

وسهلا



أهلا

الأستاذ الدكتور يوسف حسين

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

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دكتورة من جامعة كولونيا المانيا

Prof. Dr. Youssef Hussein Anatomy البوتوب

جروب الفيس د. يوسف حسين (استاذ التشريح)

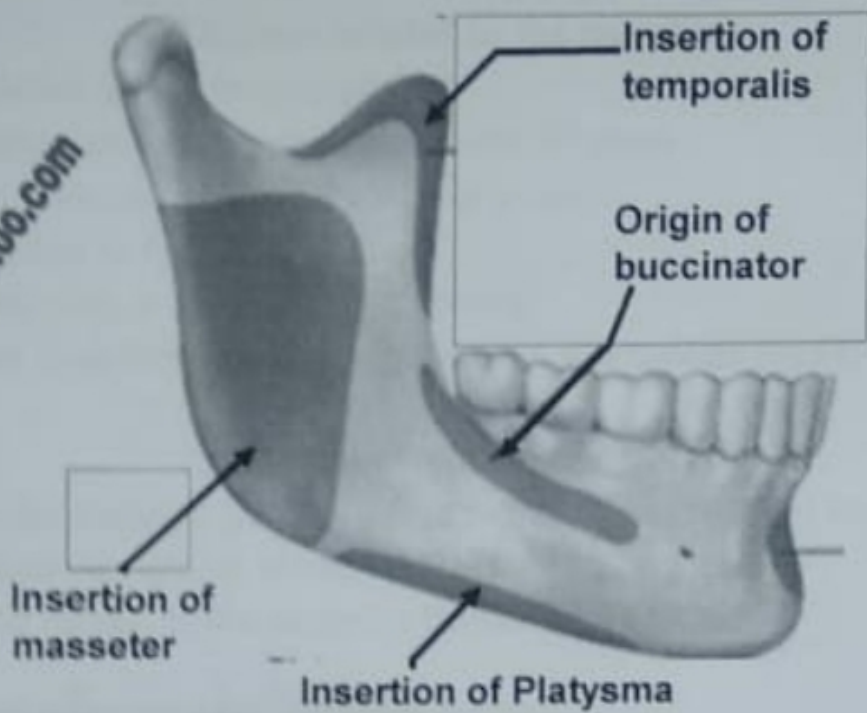
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Mandible

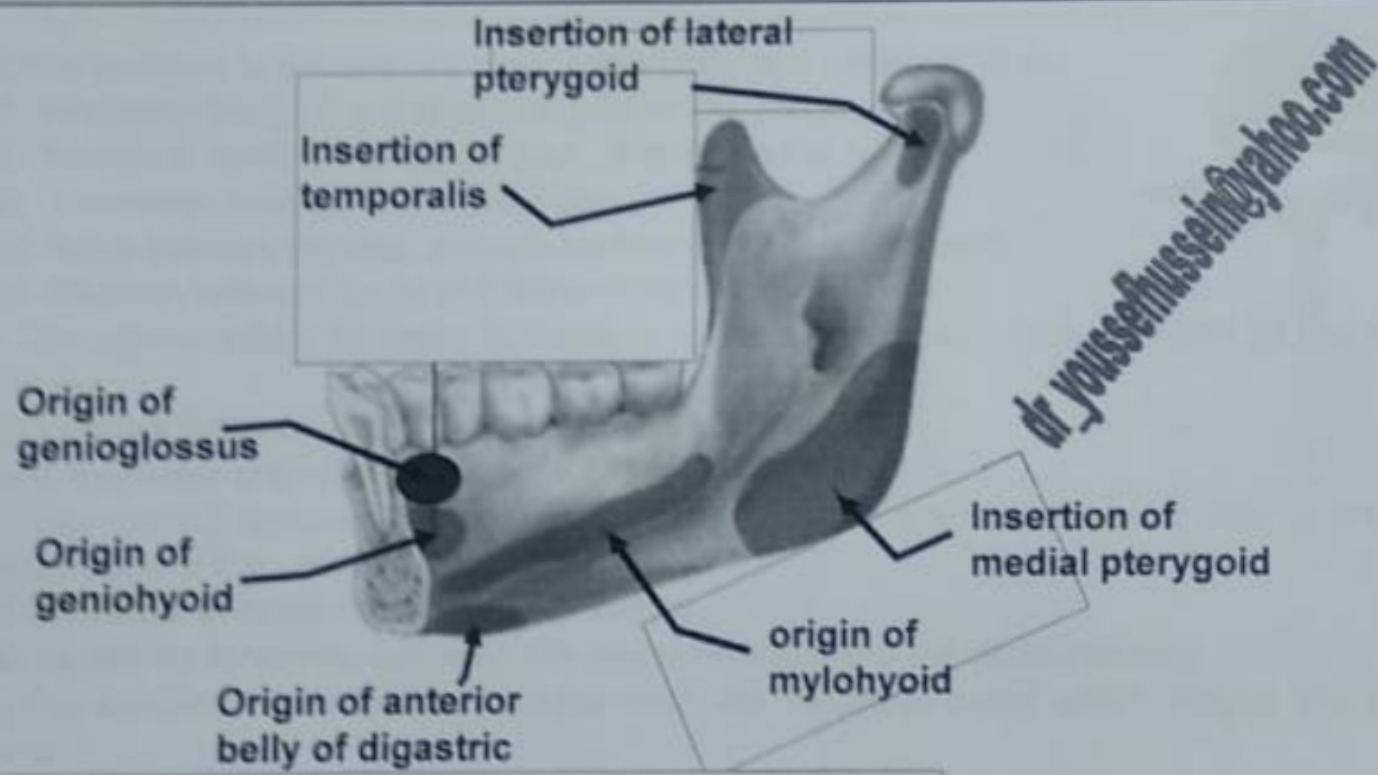
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Muscles attached to mandible (outer)

