

# CARDIOVASCULAR MODULE 2024

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**MAJOR VESSELS OF HEAD  
and NECK  
THEIR SURFACE ANATOMY**

# Major vessels of head and neck



**Subclavian artery**

**Common Carotid artery**

**Internal  
carotid artery**

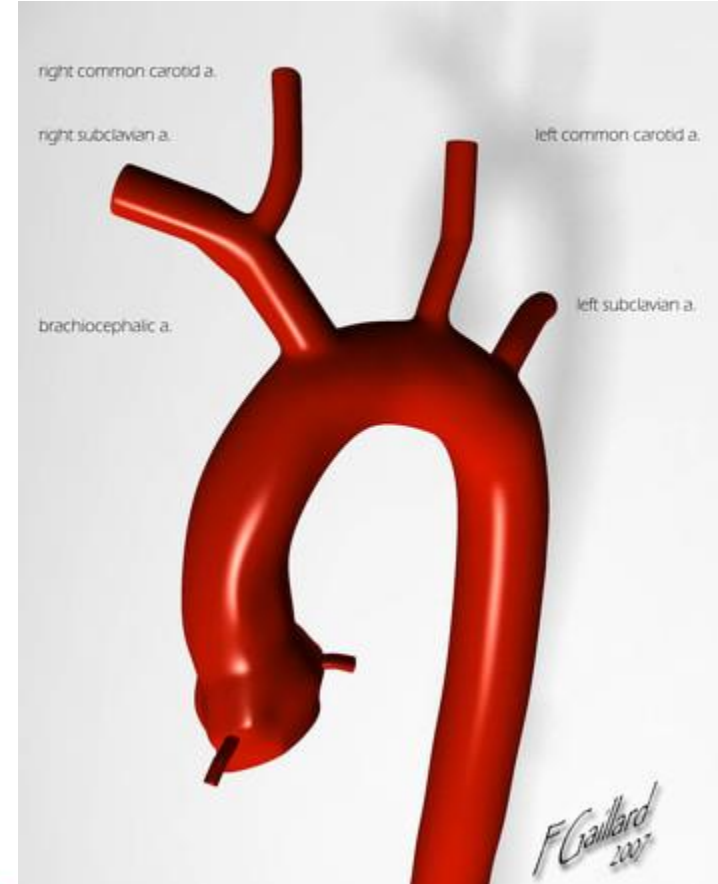
