

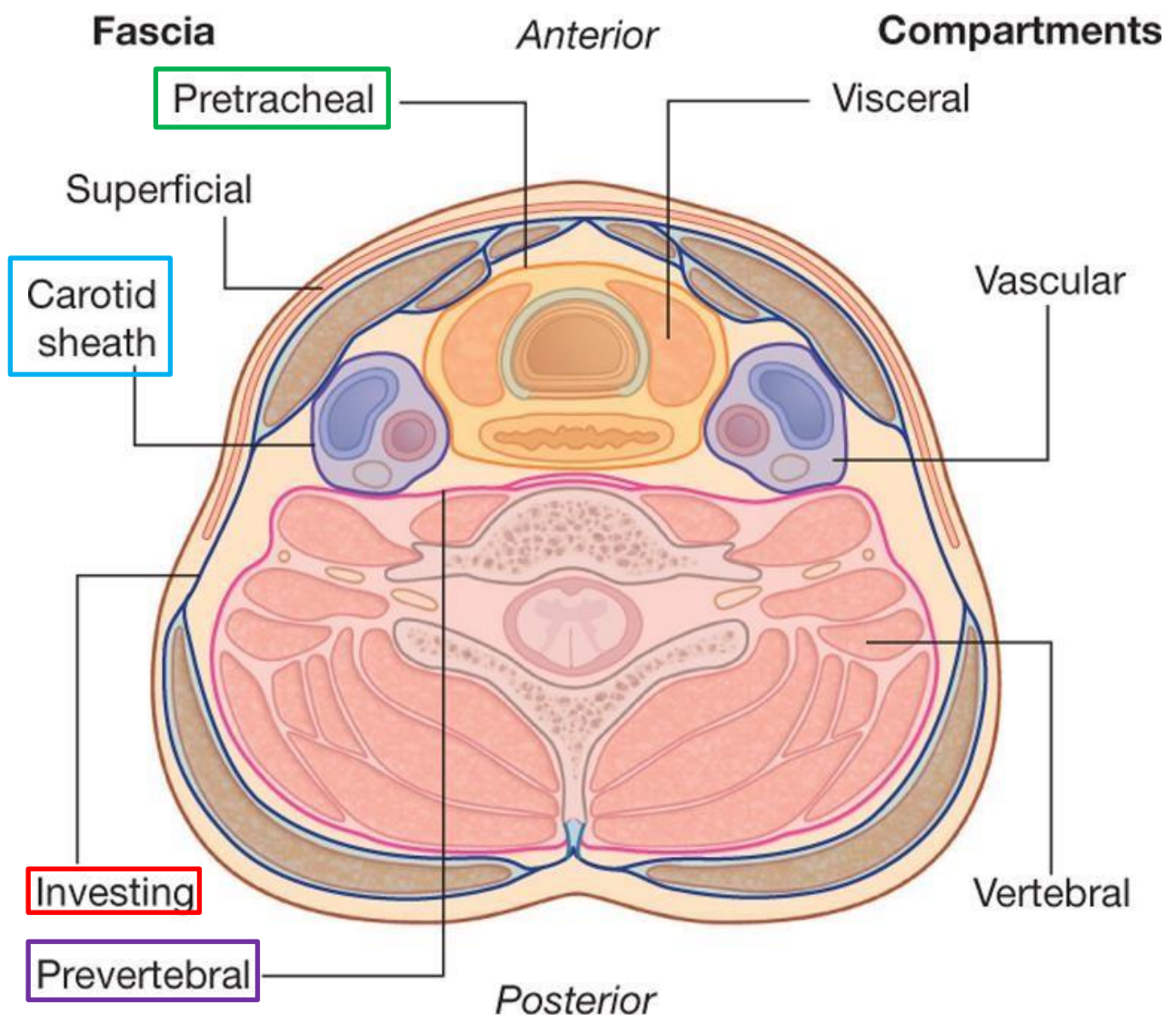
**Temporomandibular joint &
deep cervical fascia**

by

Wessam Hamed

Deep cervical fascia

1. Investing
2. pre-tracheal
3. prevertebral
4. carotid.

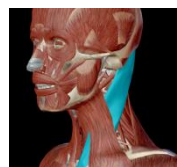
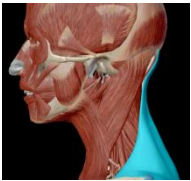


1- Investing fascia.

- It is the superficial layer of the deep cervical fascia.
- It encircles the neck completely.
- It surrounds all the structures of the neck.

