

Vessels and lymphatics of the neck

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Lecture ILOS & Objectives:

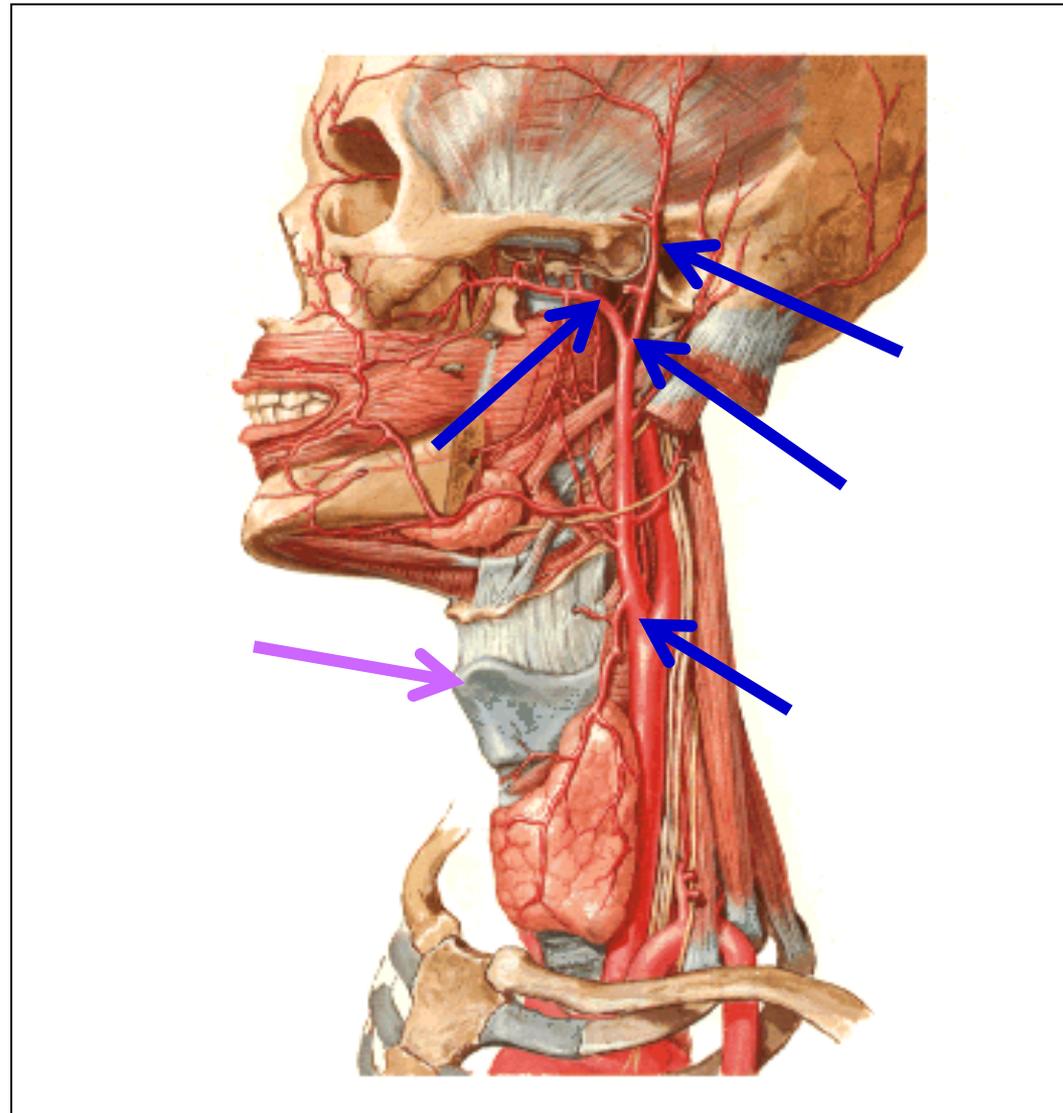
By the end of this lecture the student should be able to:

- 1. Describe the carotid vessels.**
- 2. Define their beginning end course relations and branches.**
- 3. Describe internal jugular vein and its tributaries.**
- 4. Identify the lymphatic drainage of the neck.**

External Carotid Artery

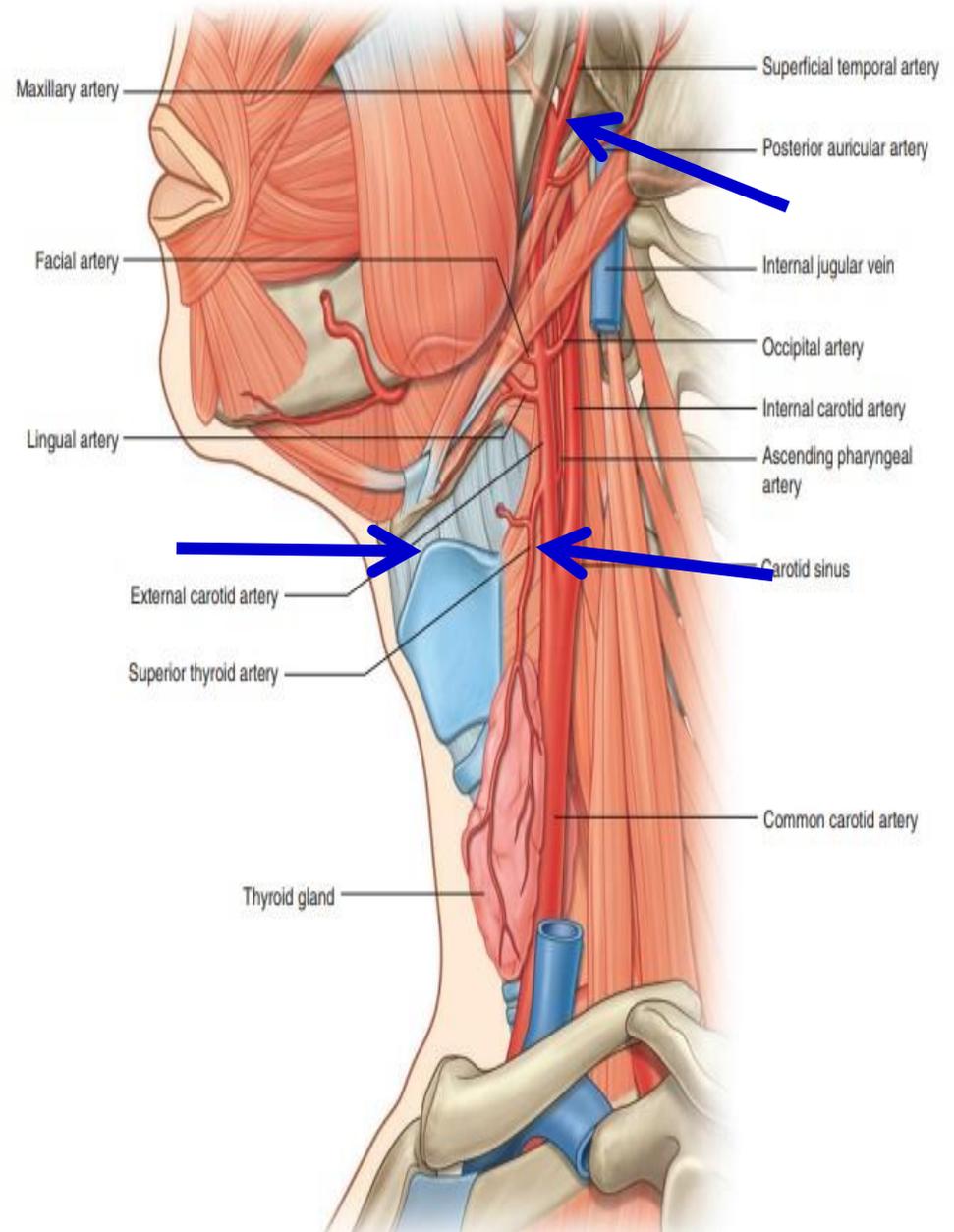
- Course:

- one of the terminal branches of the common carotid artery.
- Begins at upper border of thyroid cartilage
- Ascends upwards and forwards superficial to internal carotid artery in the carotid triangle.
- It leaves the triangle by passing under cover of posterior belly of digastric.
- It pierces postero-medial surface of parotid gland behind ramus of mandible.
- It ends in parotid gland behind neck of mandible by dividing into maxillary and superficial temporal arteries.