**External carotid artery**

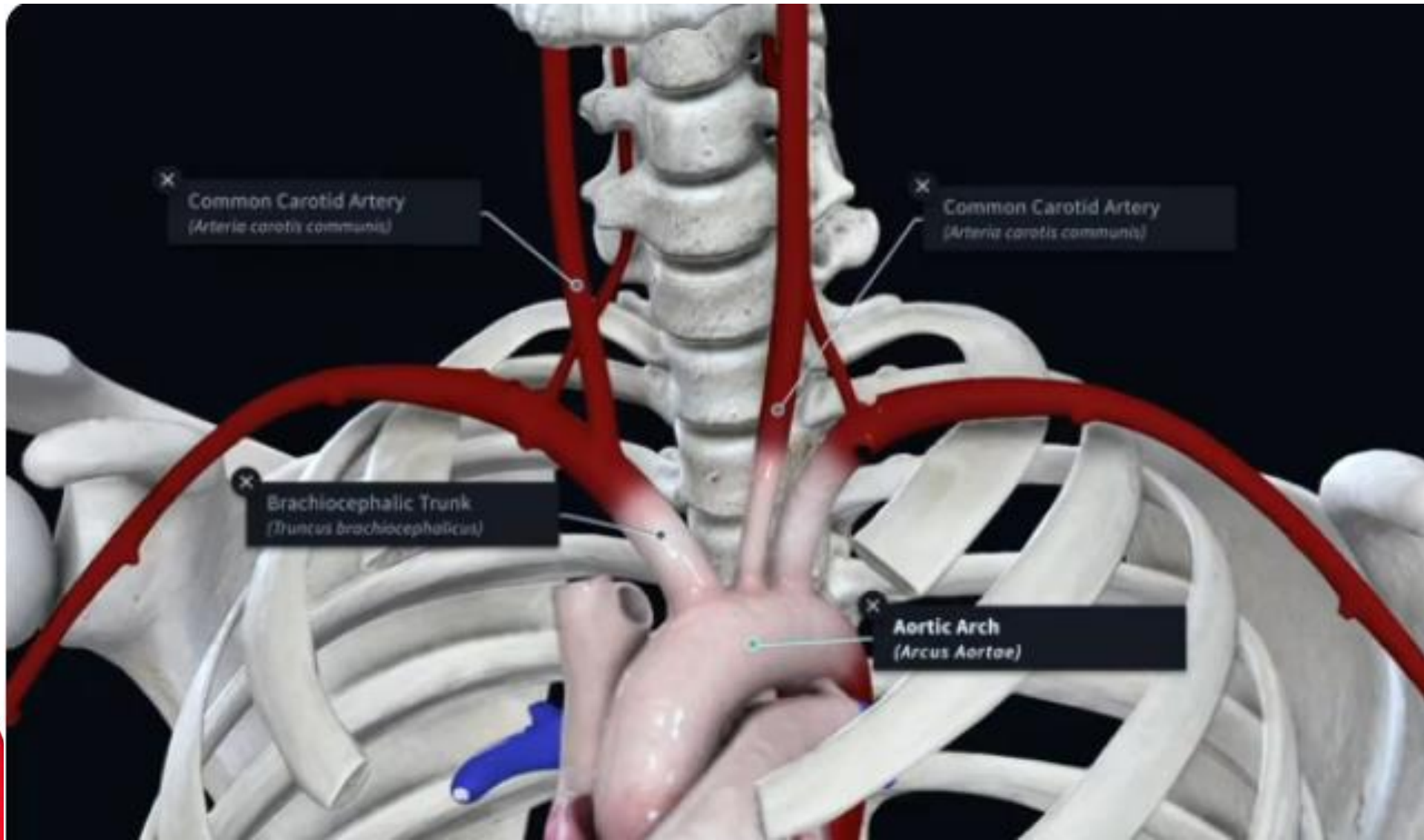


# Common Carotid Artery

## START:

- ❖ **Right side:** arises from the brachiocephalic trunk behind the right sternoclavicular joint.
- ❖ **Left side:** arises directly from the arch of aorta in the superior mediastinum of thorax.