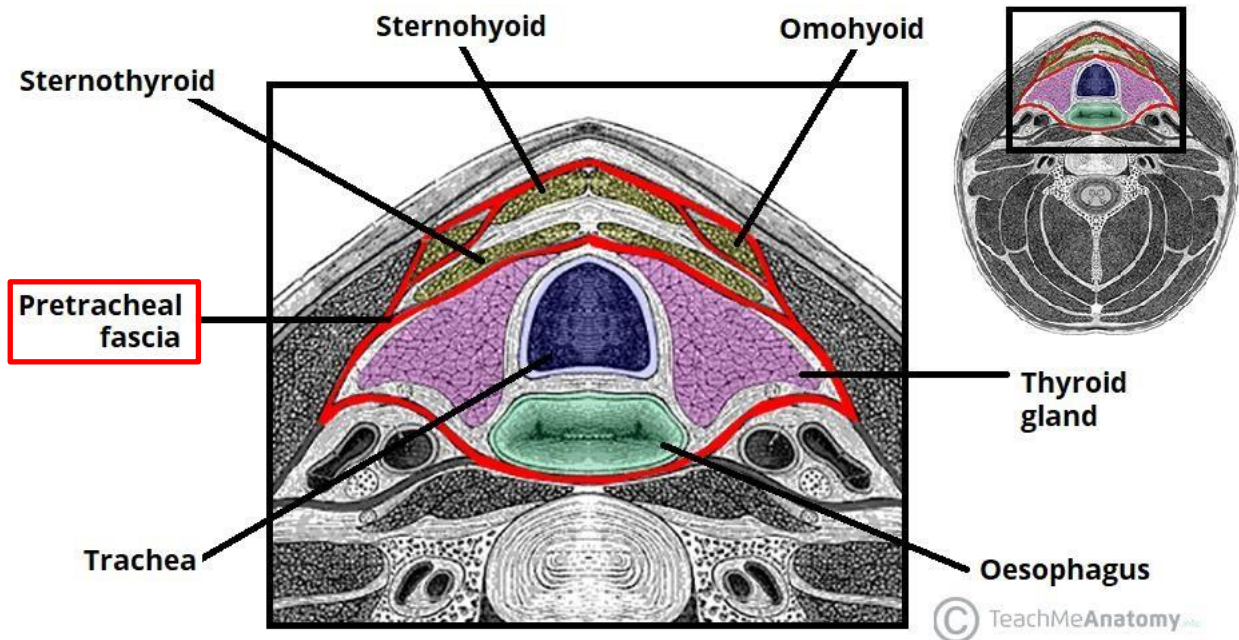
Compartments:

- It splits to enclose sternomastoid and the trapezius muscles.



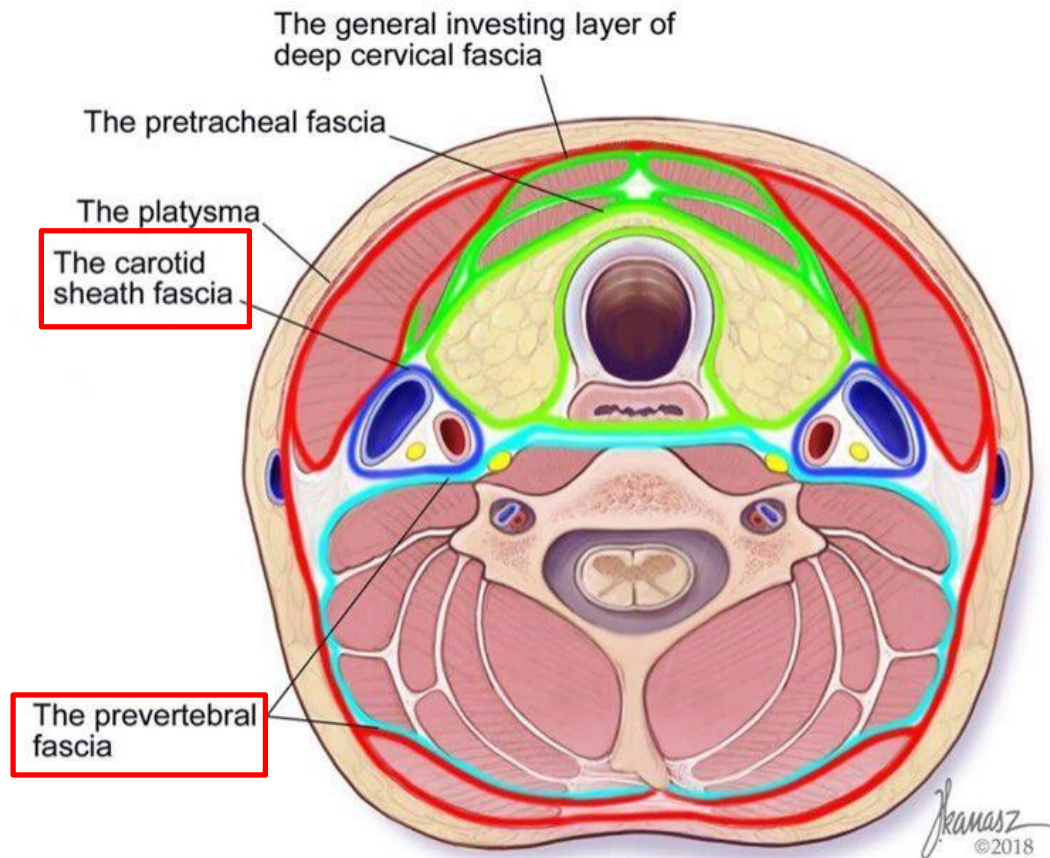
2 pre-tracheal fascia

- It is the middle layer of the deep cervical fascia.
- It lies in front of the trachea and encapsulates the thyroid gland.



3 pre-vertebral fascia

- It is the deepest layer of the deep cervical fascia.
- It lies between the pharynx, **anteriorly** and the vertebral bodies and the deep muscles attached to them, **posteriorly**.