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Muscles attached to mandible (inner)

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**** Nerves related to the mandible**

A- 2 Nerves related to the foramina;

1. Inferior alveolar nerve enters the mandibular foramen.
2. Mental nerve emerges from the mental foramen.

B- 2 Nerves related to the grooves,

- 1- Nerve to mylohyoid, in the mylohyoid groove.
- 2- Lingual nerve runs forwards along groove on the medial aspect of the last molar tooth.

**** Glands related to mandible,**

1. **Submandibular salivary gland**, related to the submandibular fossa.
2. **Sublingual salivary gland**, related to the sublingual fossa.
3. **Parotid gland** related to the posterior border of the ramus.

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Each vertebra is formed of 2 main parts body and vertebral arch.

1- Vertebral body: It is the ventral part of the vertebra.

2- Vertebral arch: - It is dorsal part., It is formed of :-

- a) **Transverse process:** lateral projection
- b) **Spine (spinous process),** projects backward from vertebral arch.
- c) **Pedicle** between body and transverse process.

- The intervertebral foramen lie between successive pedicles, which give exit to the spinal nerves.

d) Lamina between spine and transverse process

e) 2 Superior articular processes (Facets),

- They carry 2 articular facets for articulation with the articular facets of inferior articular processes of the vertebra above.

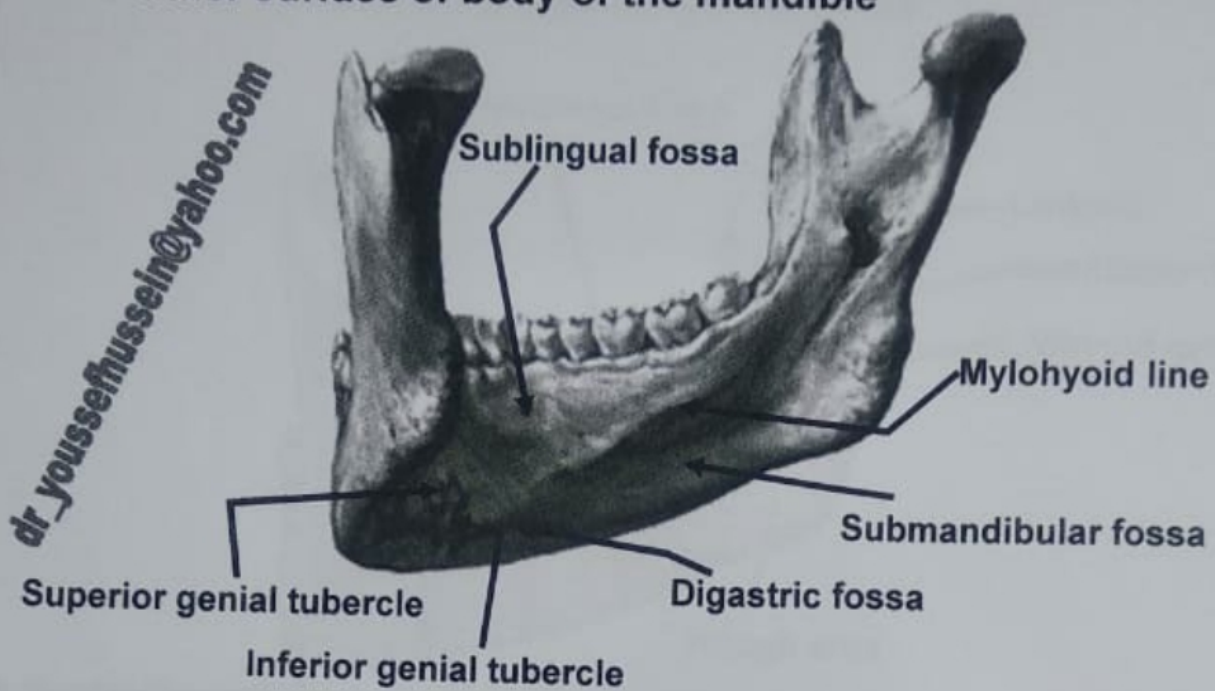
f) 2 inferior articular processes (Facets),,

3- Vertebral foramen, between the vertebral body and the vertebral arch.

- The successive vertebral foramina form the vertebral canal which lodges the spinal cord.