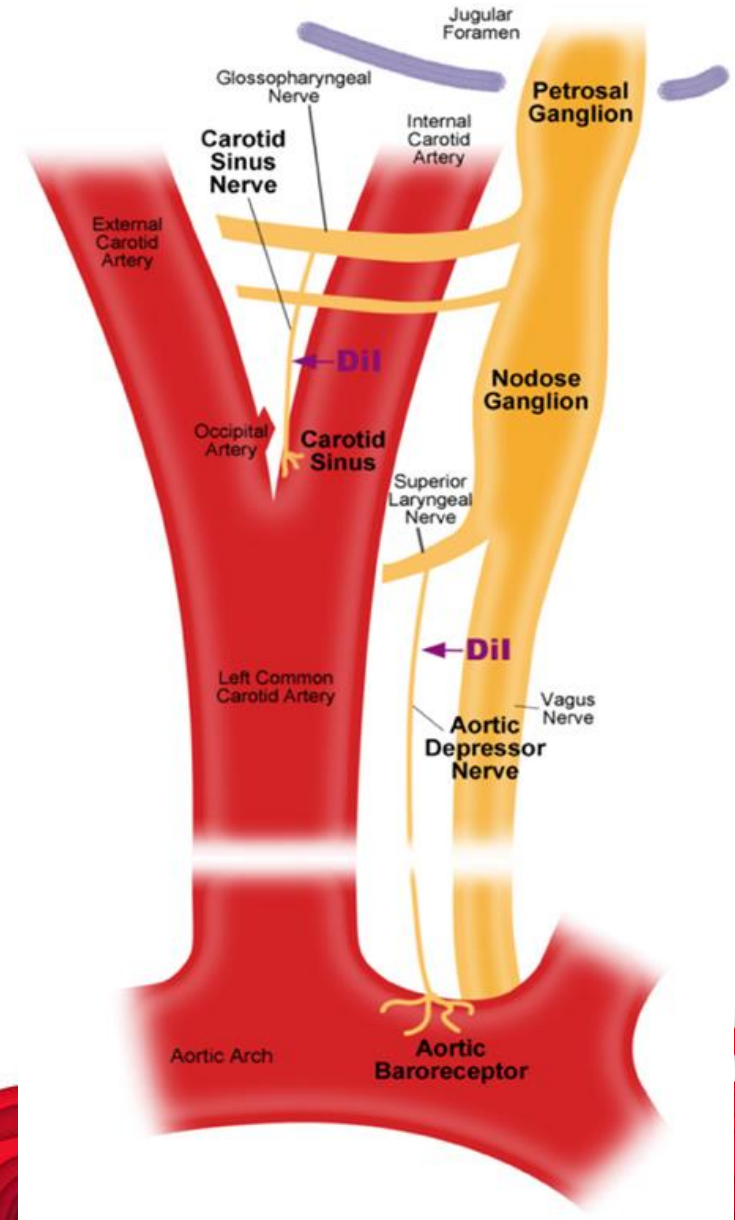
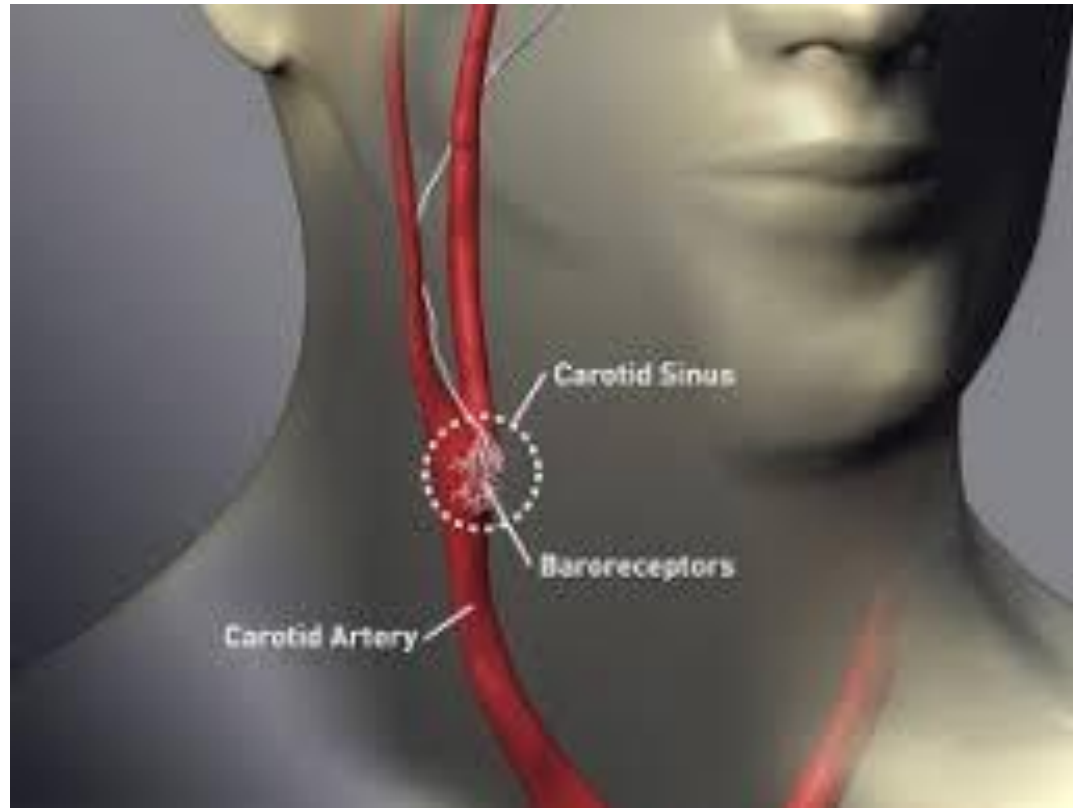


