Origin: Superficial head from maxillary tuberosity

• Actions of the muscles of mastication

	Elevation (closing) Chewing	Depression (opening)	Protrusion	Retraction	Side to side movement
1- Masseter	+ve main		+ve		
2- Temporalis	+ve		+ve	+ve (posterior fibres)	
3- M. pterygoid	+ve		+ve		+ve
4- L. pterygoid		+ve	+ve		+ve

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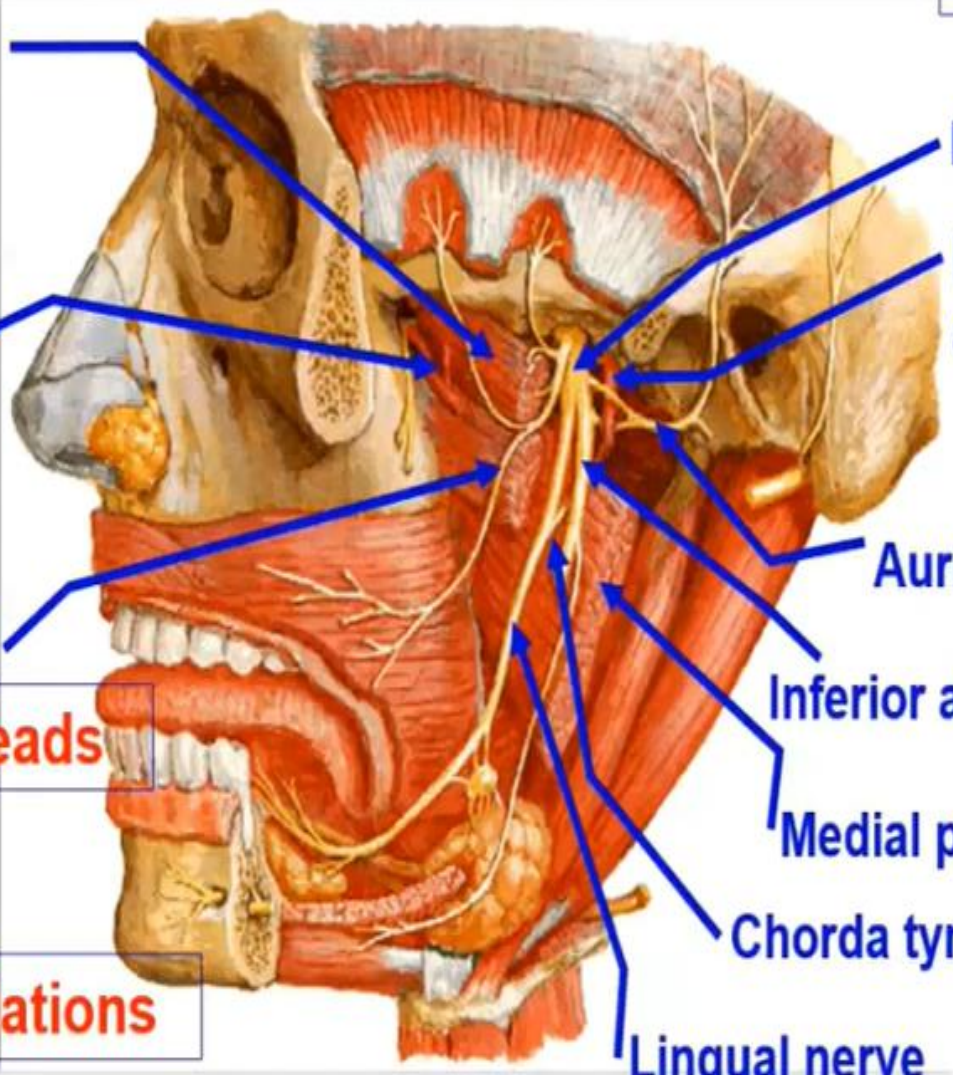
Deep Relations