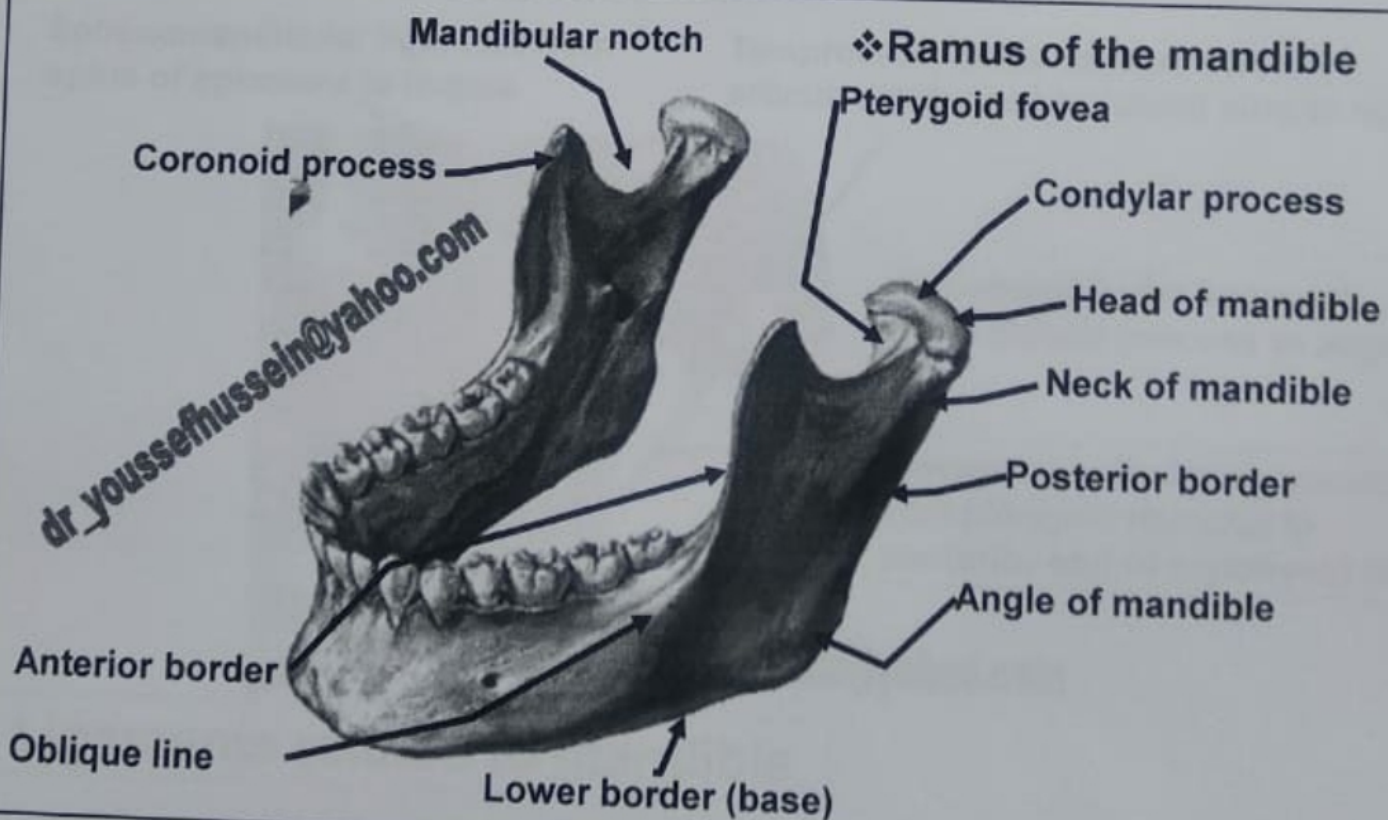


❖ Inner surface of body of the mandible



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❖ Ramus of the mandible



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Cervical Vertebrae



- There are **7 cervical vertebrae**. All are characterized by the presence of **foramen transversarium** in the transverse process.