# Common Carotid Artery

## END:

- ❑ At the level of the upper border of thyroid cartilage (disk between c3 & c4) by dividing into internal and external carotid arteries.
- ❑ At its end (or beginning of internal carotid) there is a dilatation called carotid sinus which is sensitive to blood pressure changes. It has pressure receptors which are innervated by glossopharyngeal nerve



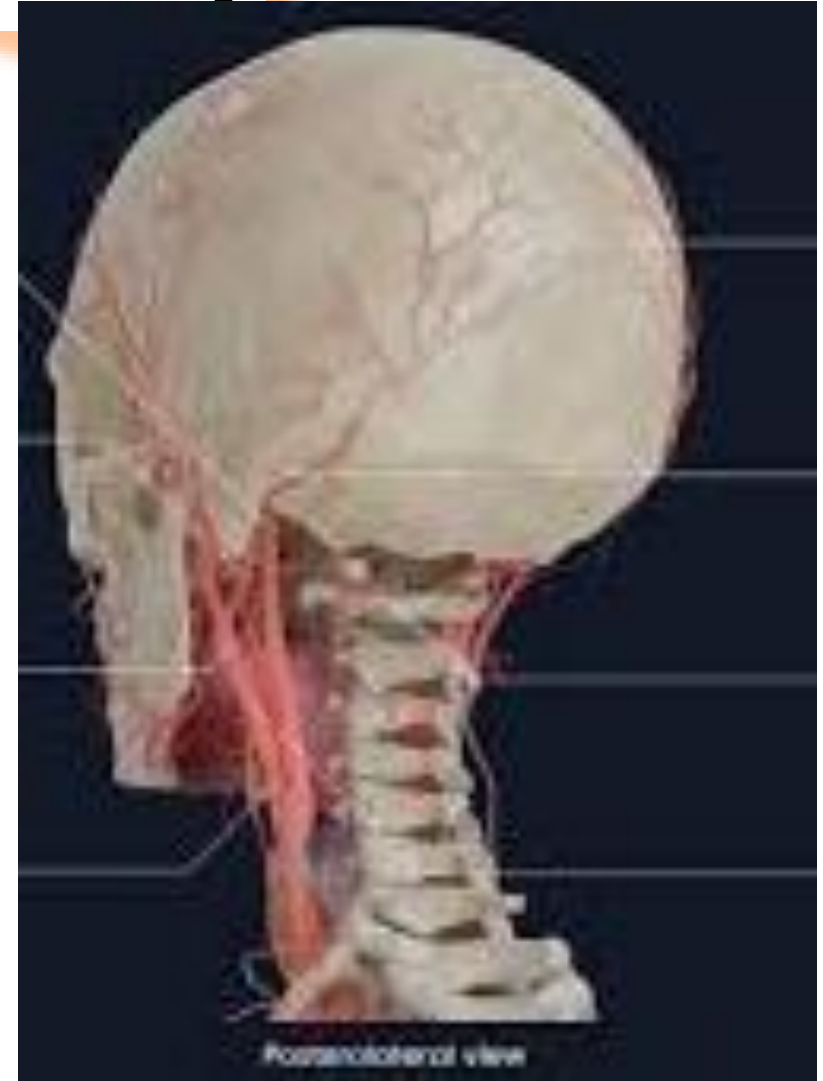


# External Carotid Artery

Beginning: At the level of the upper border of thyroid cartilage.