4 Carotid sheath

- It is a tubular sheath of the deep cervical fascia.
- It surrounds the main vessels and nerves in the neck.

Attachment:

- **Laterally:** fuses with the investing fascia.

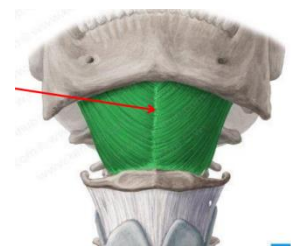
- **Medially:** fuses with the pre-tracheal fascia.
- **Posteriorly:** fuses with prevertebral fascia.
- **Superiorly:** base of the skull.
- **Inferiorly:** arch of aorta.

Relations:

- **ansa cervicalis:** in anterior wall
- **cervical sympathetic chain:** in posterior wall.

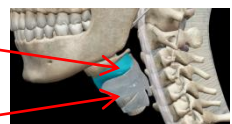
Median structures of the neck

1. Median longitudinal raphe of the mylohyoid muscle.



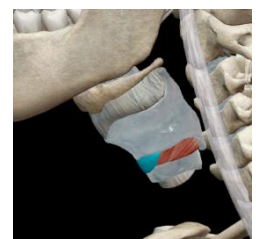
2. Hyoid bone & hyoid bursa.

3. Thyrohyoid ligament & membrane.



4. Thyroid cartilage.

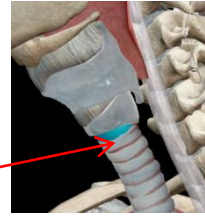
5. Cricothyroid ligament & muscle.



6. Cricoid cartilage.



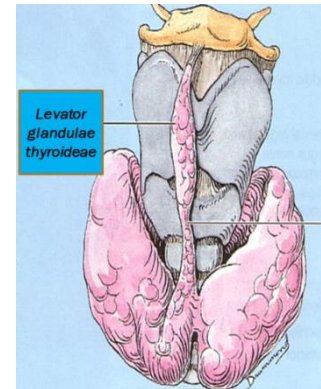
7. Cricotracheal membrane.



8. First tracheal ring.

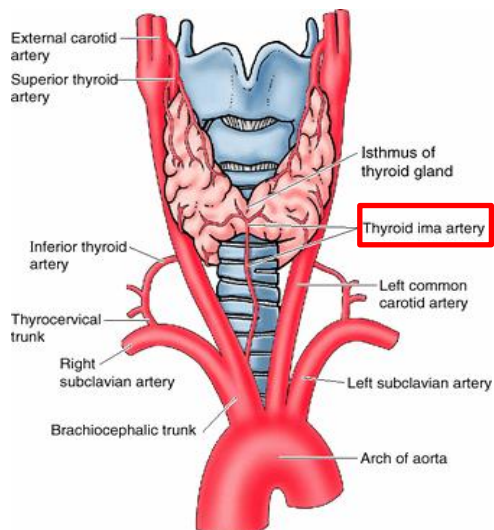
9. Isthmus of thyroid gland.