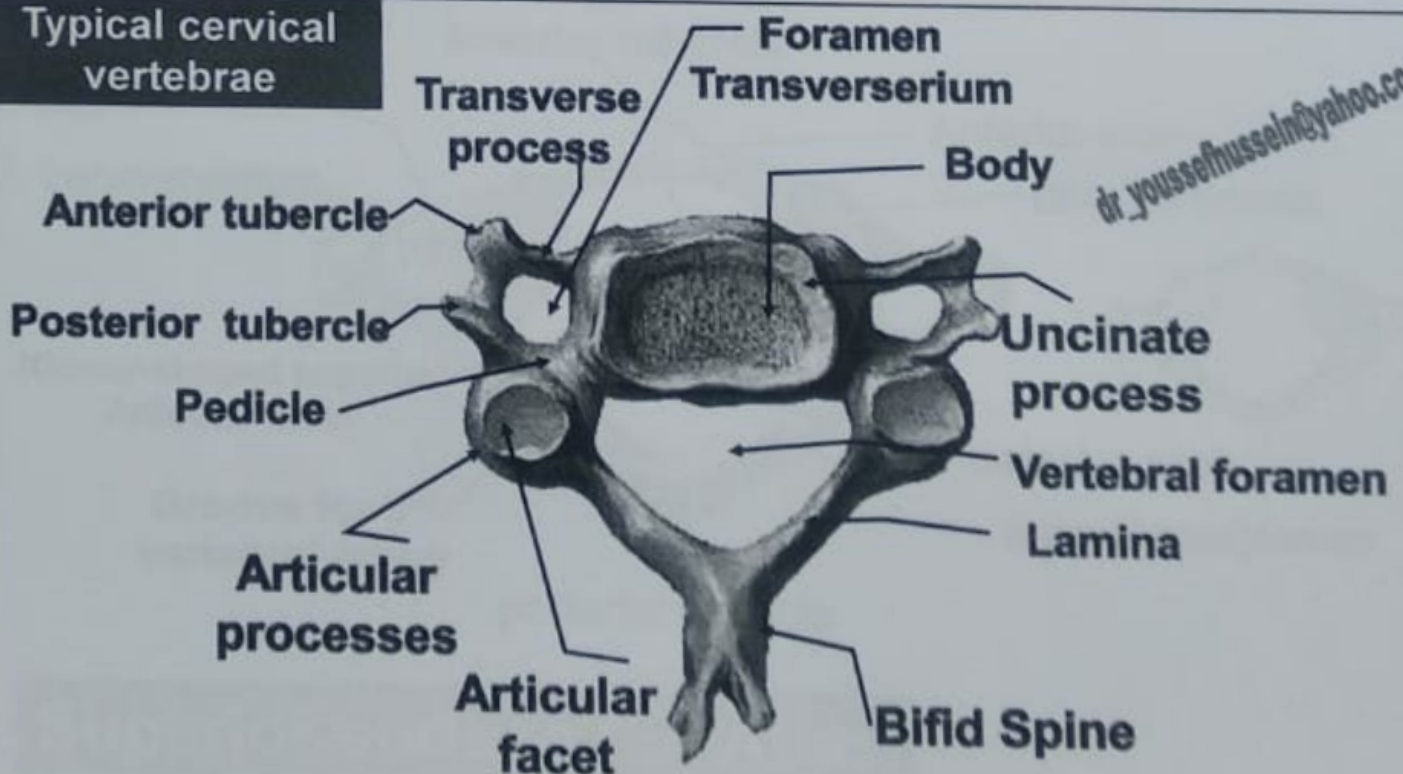
- They are classified into

a- Typical vertebrae, these are 3, 4, 5, 6.

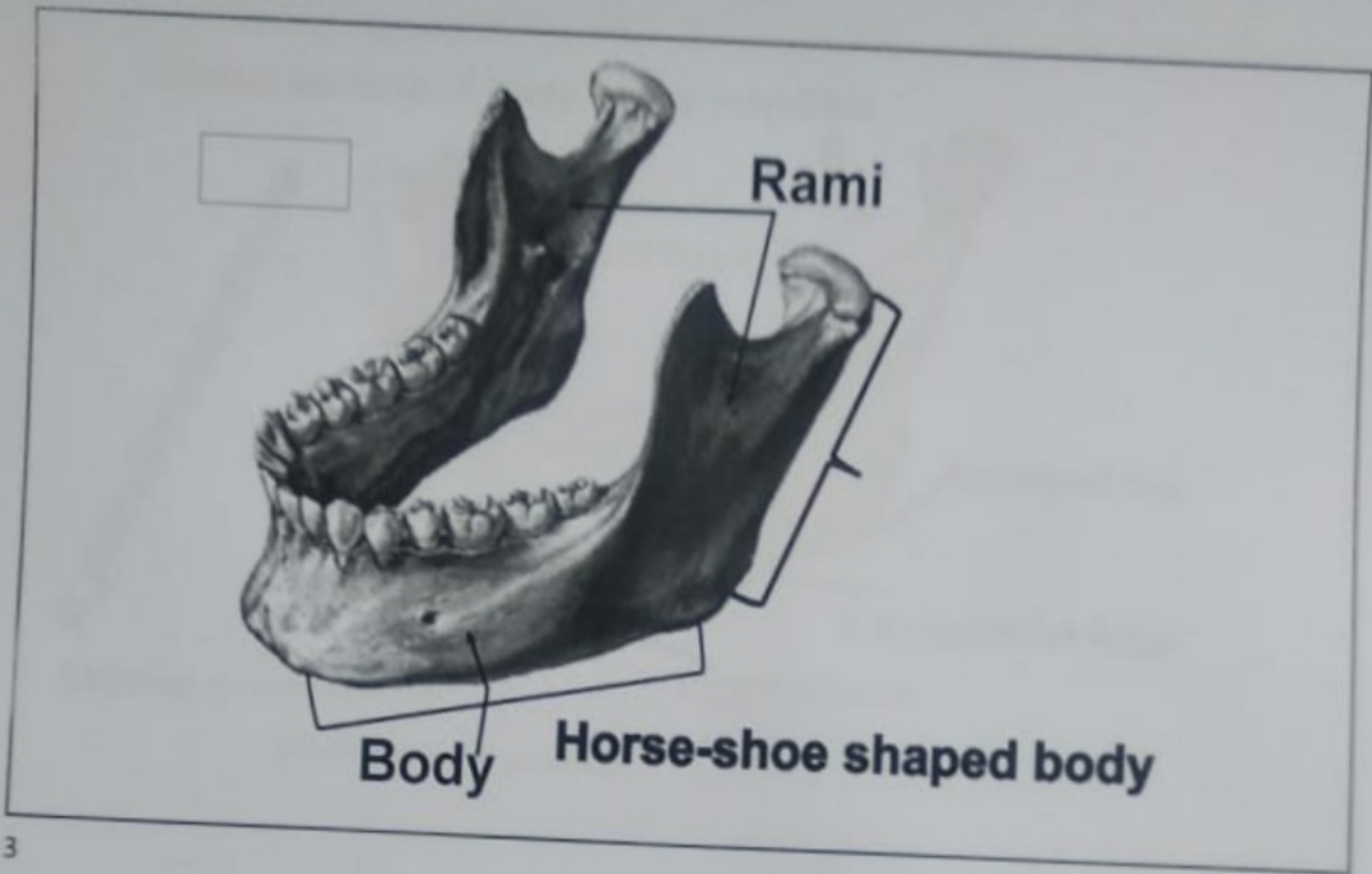
b- Non-typical vertebrae, these are 1 (atlas), 2 (axis) and 7.