Course and termination:

- It ends behind the neck of mandible inside the substance of parotid gland by dividing into superficial temporal and maxillary arteries.

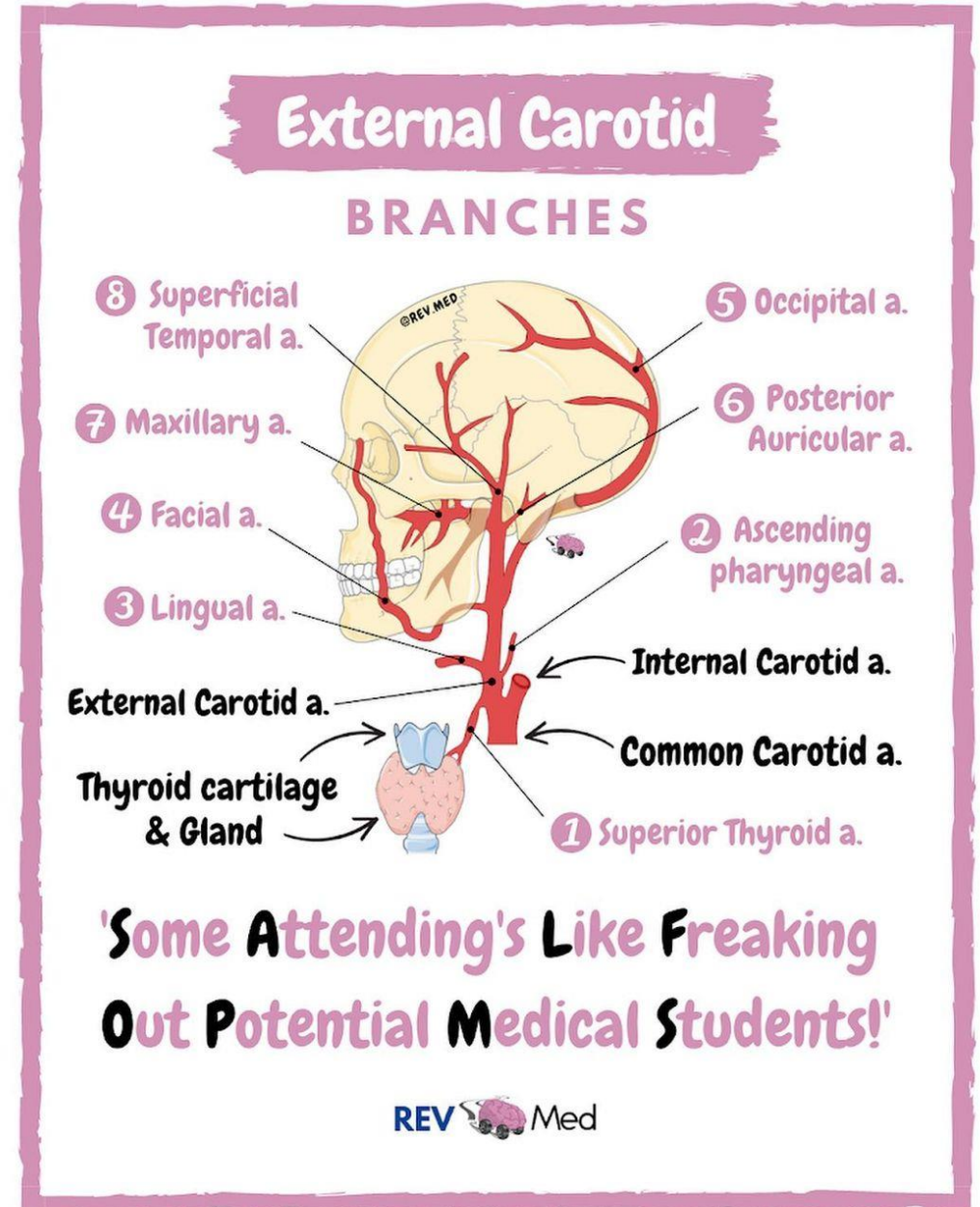




# Branches of ECA

It gives rise to six branches in total:

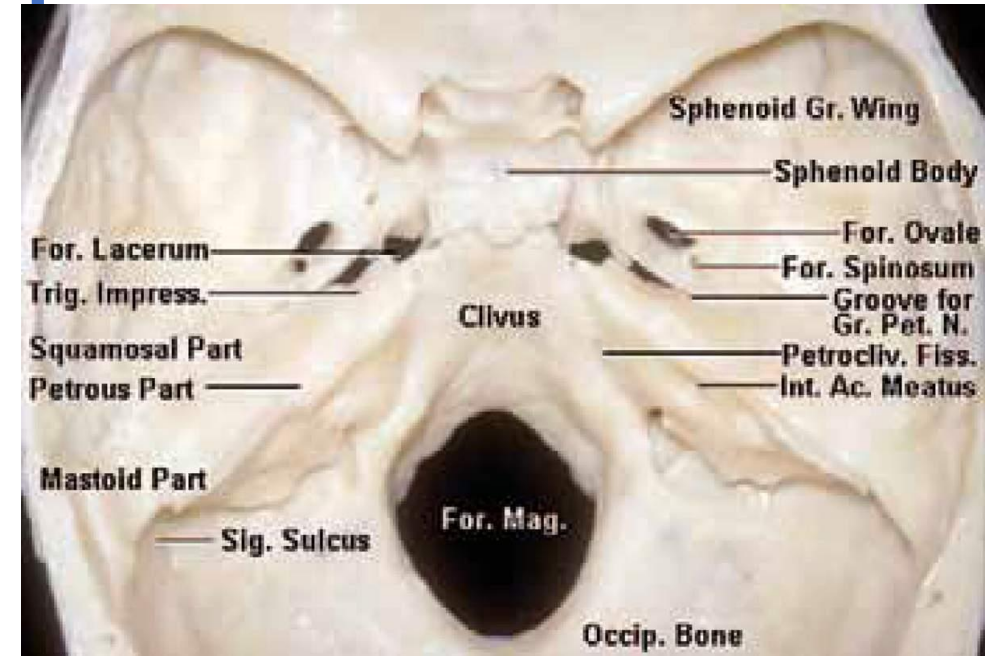
- Superior thyroid artery
- Lingual artery
- Facial artery
- Ascending pharyngeal artery
- Occipital artery
- Posterior auricular artery