- Pyramidal lobe & levator Glandulae thyroideae

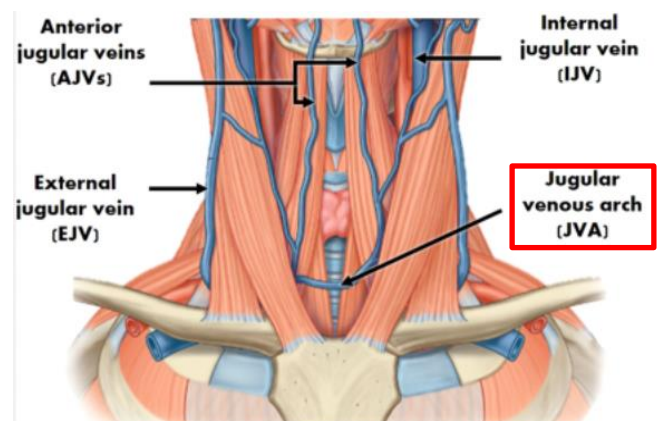


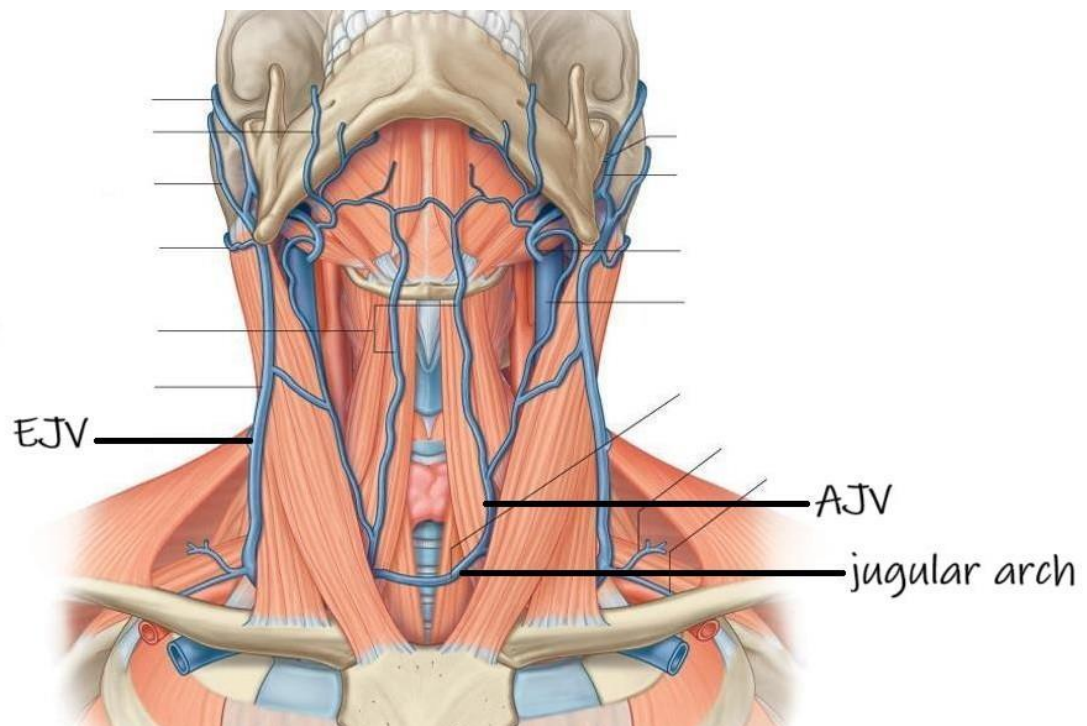
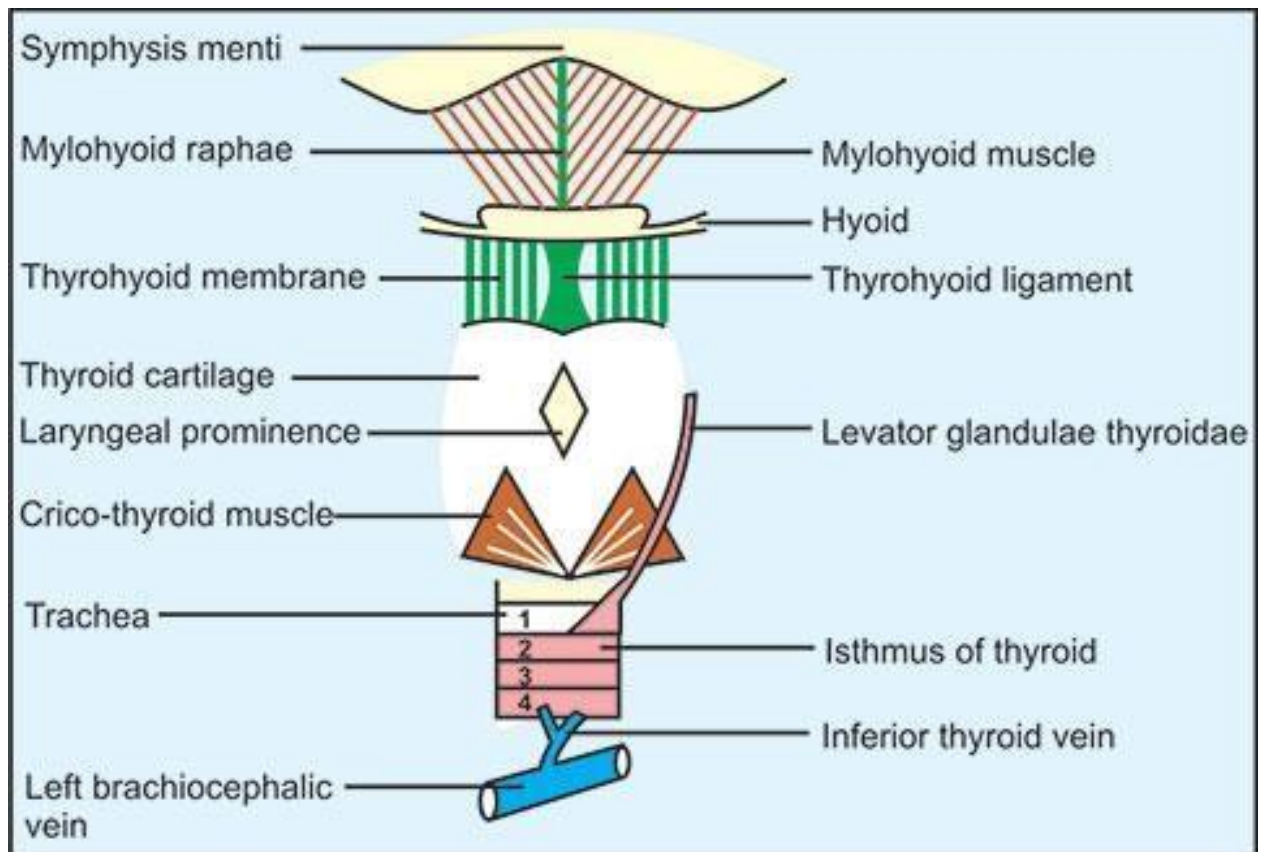
10. Suprasternal notch: contains

- Thyroid ima artery.
- Inferior thyroid vein.
- Jugular arch (between the 2 anterior jugular veins)
- left brachiocephalic vein (may present).