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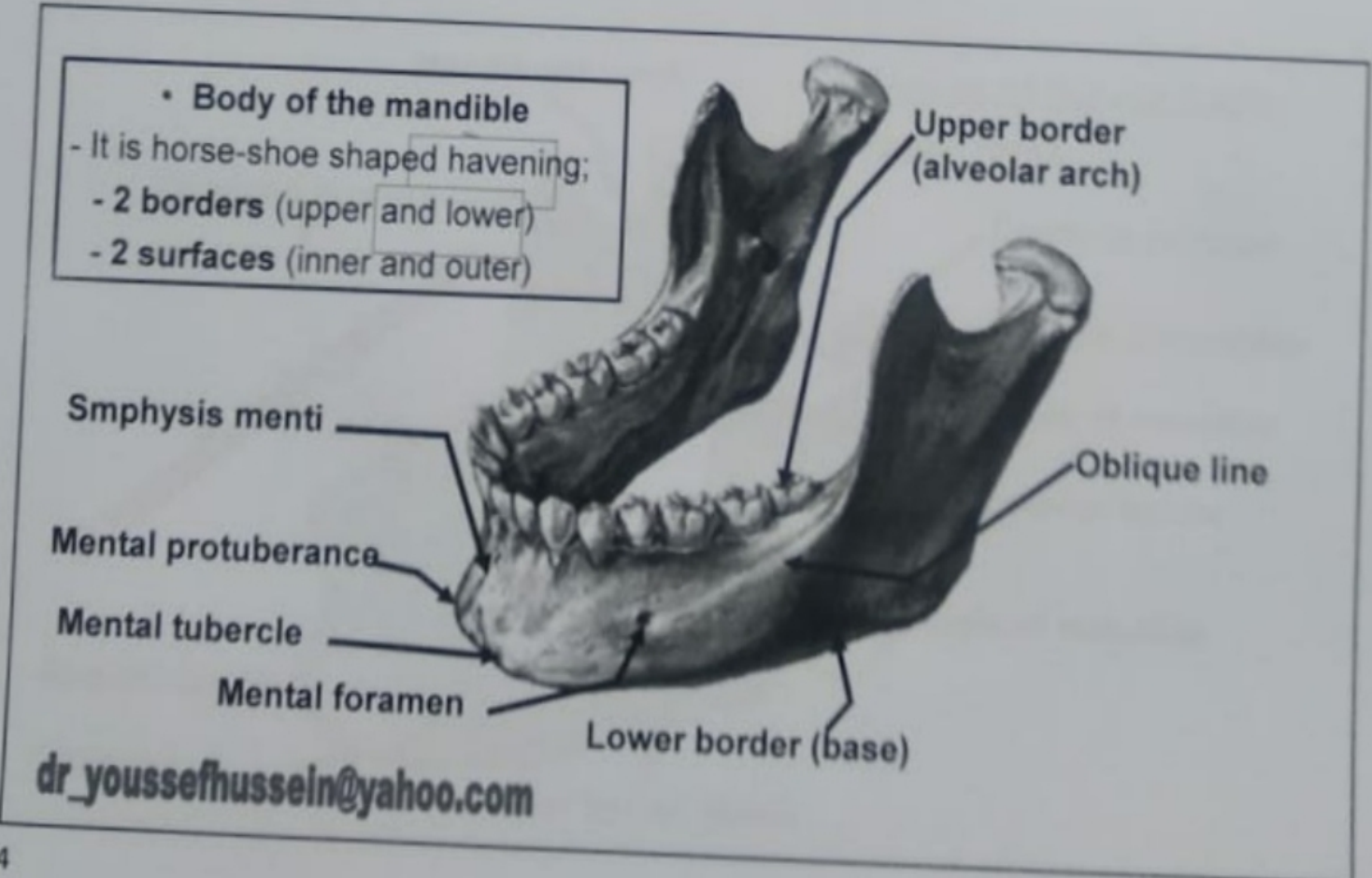
Typical cervical vertebrae