# Internal Carotid Artery

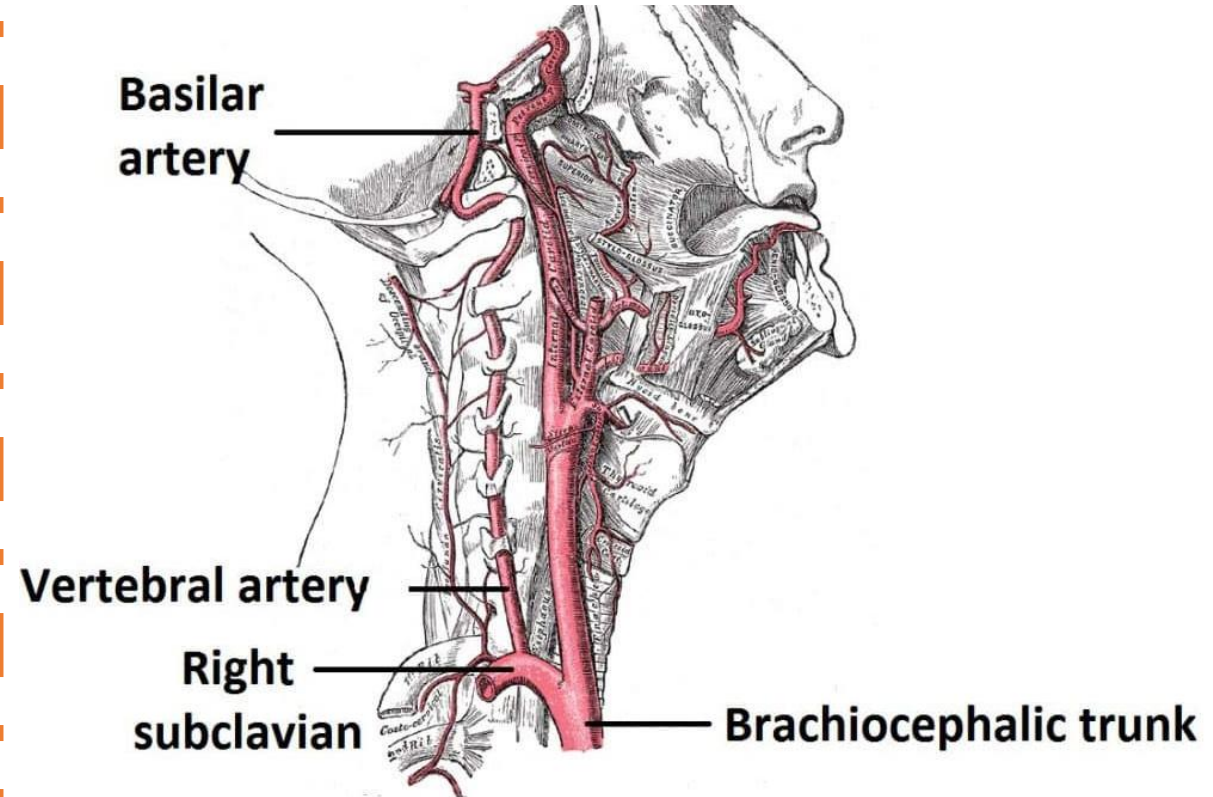
- ✓ The internal carotid arteries do not supply any structures in the neck
- ✓ entering the cranial cavity via the **carotid canal** in the petrous part of the **temporal bone**. Within the cranial cavity, the internal carotid artery supplies:

- The brain
- Eyes
- Forehead



## Vertebral Arteries

- The **vertebral arteries** are paired vessels which arise from the subclavian arteries, just medial to the anterior scalenes.
- They ascend the posterior aspect of the neck, passing through holes in the transverse processes of the cervical vertebrae (known as foramen transversarium).
- They enter the cranium via the **foramen magnum** and converge to form the basilar artery
- basilar artery continues to supply the brain.
- The vertebral arteries do not supply any branches to the neck or other extra-cranial structures.



The venous drainage can be divided into three parts:

- **Venous drainage of the brain and meninges:** Supplied by the dural venous sinuses.
- **Venous drainage of the scalp and face:** Drained by veins synonymous with the arteries of the face and scalp. These empty into the internal and external jugular veins.
- **Venous drainage of the neck:** Carried out by the anterior jugular veins.