Inferior thyroid vein & left brachiocephalic vein





Boundaries of infra-temporal fossa

- **Roof** :

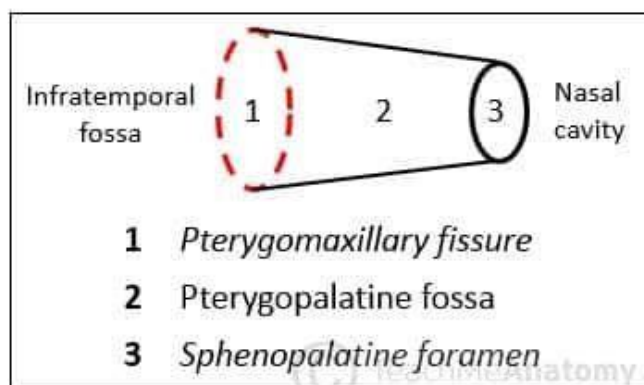
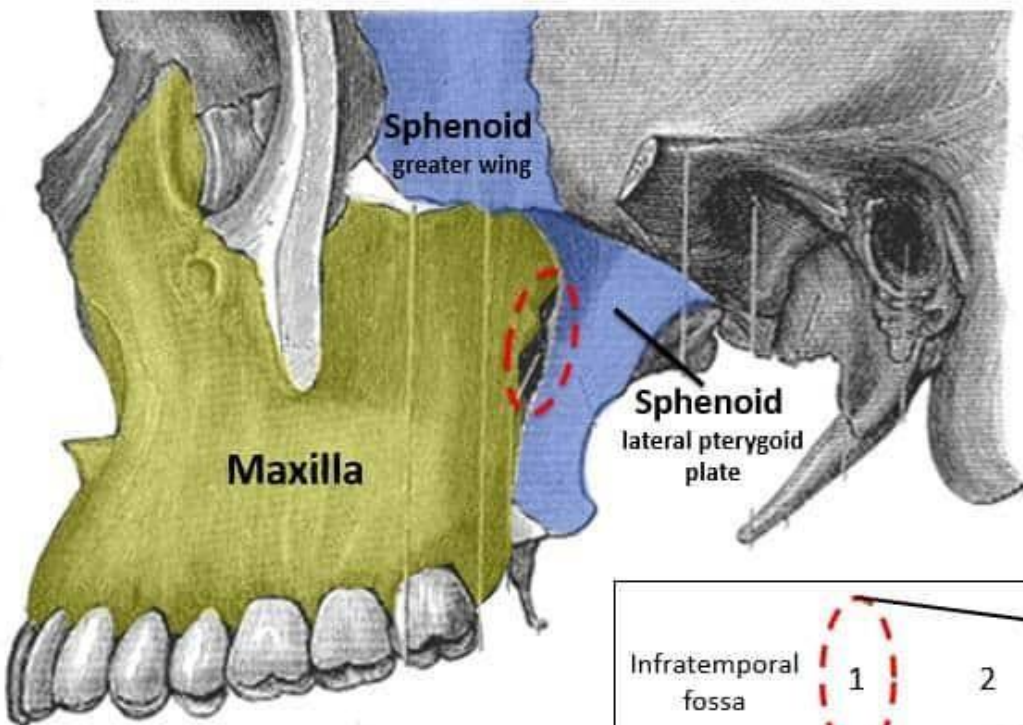
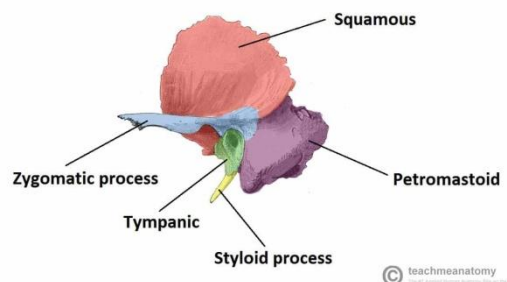
- infratemporal surface of the greater wing of the sphenoid
- squamous part of the temporal bone.