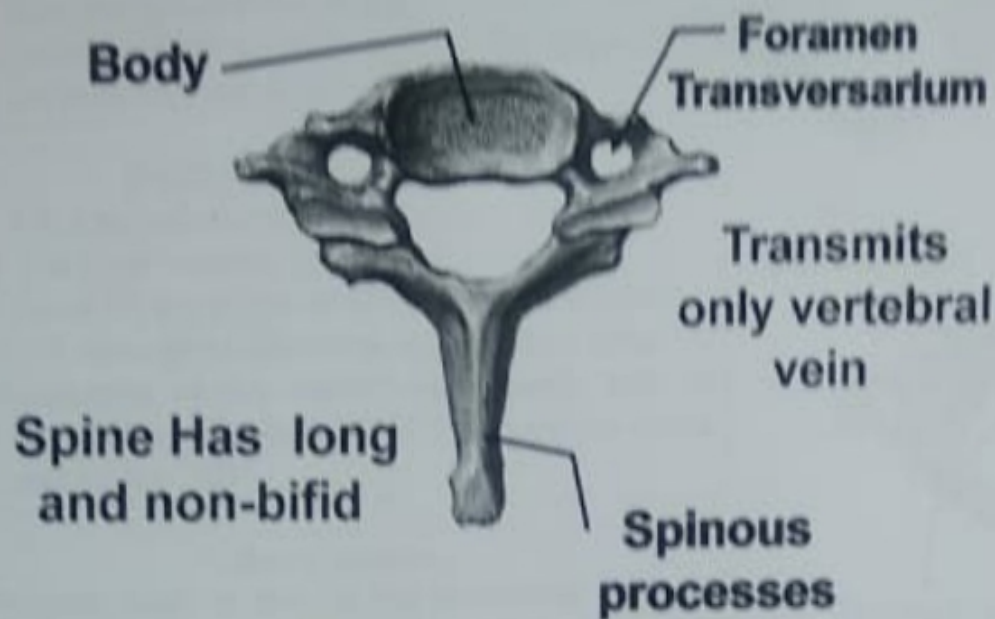
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C 7 Vertebra

Kidney-shaped superior Articular facet



• ATLANTO-OCCIPITAL JOINTS

- **Type and variety**; it is a synovial joint of condylar variety

- **Articular surfaces**:

a) **Above**: the occipital condyles of the skull.

b) **Below**: the superior articular kidney-shaped facets of the atlas C1.

• **Movements occurring in the atlanto – occipital Joints**:

1) Flexion and extension (**nodding**), We move the head to say "YES"

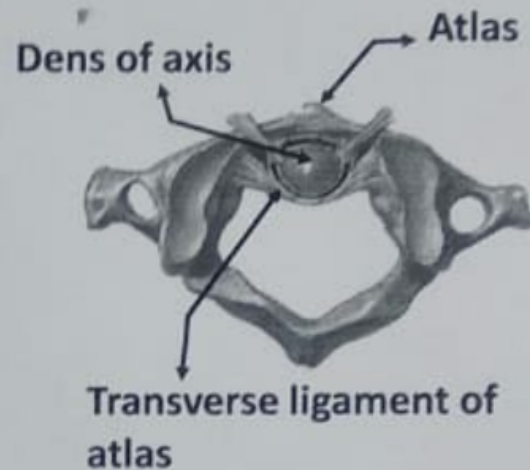
2) Slight lateral flexion.

ATLANTO – AXIAL JOINTS

- **2 lateral atlanto-axial joints :**
 - Between inferior articular facet of the atlas C1 and superior articular facet of the axis C2.



- **Median atlanto – axial joint:**
 - It is a synovial joint of pivot variety between:
 - a) Odontoid process (dens) of the axis.
 - b) Facet on the posterior surface of the anterior arch of atlas and **transverse ligament of atlas**.
 - **Movements of the atlanto-axial joints** side to side or **rotatory movements** of the head. we move the head to say "NO"

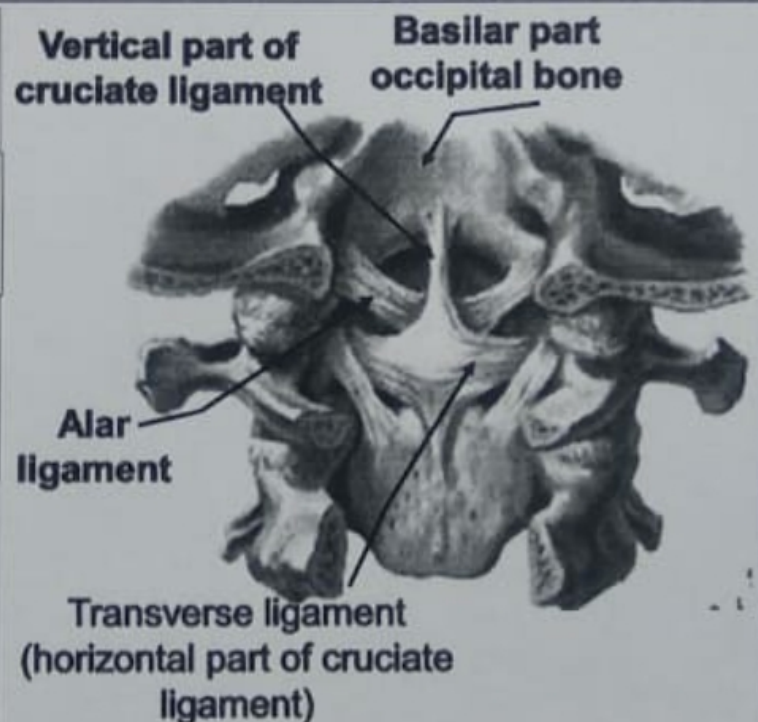


* Clinical anatomy;

- **Hanging** leads to **tear of the transverse ligament** and Closure of carotid arteries **causing** cerebral hypoxia.
- The dens of the axis is thrust backwards leading to damage of the spinal cord.