Lateral pterygoid

3rd part of Maxillary artery

Buccal nerve

Between 2 heads

Mandibular nerve

Middle meningeal artery

Otic ganglion

Auriculotemporal nerve

Inferior alveolar nerve

Medial pterygoid muscle

Chorda tympani

Lingual nerve

Inferior Relations

1st part of maxillary artery

2nd part of maxillary artery

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Temporomandibular joint

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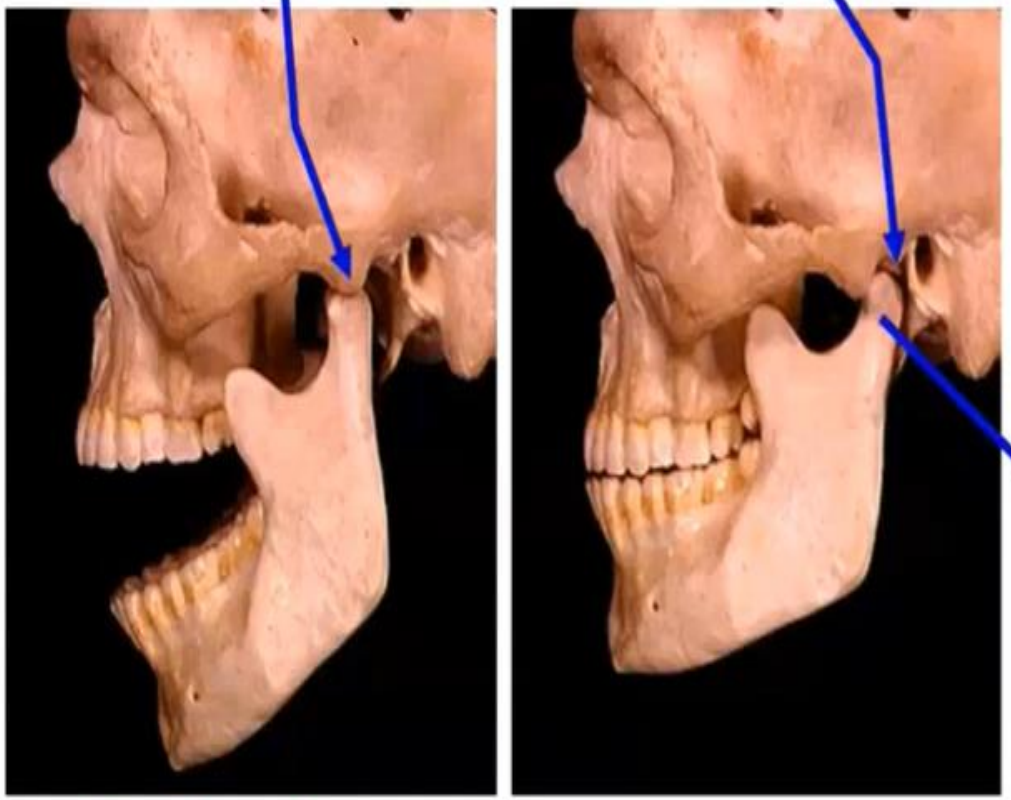
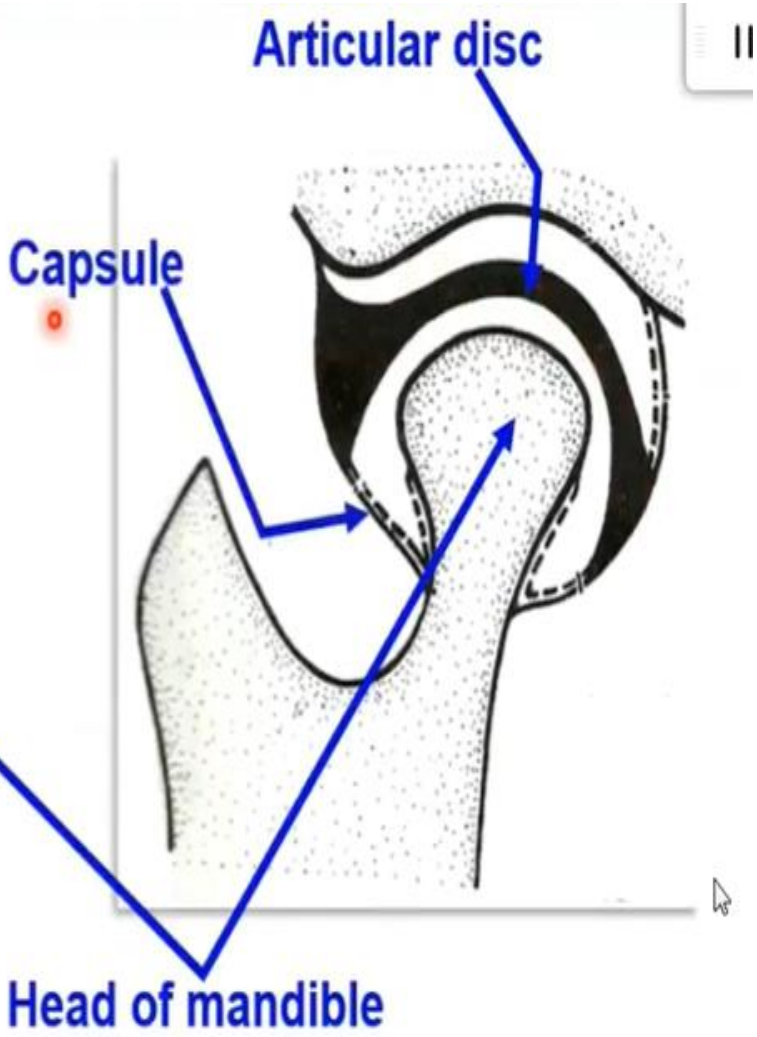
Type: synovial joint of ellipsoid variety