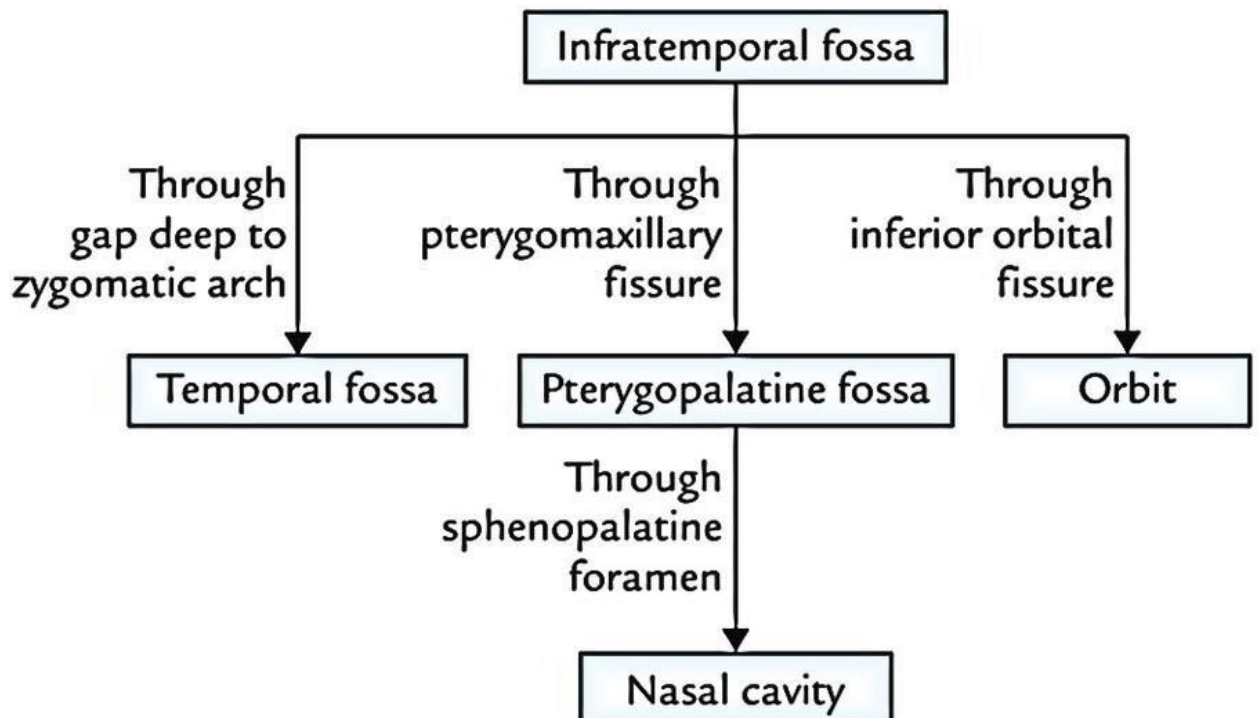
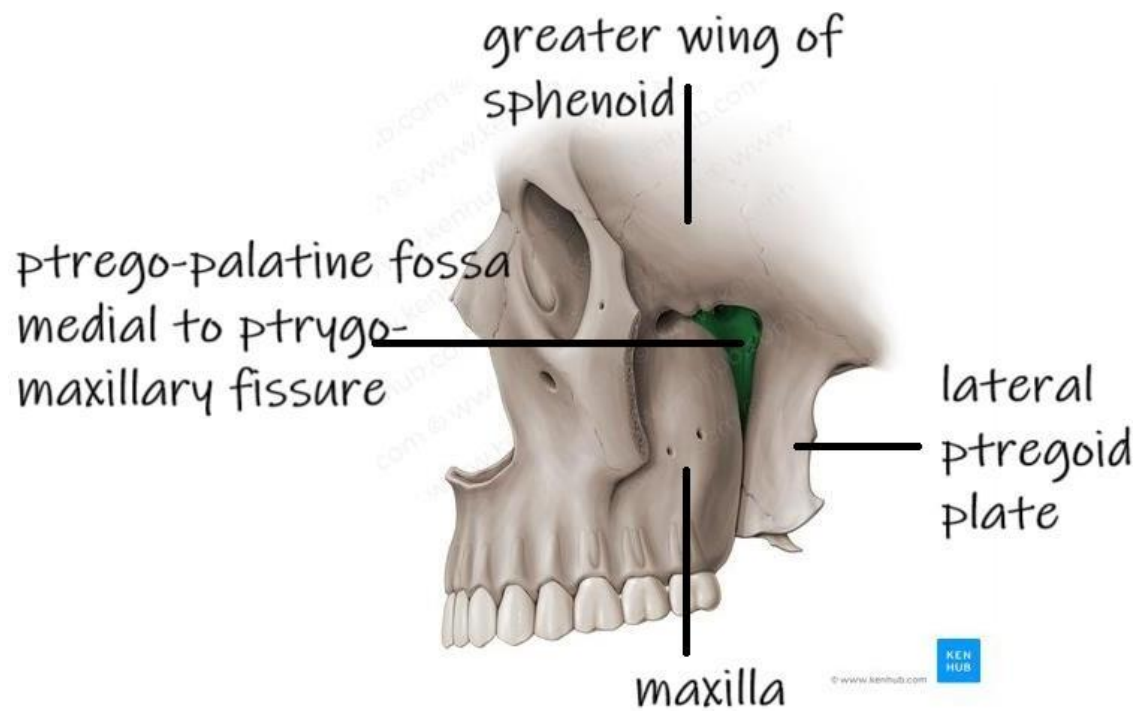
- **Anterior wall**: posterior surface of the maxilla.

- **Lateral wall**: zygomatic arch and ramus of the mandible.

- **Medial wall**: lateral pterygoid plate.

The **anterior wall** is separated from **medial wall** by pterygomaxillary fissure (red circle)