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- **Membrana tectoria:** upward continuation of the **posterior longitudinal ligament** to the basilar part of occipital bone.
- **Alar ligaments:** extending from the sides of the **odontoid process** to the medial side of the **occipital condyles**.
- **Apical ligament:** extending from the **tip of the odontoid process** to the **anterior margin of the foramen magnum** (upper end of the notochord).
- **Cruciate ligament:**
 - **Transverse ligament** between two tubercles on the atlas.
 - **Vertical ligament, upper band,** from transverse **ligament** to the basilar part of occipital bone, **lower band** from transverse **ligament** to the body of the **axis**



Ligament attached to axis

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❖ Inner surface of Ramus of the mandible

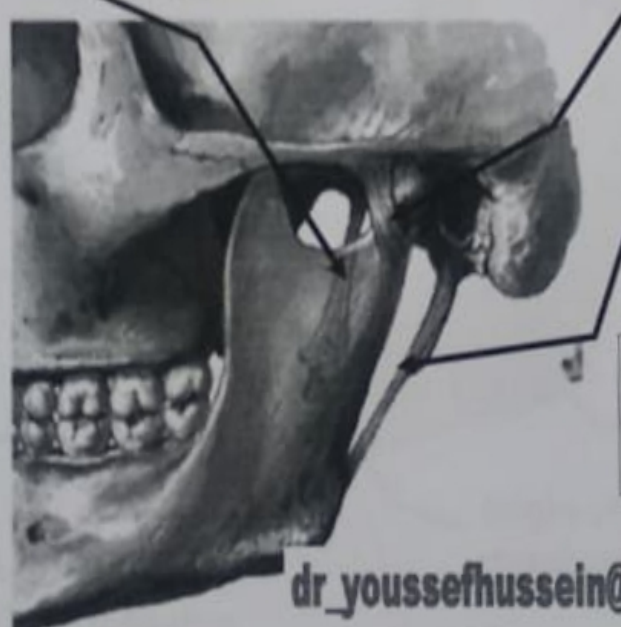


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Sphenomandibular ligament from spine of sphenoid to lingula

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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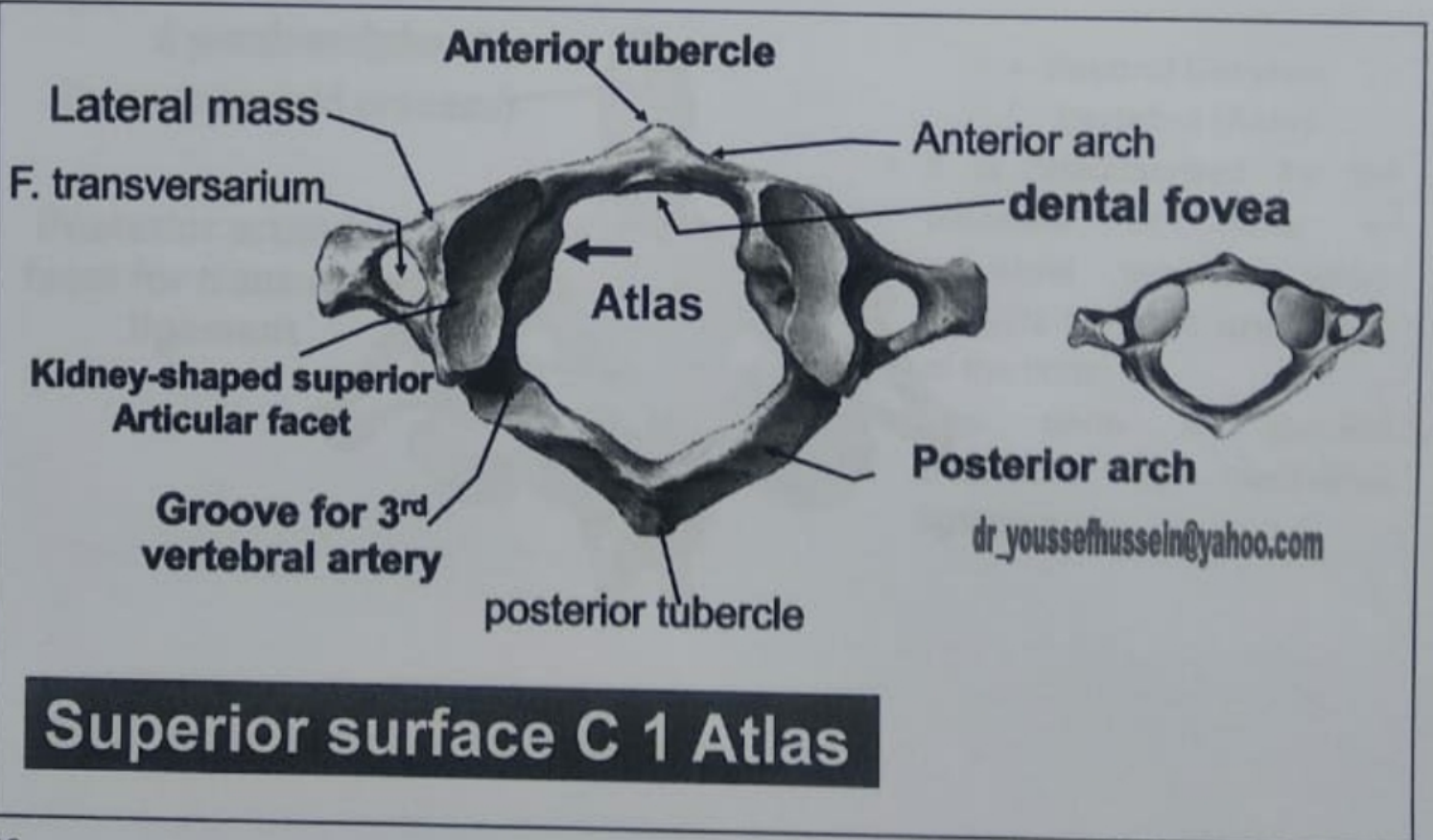
Ligaments related to mandible