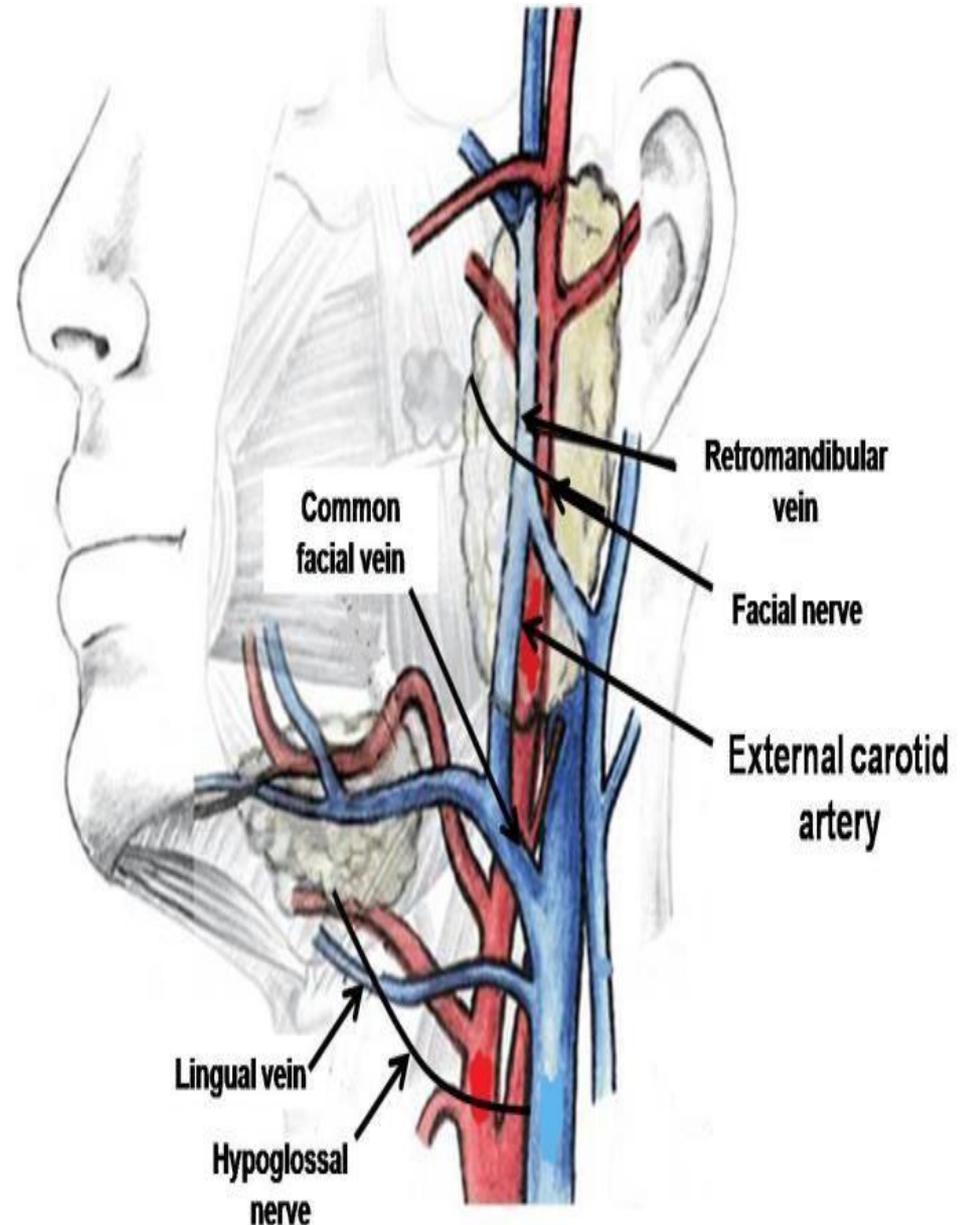
Level of origin of external carotid artery is:

- At the upper border of thyroid cartilage
- Opposite the disc between 3rd and 4th cervical vertebrae.



Superficial relations:

- Posterior belly of digastric crosses the artery at its middle
- Above the level of posterior belly of digastric the artery is crossed by:
 1. Stylohyoid muscle
 2. Rteromandibular vein
- Below the level of posterior belly of digastric the artery is crossed by:
 1. Hypoglossal nerve
 2. Common facial vein
 3. Lingual veins

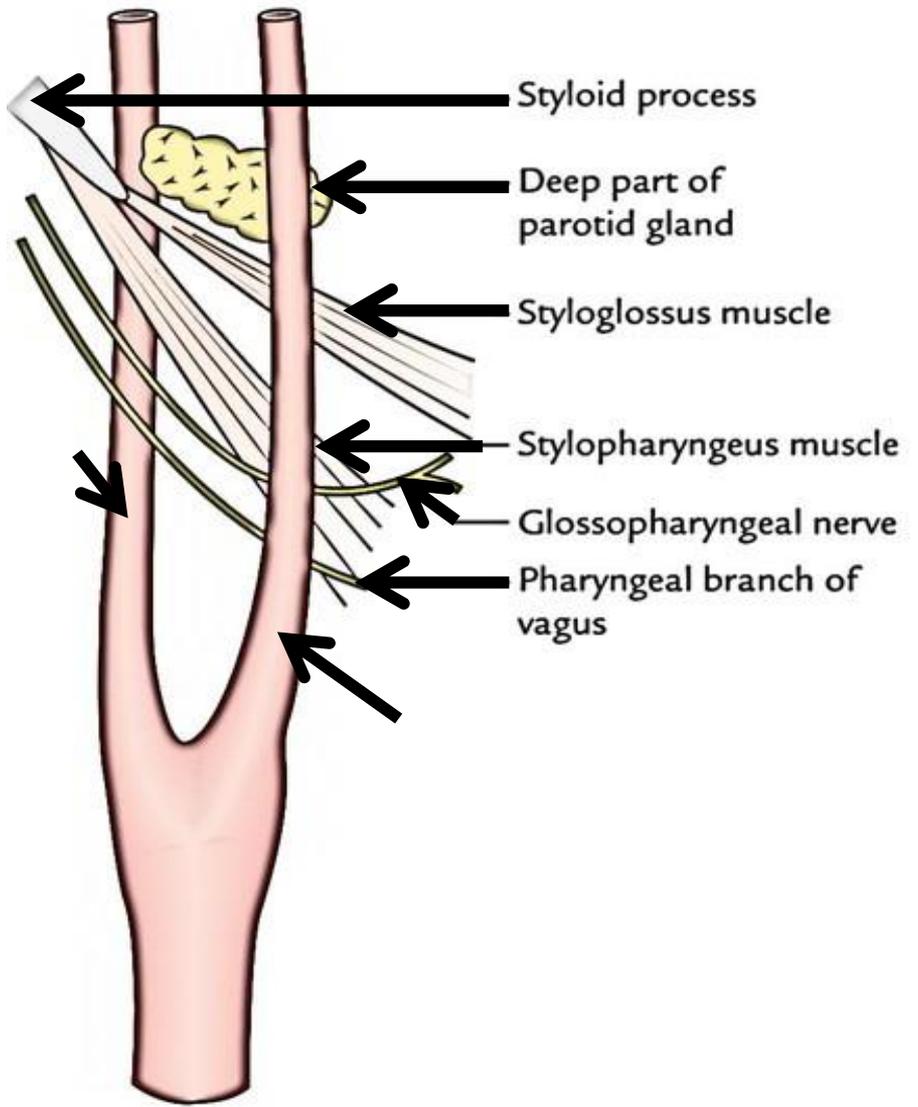


Deep relations:

Internal carotid artery and

Between ECA& ICA:

- Part of parotid gland
- Styloid process
- Styloglossus
- Stylopharyngeus
- Glossopharyngeal nerve
- Pharyngeal branch of vagus nerve



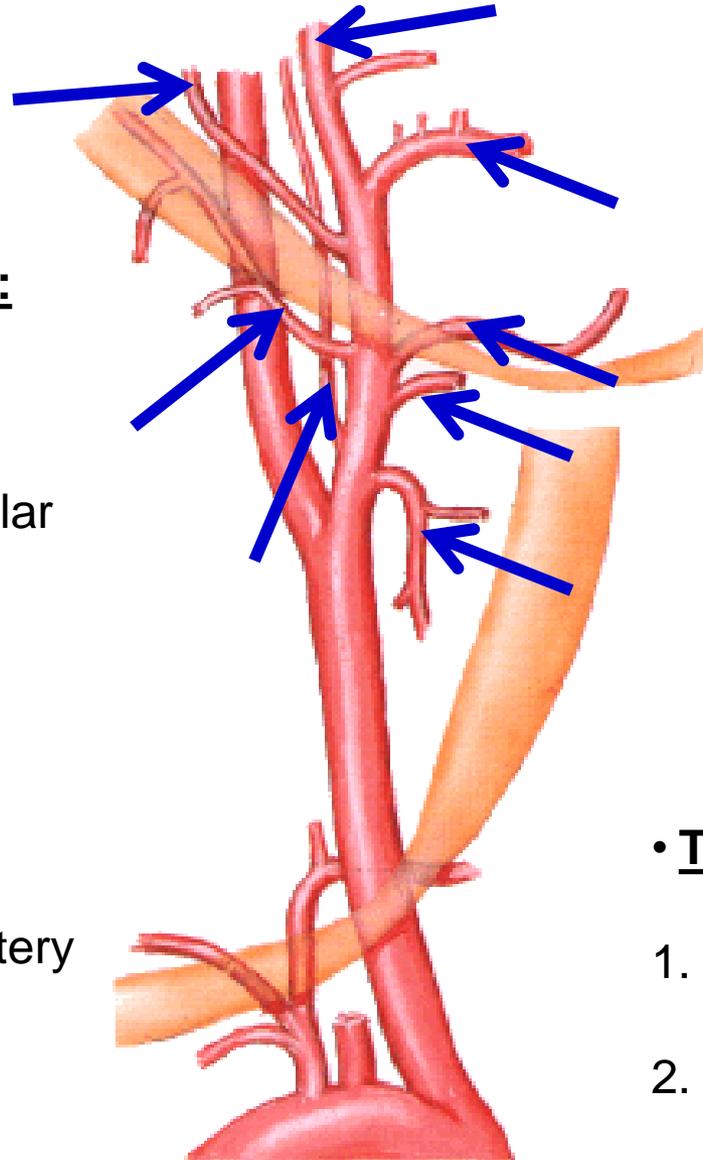
Branches of external carotid artery

• From posterior aspect:

1. Occipital artery
2. Posterior auricular artery

• From medial aspect:

- Ascending pharyngeal artery

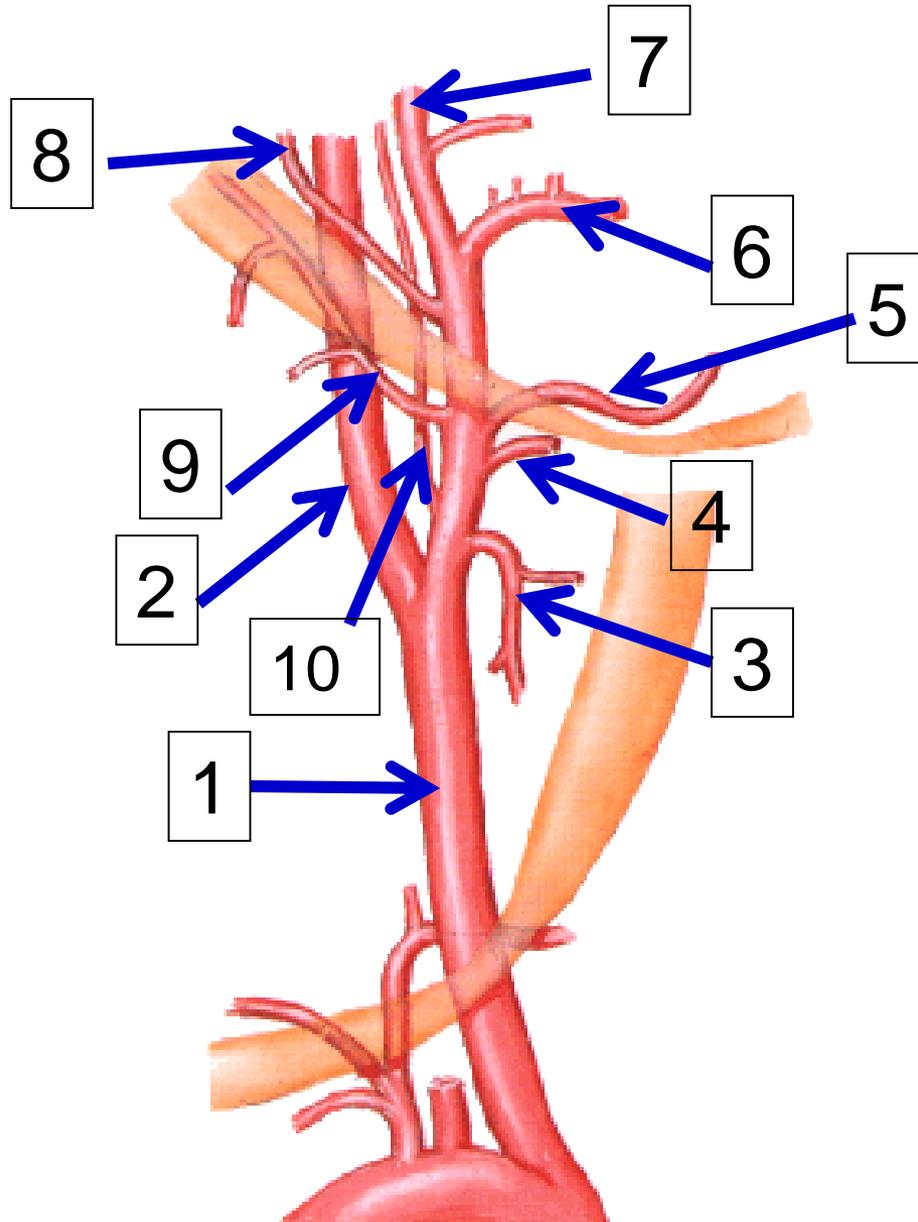


• From anterior aspect:

1. Superior thyroid artery
2. Lingual artery
3. Facial artery

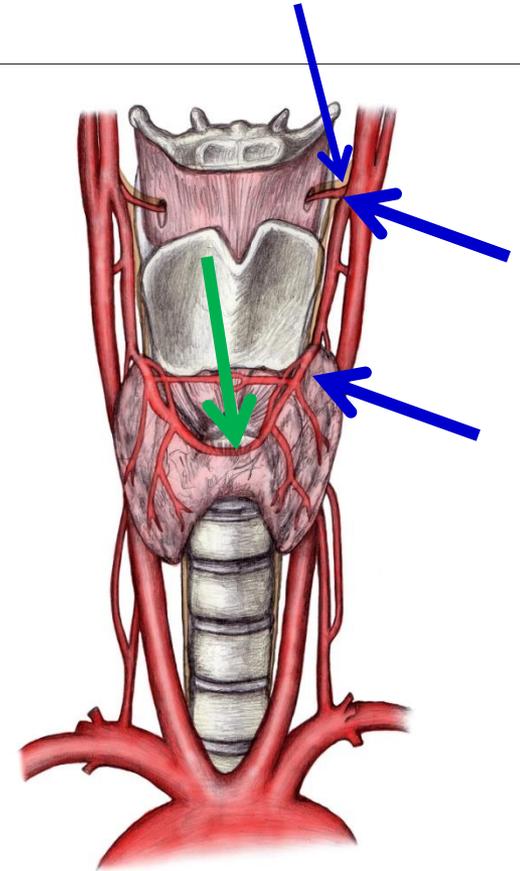
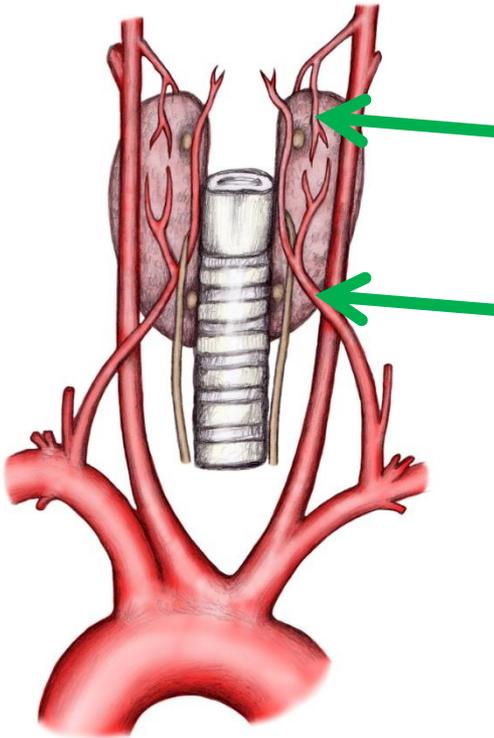
• Terminal branches:

1. Superficial temporal artery
2. Maxillary artery



Superior thyroid artery

- Arises at a level below greater cornu of hyoid bone
- It curves downwards and forwards to reach upper pole of thyroid gland
- It is accompanied by the external laryngeal nerve.



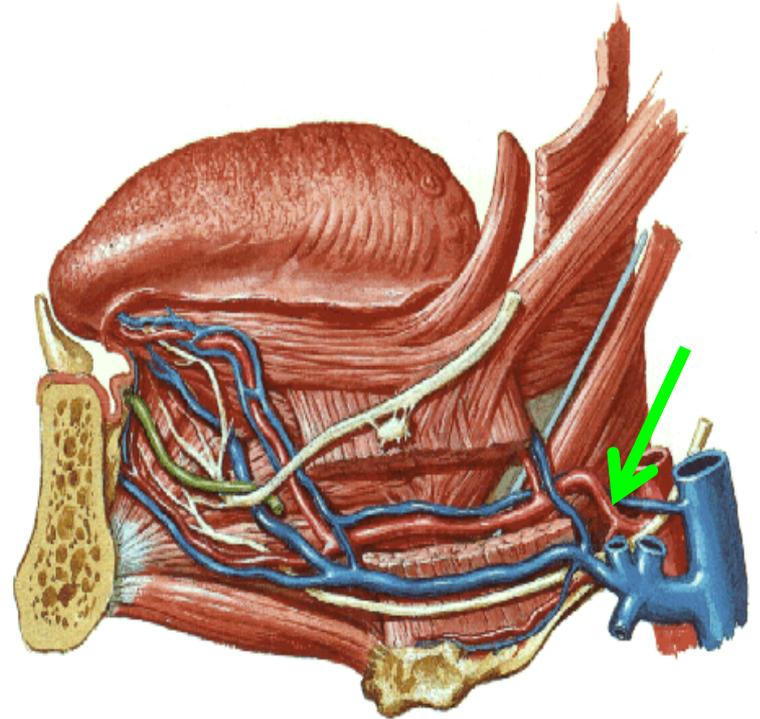
Lingual artery

Origin:

- Arises at the level of tip of greater cornu of hyoid bone

•Course:

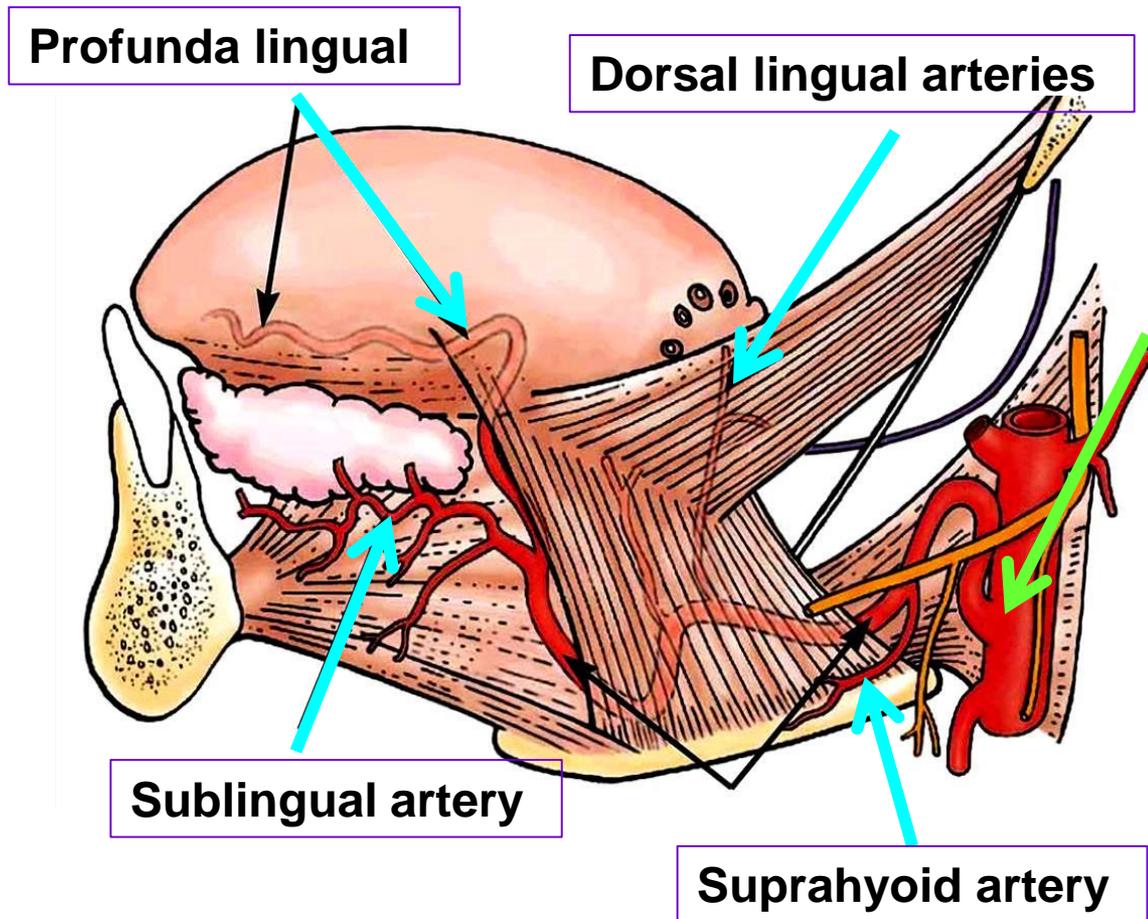
- It runs forwards **above** hyoid bone and **deep** to hyoglossus muscle
- Then, it passes upwards along anterior border of hyoglossus to tip of tongue (profunda artery).



Lingual Artery

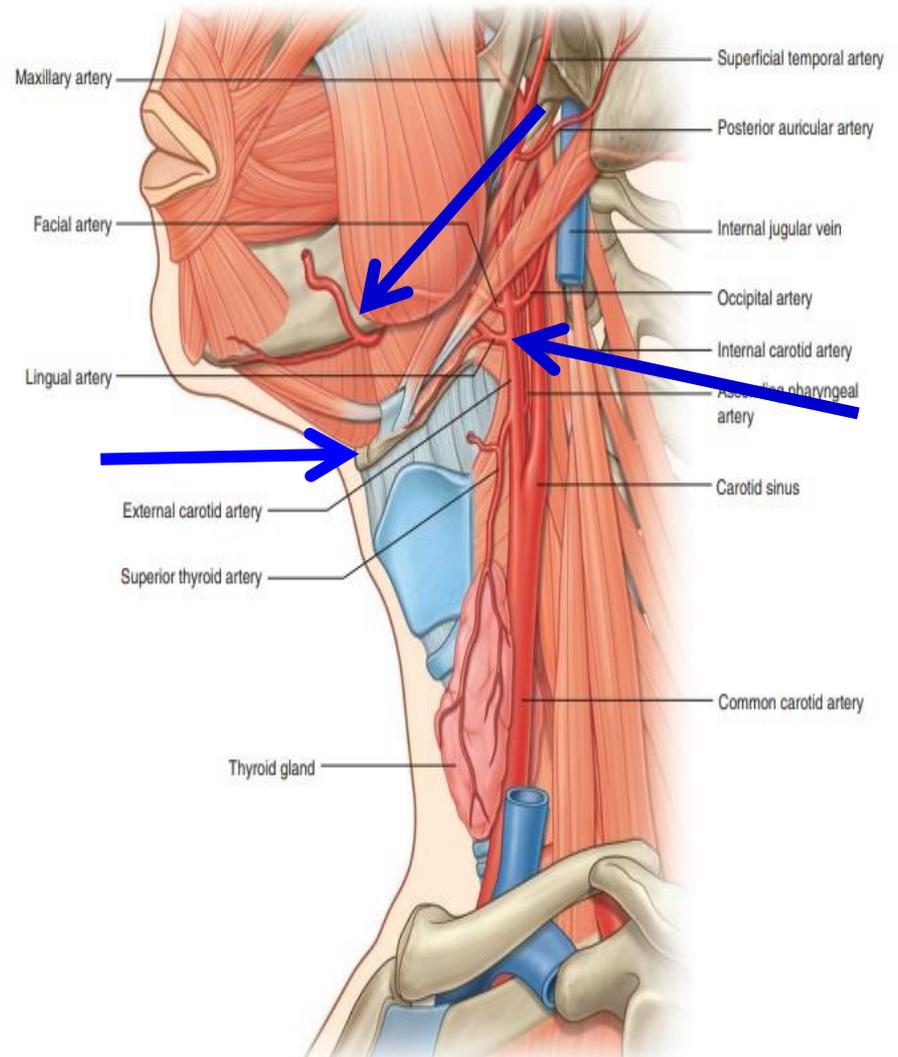
• Branches:

1. **Suprahyoid artery** along upper border of hyoid bone
2. **Dorsal lingual arteries** to the dorsum of tongue
3. **Sublingual artery** ascends upwards and forwards on genioglossus deep to mylohyoid to supply sublingual gland



Facial Artery

- Arises just above the level of tip of greater cornu of hyoid bone



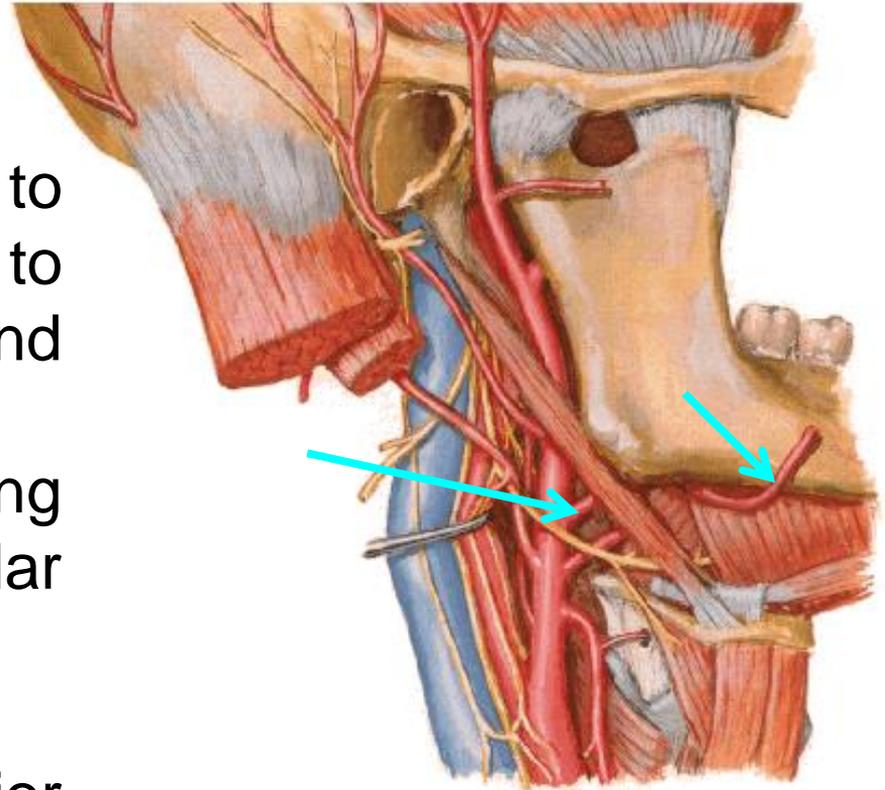
Facial Artery

Origin:

- Arises from front of external carotid artery just above tip of greater horn of hyoid bone

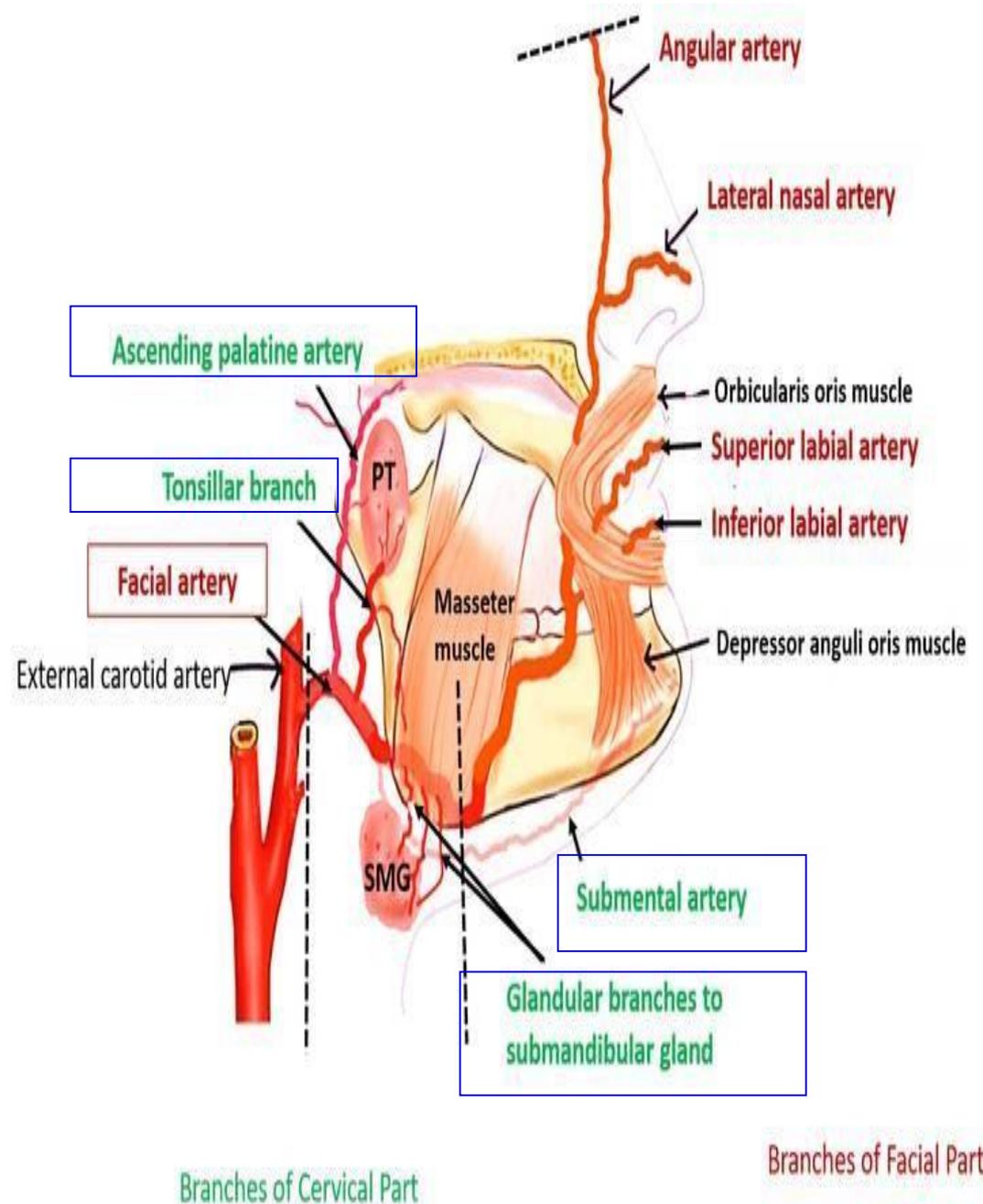
Course :

- It runs upwards **superficial** to superior constrictor and **deep** to posterior belly of digastric and stylohyoid
- It ascends upwards grooving posterior aspect of submandibular gland
- It runs upwards deep to mandible
- It ascends to face at antero-inferior corner of masseter



• Branches of facial artery in submandibular region:

- 1. Ascending palatine artery** alongside pharynx to reach palate
- 2. Tonsillar artery** perforate superior constrictor to supply the tonsil
- 3. Glandular arteries** fix facial artery to posterior aspect of the submandibular gland
- 4. Submental artery** runs along lower border of mandible



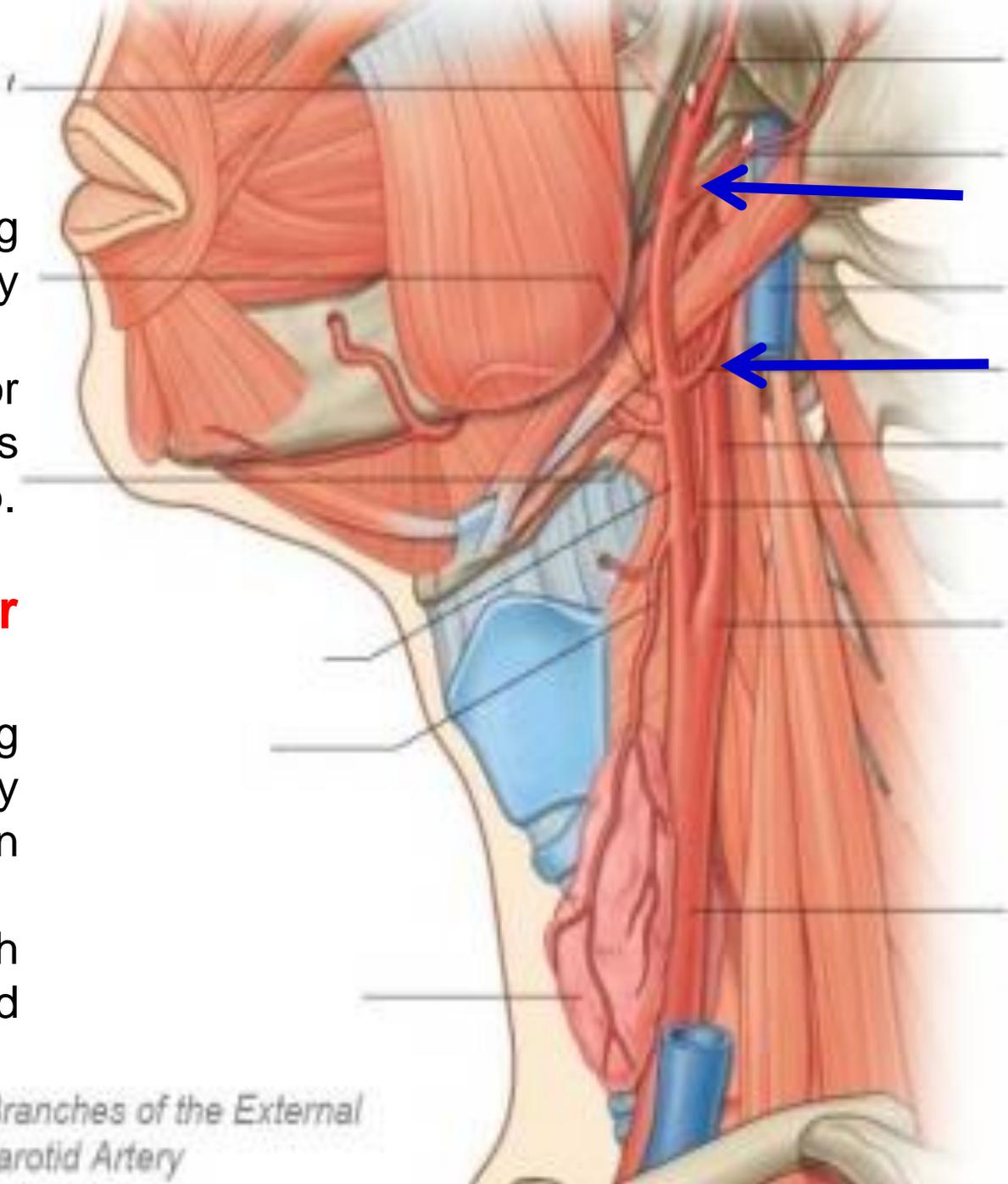
- **Occipital Artery:**

- Passes backwards along lower border of posterior belly of digastric
- Enters apex of posterior triangle and accompanies greater occipital nerve to scalp.