Communications of pterygopalatine fossa

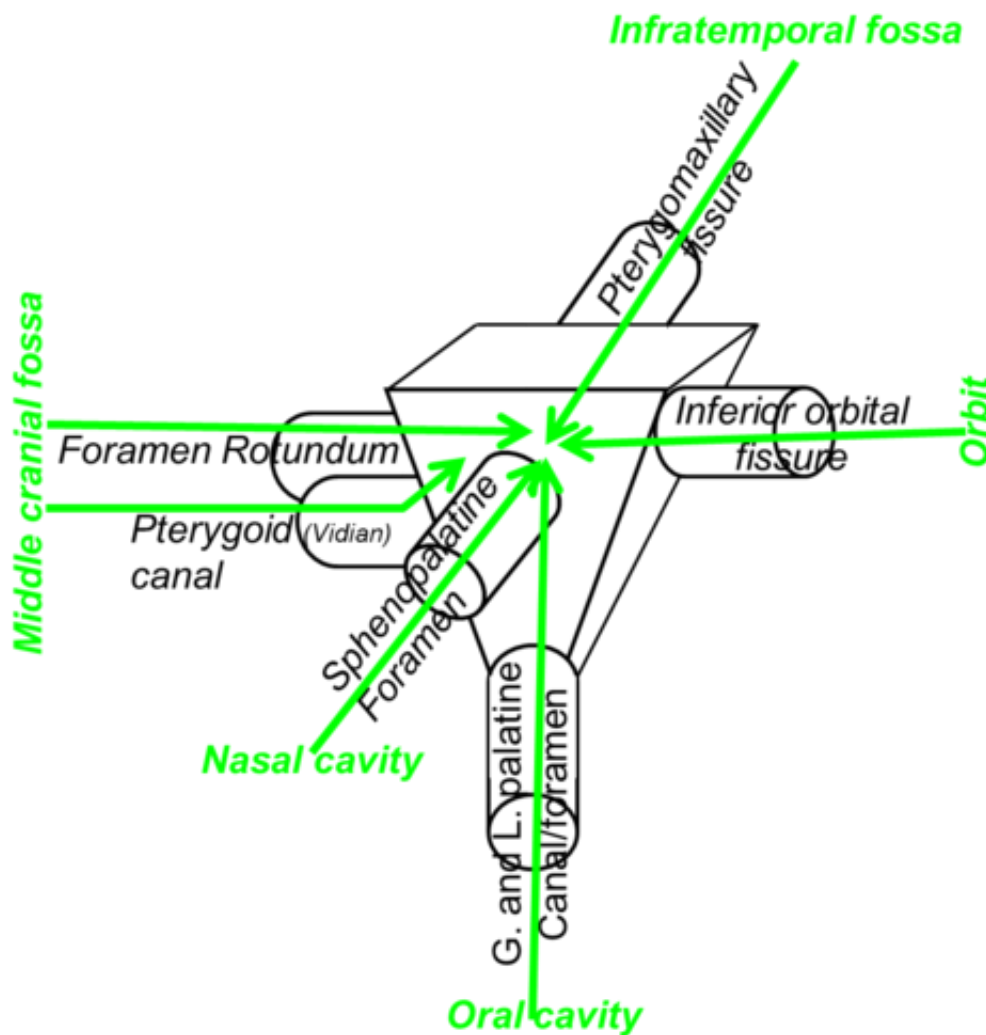
Laterally: pterygomaxillary fissure to infratemporal fossa

Medially: sphenopalatine foramen to the nose

Anteriorly: infraorbital fissure to orbit

Posteriorly: foramen rotundum to middle cranial fossa

superiorly: greater & lesser palatine canals to palate



Temporo-mandibular joint

Articular surfaces:

Above: mandibular fossa & tubercle

Below: head of the condylar process of mandible

Intra-articular disc:

Divides the joint cavity in to 2 compartments:

Upper: allow protrusion & retraction movement.

(Synovial condylar)

Lower: allow elevation & depression movement.

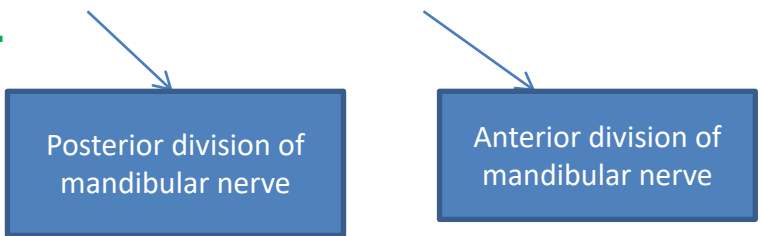
(Synovial hinge)

Neurovascular supply

The arterial supply to the TMJ is provided by the branches of **external carotid**, principally **superficial temporal branch**.