- **Articular surfaces:** a) Head (condyle) of the mandible.

b) Articular (glenoid) fossa and articular tubercle of temporal bone.

c) Articular disc divided the cavity into upper and lower parts.

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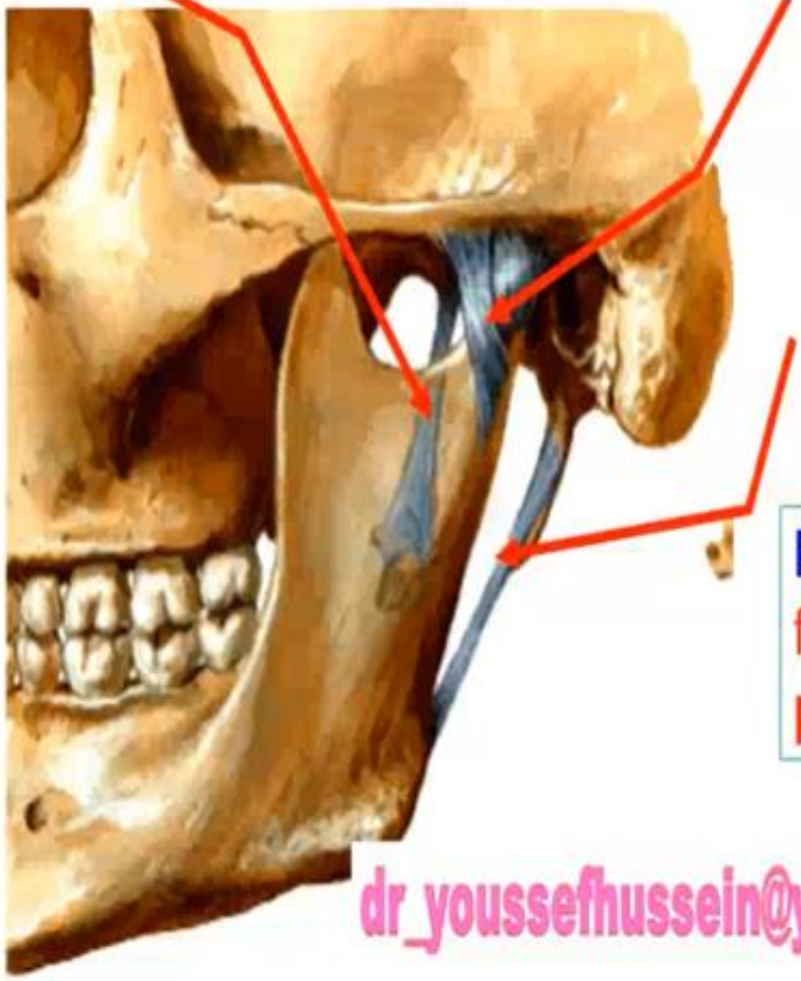
Sphenomandibular ligament from spine of sphenoid to lingula

Tempromandibular ligament from articular eminence to lateral side of neck



Stylomandibular ligament from styloid process to angle

Pterygomandibular ligament; from pterygoid Hamulus to posterior end of mylohyoid line