- **Posterior auricular artery:**

- Passes backwards along upper border of posterior belly of digastric to groove between auricle and scalp.
- It gives stylomastoid branch that enters stylomastoid foramen to middle ear.

3: Branches of the External Carotid Artery

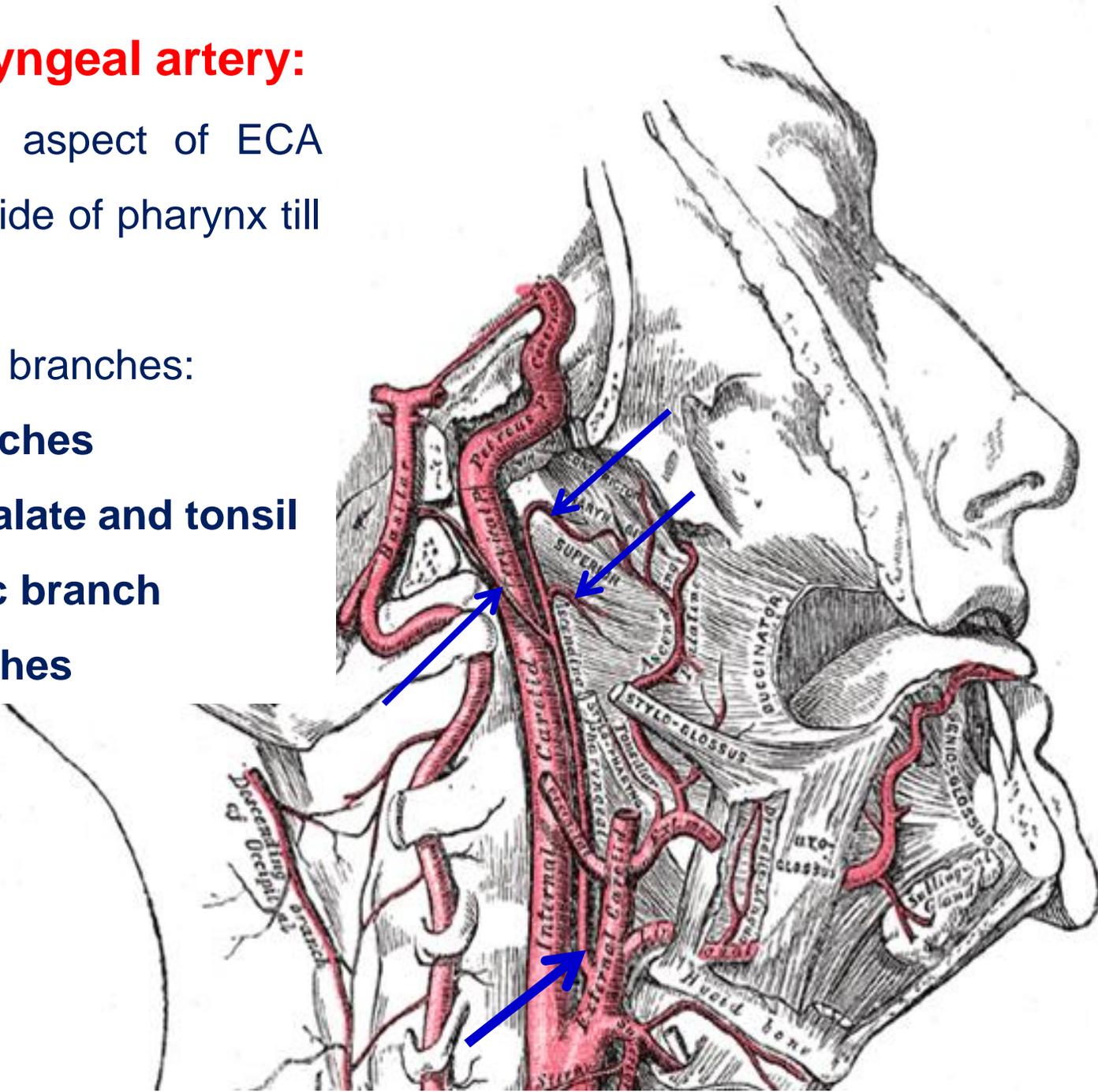


Ascending pharyngeal artery:

• Arises from medial aspect of ECA and ascends on the side of pharynx till base of skull.

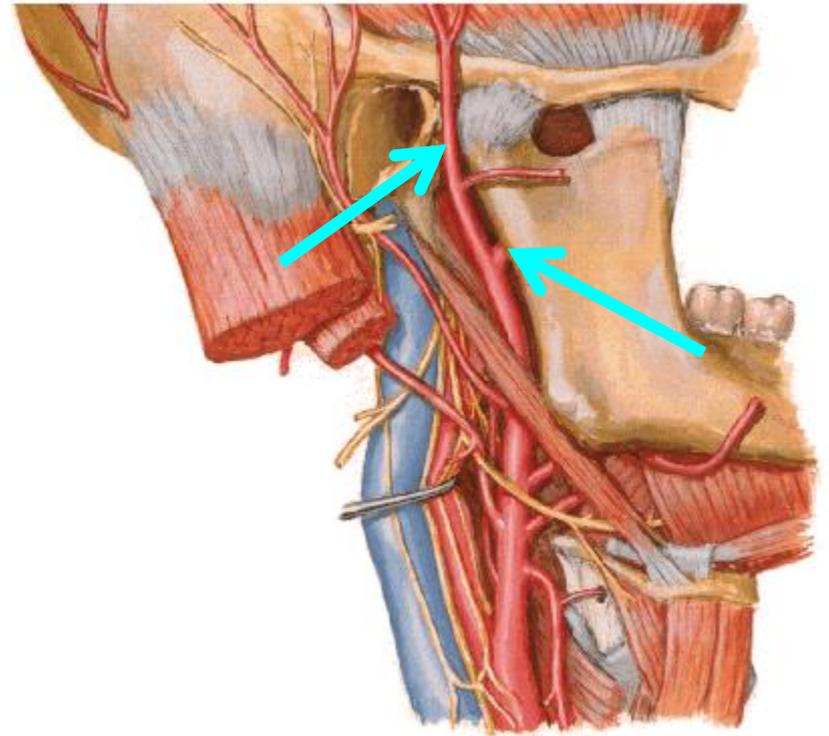
• It gives the following branches:

- 1. Pharyngeal branches
- 2. Branch to soft palate and tonsil
- 3. Inferior tympanic branch
- 4. Meningeal branches



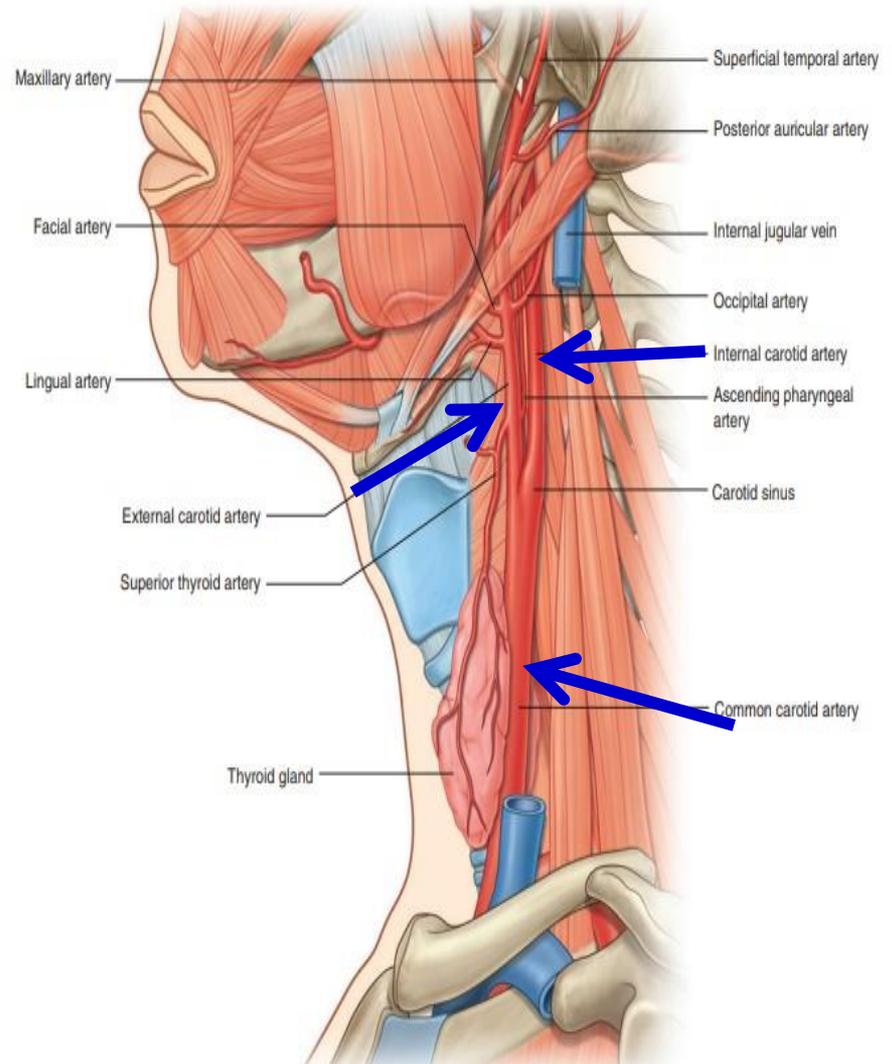
. Terminal Branches:

- 1. Superficial temporal artery**
- 2. Maxillary artery**



Internal Carotid Artery

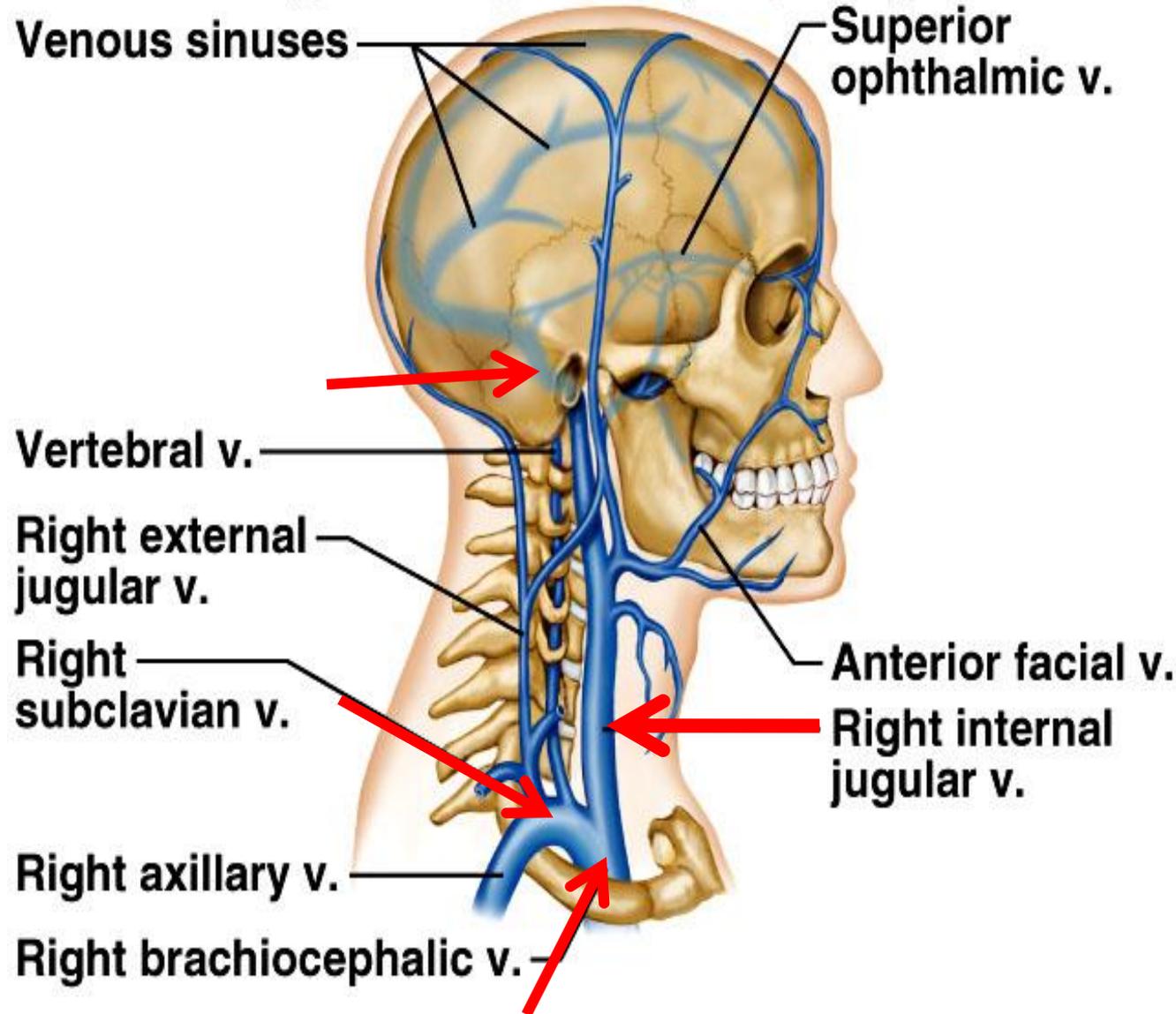
- It is one of 2 terminal branches of common carotid artery.
- It begins at the level of upper border of thyroid cartilage.
- It ascends within the carotid sheath in a line with common carotid artery to the base of the skull where it enters carotid canal



Internal Jugular Vein

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- It **begins** at jugular foramen as a continuation of the sigmoid sinus.
- It **descends** through the neck in the carotid sheath.
- It **ends** by joining subclavian vein behind medial end of the clavicle to form brachiocephalic vein



• Tributaries:

1. Inferior petrosal sinus
2. Common facial vein
3. Lingual veins
4. Pharyngeal veins
5. Superior thyroid vein
6. Middle thyroid vein
7. Occipital vein

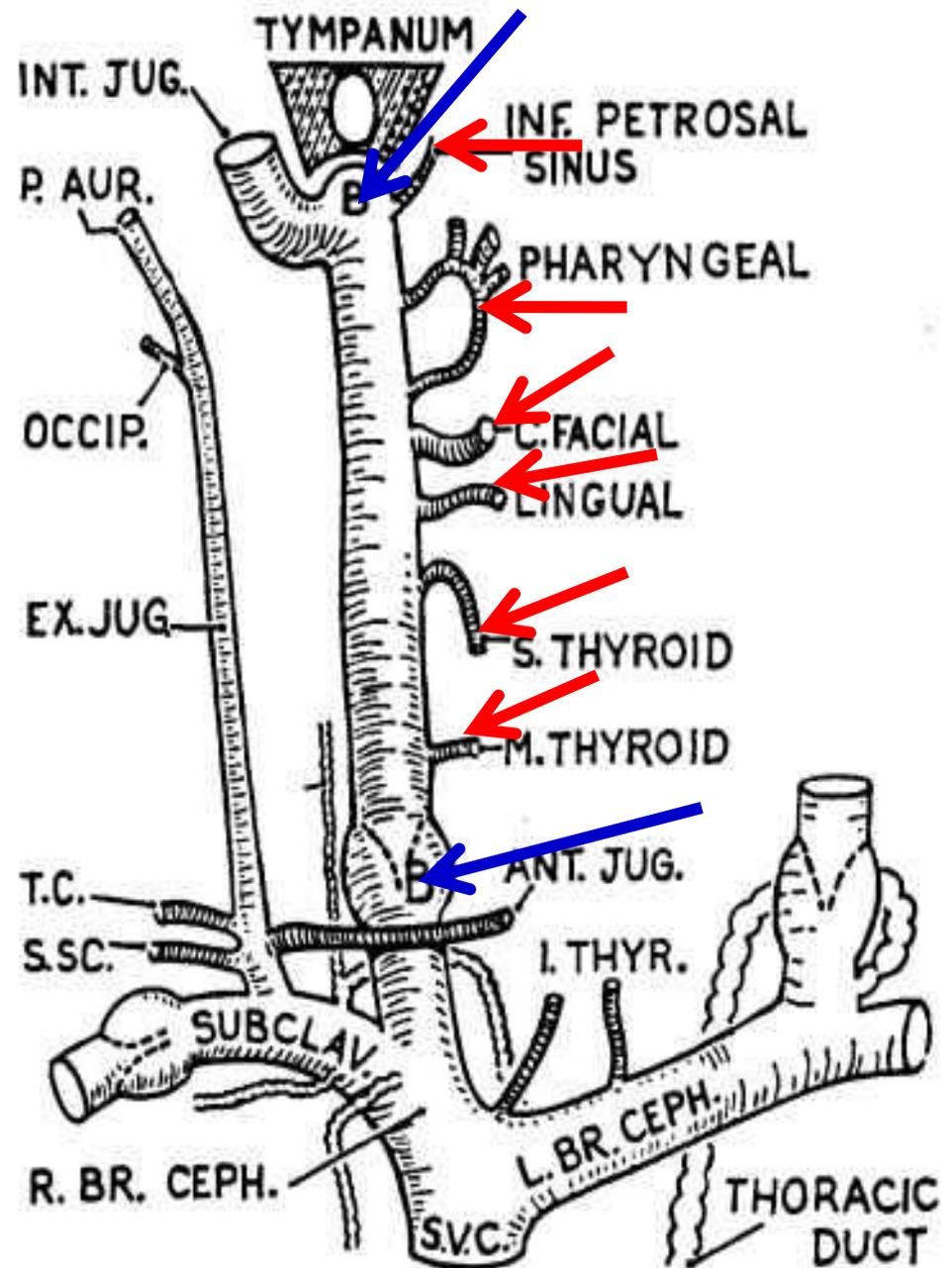
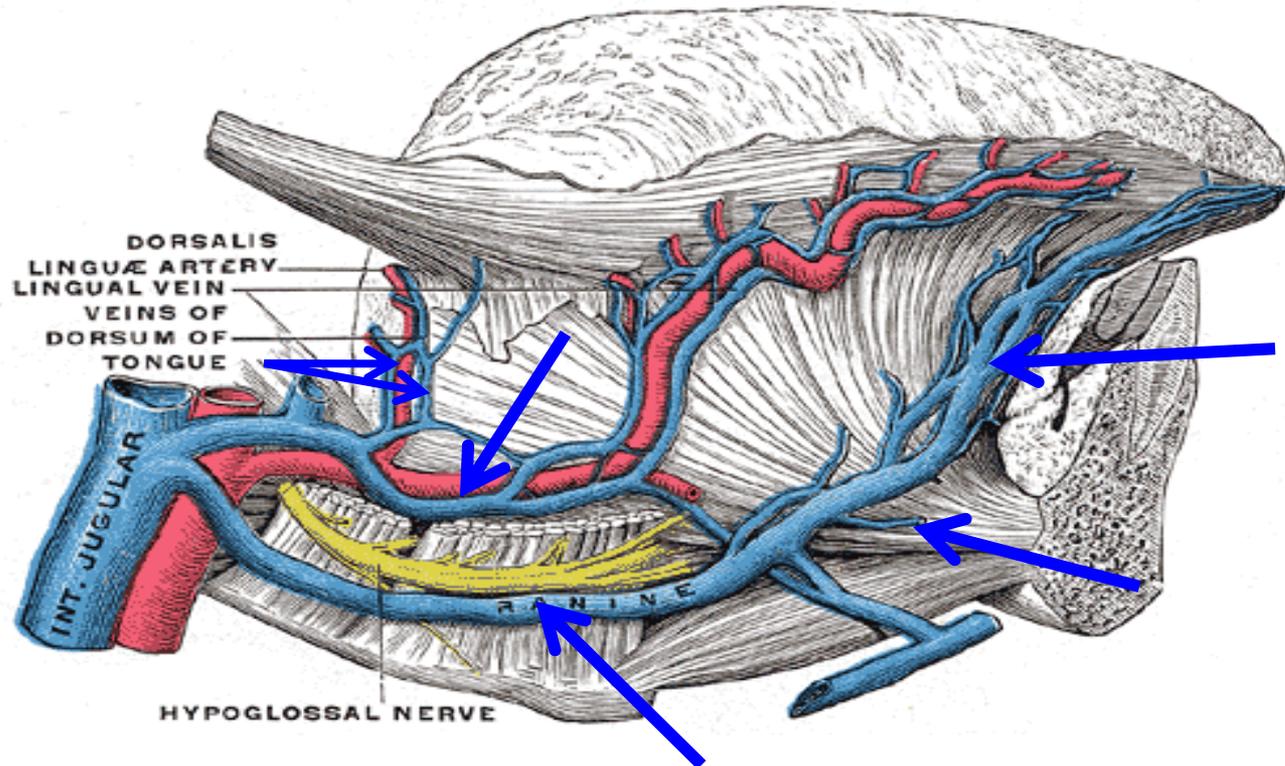