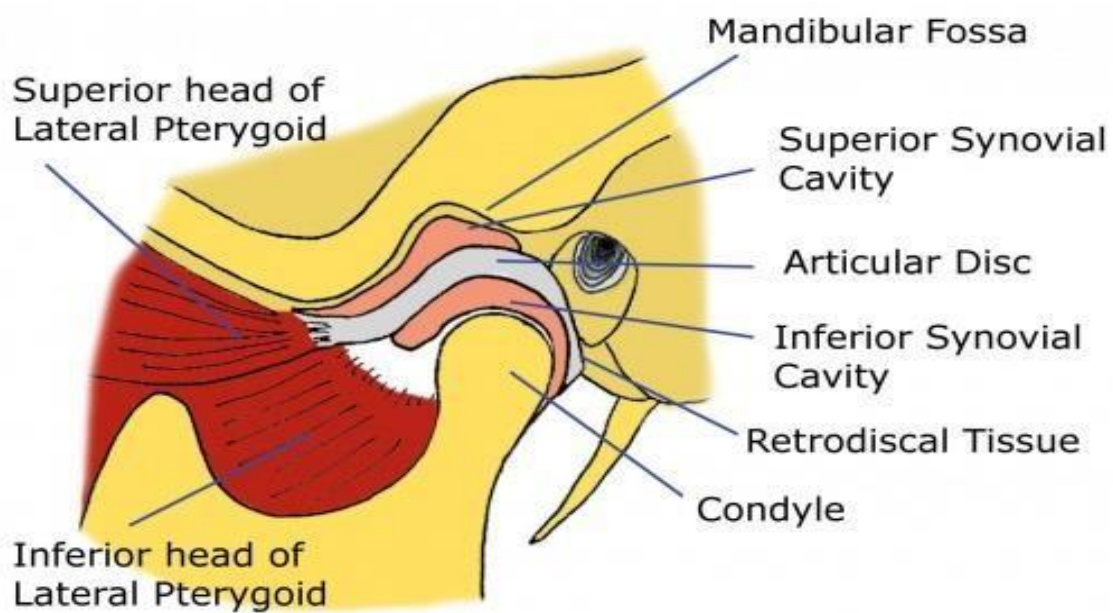
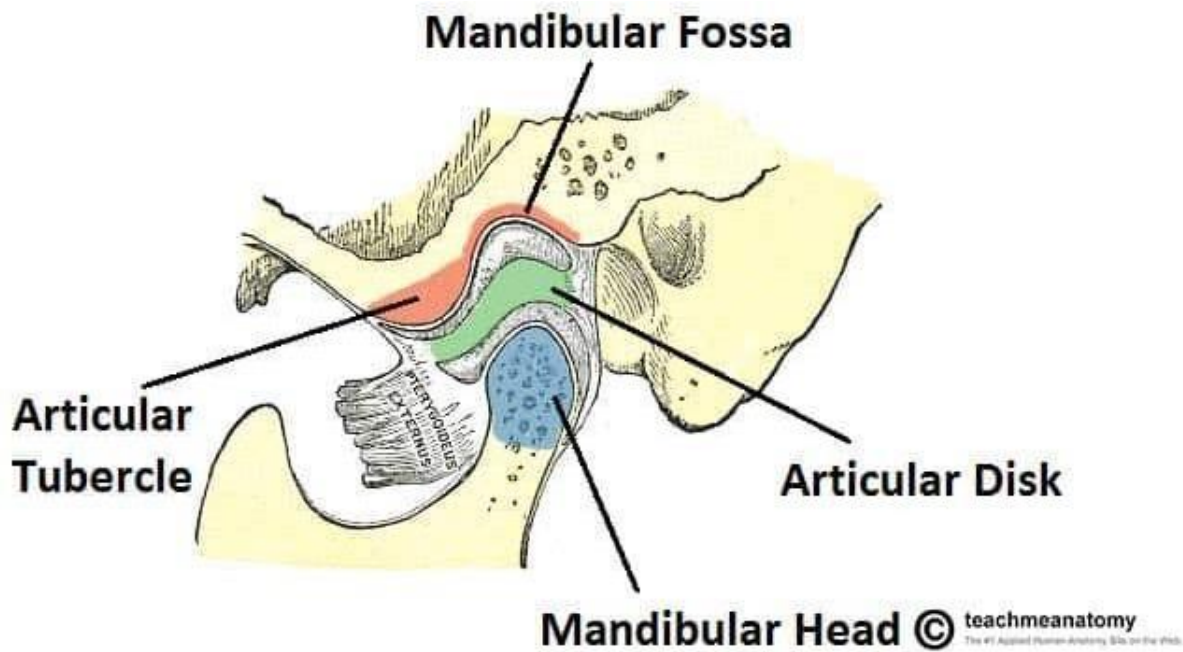
deep auricular (first part max. artery), ascending pharyngeal and maxillary arteries.

TMJ innervated by auriculotemporal & masseteric branches of the mandibular nerve.



Posterior division of
mandibular nerve

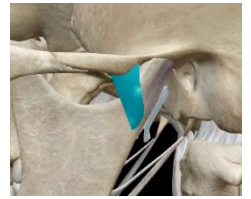
Anterior division of
mandibular nerve



The Temporomandibular Joint

Ligaments of TMJ

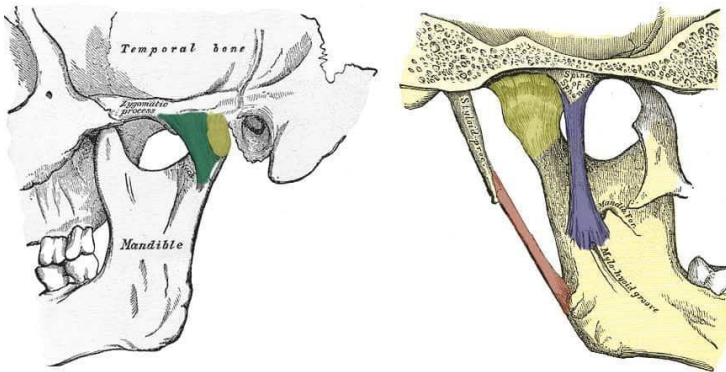
Lateral tempro-mandibular: the strongest
() zygomatic arch & neck of mandible



Stylo- mandibular:
() styloid process & angle of mandible



Spheno-mandibular:
() spine of sphenoid & lingula



- Joint Capsule
- Lateral ligament
- Sphenomandibular ligament
- Stylomandibular ligament