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• **Typical Cervical Vertebra**

- 1- **Small broad body**, The upper surface of the body is **concave** from side to side with bilateral lips (**uncinate process**)
- 2- Presence of a **foramen transversarium** in the **transverse process**.
- 3- Anterior and posterior tubercles of transverse processes (**Anterior tubercle of C6 vertebra** is particularly large and called **carotid tubercle** as the common carotid artery can be effectively compressed against the groove between it and the body)
- 4- The **spine** is short and **bifid**.
- 5- Long and narrow **laminae**.
- 6- Wide triangular **vertebral foramen** to accommodate the cervical enlargement of the spinal cord
- 7- **The foramina transversaria from the 6th up to the 1st transmit the**
 - 1) Second part of the vertebral artery.
 - 2) Sympathetic plexus around the artery.
 - 3) Vertebral vein.

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Superior surface C 1 Atlas

• First Cervical Vertebra (Atlas)

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- 1- **Absence of a body.** It is formed of 2 **lateral masses** connected together by **short anterior arch** and a **longer posterior arch**, all together constituting a bony ring.
- 2- Lateral mass carries a **kidney-shaped superior articular facet**, articulates with **occipital condyle** to form **atlanto-occipital joint** and a nearly **circular inferior articular facet**, articulates with **Body of axis** to form the **lateral atlanto-axial joint** on each side.
- 3- The sides of the lateral masses give rise to a pair of **transverse processes**. Each transverse process presents a **foremen transversarium**.
- 4- The medial side of each lateral mass presents a **tubercle** for attachment of the **transverse ligament of the atlas**.
- 5- The anterior arch carries an anterior tubercle. Posteriorly, the anterior arch carries an **articular Facet** articulates with the **facet** on the **Front of the dens of the axis** to form the **median atlanto-axial joint**.
- 6- Posterior arch presents a **groove on its upper surface** behind lateral mass on each side for the **3rd part of vertebral artery**. Its back shows a posterior tubercle in the middle

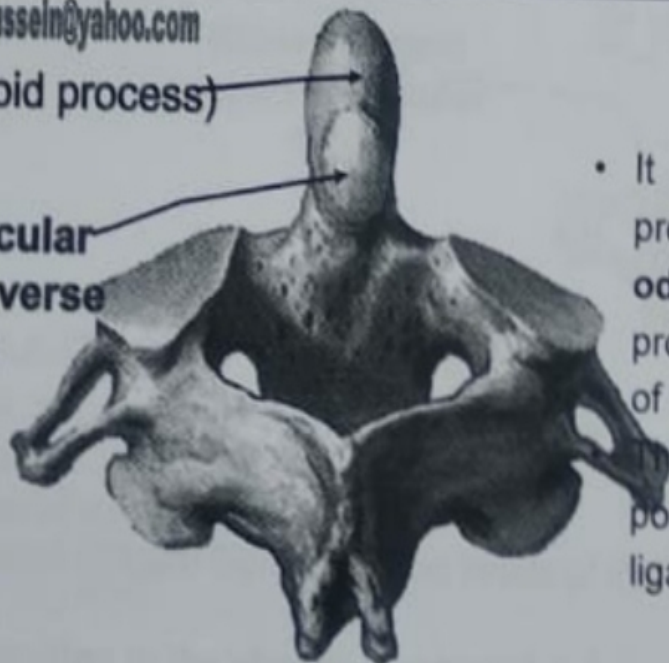
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• Second Cervical Vertebra (Axis)

- It is characterized by the presence of **dens or odontoid process** which projects from the **upper part of the body**.

Posterior articular facet for transverse ligament



The **dens** is grooved posteriorly by transverse ligament.

Superior surface C 2 -- Axis

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