FIG. 759. The internal jugular vein

Lingual Veins



- **Dorsal lingual veins**: drain dorsum and side of the tongue and join lingual vein
- **Lingual vein** accompany lingual artery and drains into internal jugular vein
- **Deep lingual vein** begins near tip of the tongue and runs on the under surface of tongue
- **Sublingual vein** drains sublingual salivary gland and joins deep lingual vein to form vena comitans of hypoglossal nerve
- **vena comitans of hypoglossal nerve** drains into common facial or internal jugular vein

Lymphatics of the neck

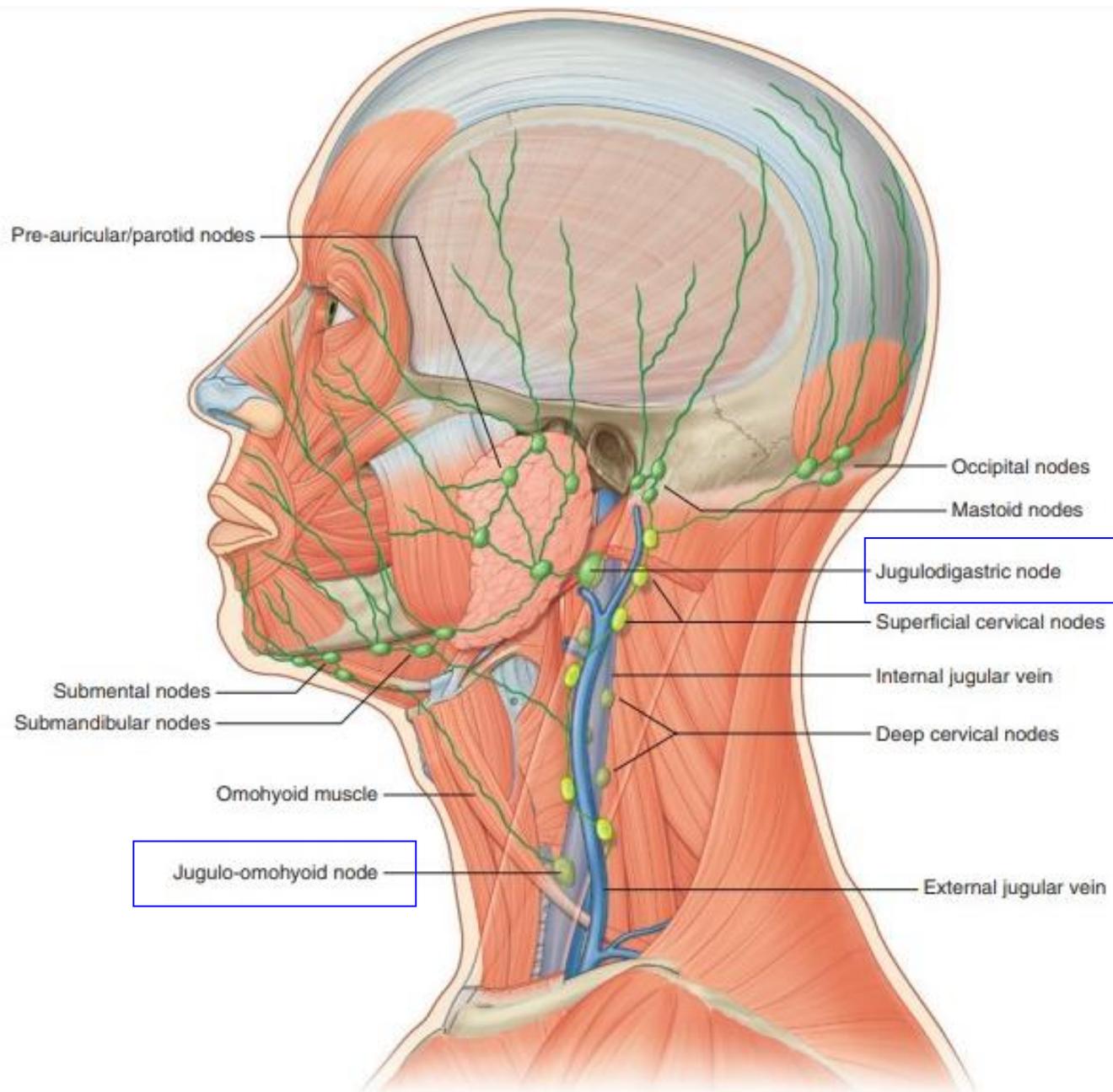
Superficial cervical lymph nodes

- are a collection of lymph nodes along the external jugular vein on the superficial surface of the sternocleidomastoid muscle
- They primarily receive lymphatic drainage from the posterior and posterolateral regions of the scalp through the occipital and mastoid nodes.
- Send lymphatic vessels in the direction of the deep cervical nodes.

Deep cervical lymph nodes :

The deep cervical nodes are a collection of lymph nodes that form a chain along the internal jugular vein.

- They are divided into upper and lower groups where the intermediate tendon of the omohyoid muscle crosses the common carotid artery and the internal jugular vein.
- **The jugulodigastric node.**
 - The most superior node in the upper deep cervical group
 - It is This large node is where the posterior belly of the digastric muscle crosses the internal jugular vein.
 - Receives lymphatic drainage from the tonsils and tonsillar region.
- **The jugulo-omohyoid node**
 - It is at or just inferior to the intermediate tendon of the omohyoid muscle,. This node receives lymphatic drainage from the tongue.
- The deep cervical nodes eventually receive all lymphatic drainage from the head and neck.
- **From the deep cervical nodes,** lymphatic vessels form **the right and left jugular trunks,** which empty into **the right lymphatic duct** on the right side **or the thoracic duct** on the left side.



REFERENCES

- **Snell`s clinical anatomy by regions ,Tenth Edition**
- **Gray`s Anatomy for students, Third Edition**
- **Grant`s Atlas of Anatomy**

Thank
you