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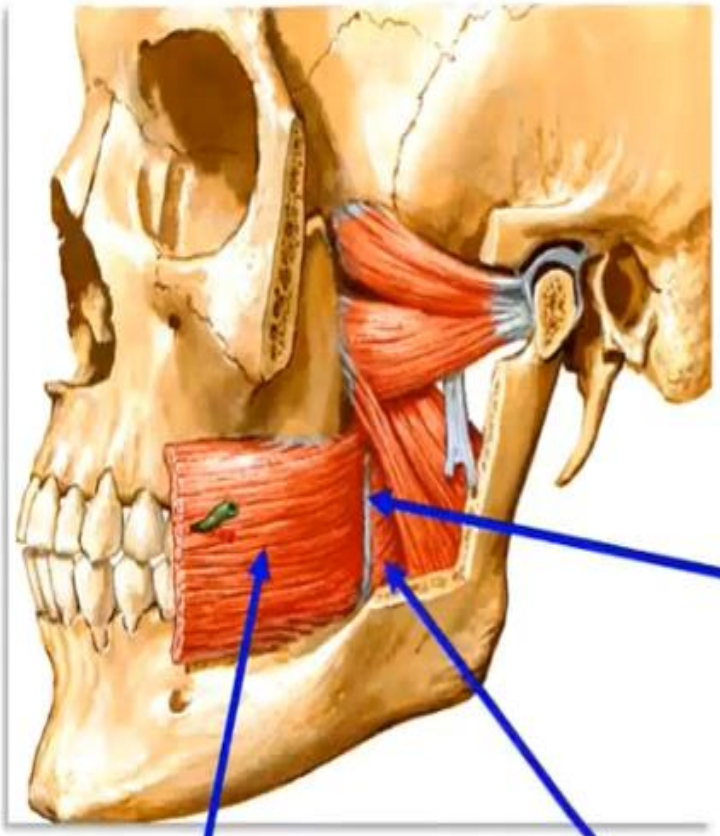
Ligaments related to mandible



Pterygomandibular ligament: extends from **pterygoid hamulus** to the **posterior end of mylohyoid line** of mandible.

- **It gives origin** to buccinator and superior constrictor muscle of the pharynx.

Buccinator

Superior constrictor muscle of pharynx

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Ligaments of temporomandibular joint

• Actions of the muscles of mastication

	Elevation (closing) Chewing	Depression (opening)	Protrusion	Retraction	Side to side movement
1- Masseter	+ve main		+ve		
2- Temporalis	+ve		+ve	+ve (posterior fibres)	
3- M. pterygoid	+ve		+ve		+ve
4- L. pterygoid		+ve	+ve		+ve

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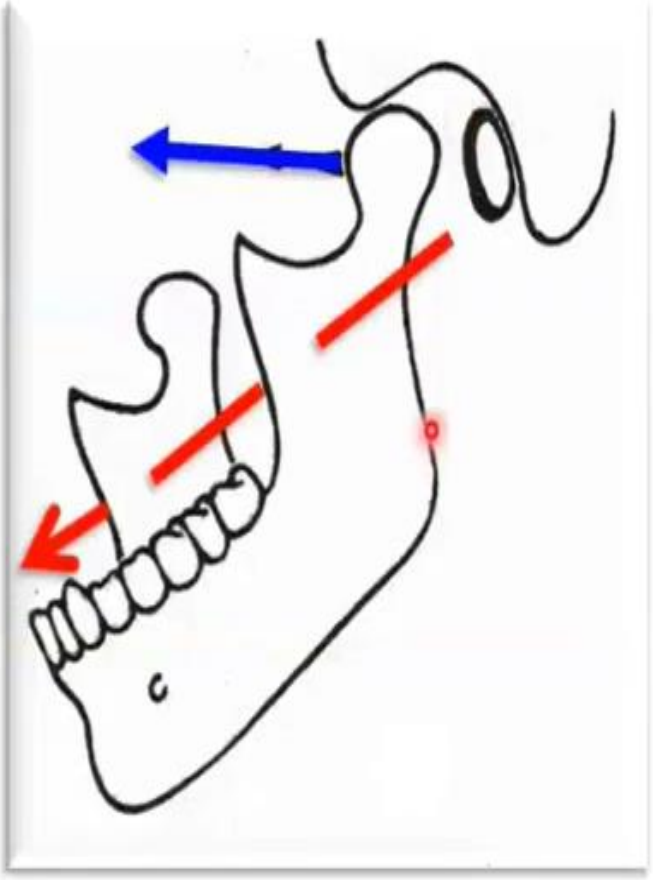
1- **Resting position**, the lower teeth are slightly behind the level of the upper teeth.

2- **Closing position**, jaws are closed, the upper and lower teeth come into apposition.

- **Nerve supply**: 1) auriculotemporal nerve. 2) Masseteric nerve.

- **Arterial supply**, from the superficial temporal and maxillary arteries.

- During opening of the mouth Forward sliding movement of the head of mandible with articular disc Over of the articular tubercle
- The axis of movement passes through the Mandibular foramen
- Movement occurs in the upper compartment of joint



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• TMJ dislocation

- Causes, spontaneous or traumatic.
- It occurs when one or both mandibular condyles are displaced in front and above articular eminence outside the articular surfaces.
- Dislocation may be reducible if the condyle (head of mandible) returns spontaneously to the mandibular (glenoid) cavity (subluxation) or irreducible when one or two condyles remain dislocated (luxation).
- In the latter condition, the mouth remains open
- There are stretch of the ligaments and muscles causing intense local orofacial pain

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