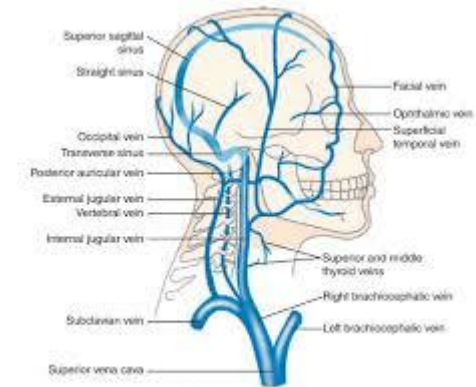
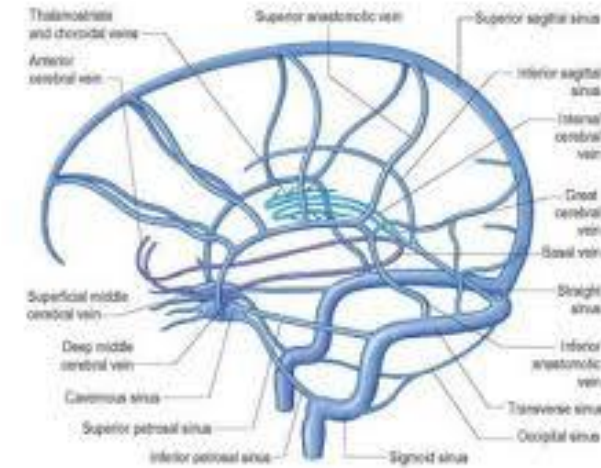
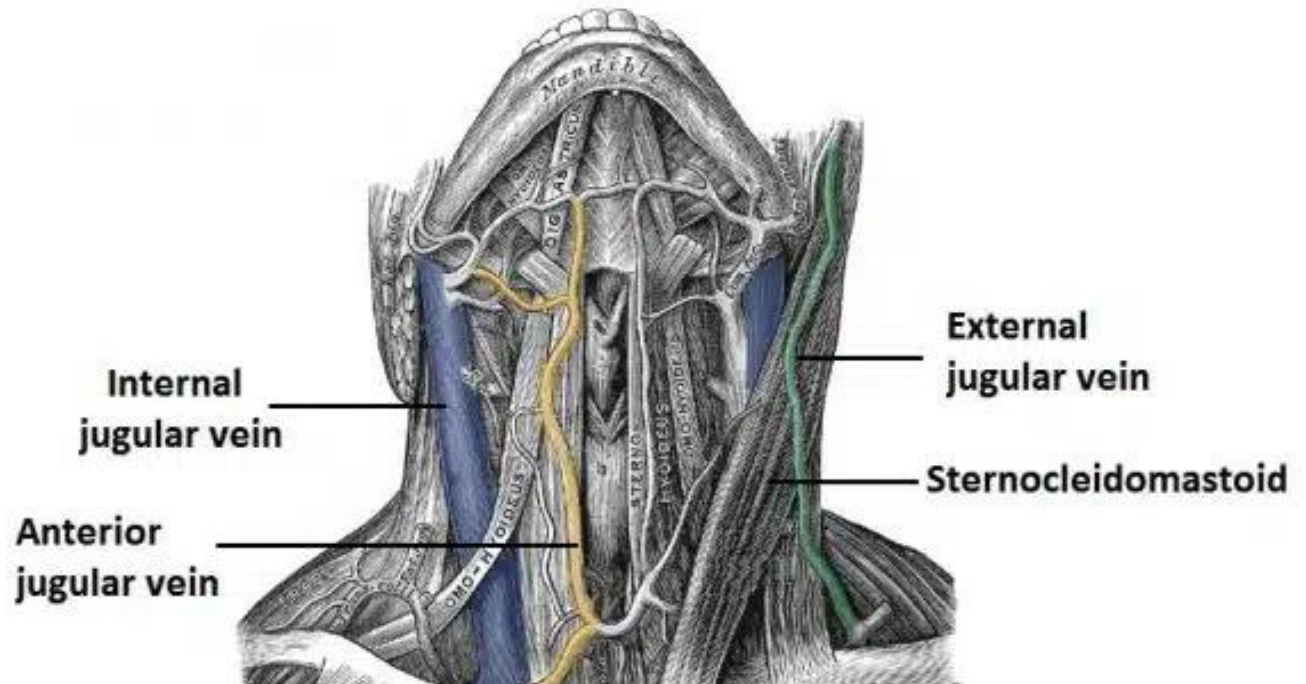


FIGURE 19-15 Head and neck veins.

## Jugular Veins

There are three main jugular veins – external, internal and anterior.

They are ultimately responsible for the venous drainage of the whole head and neck.



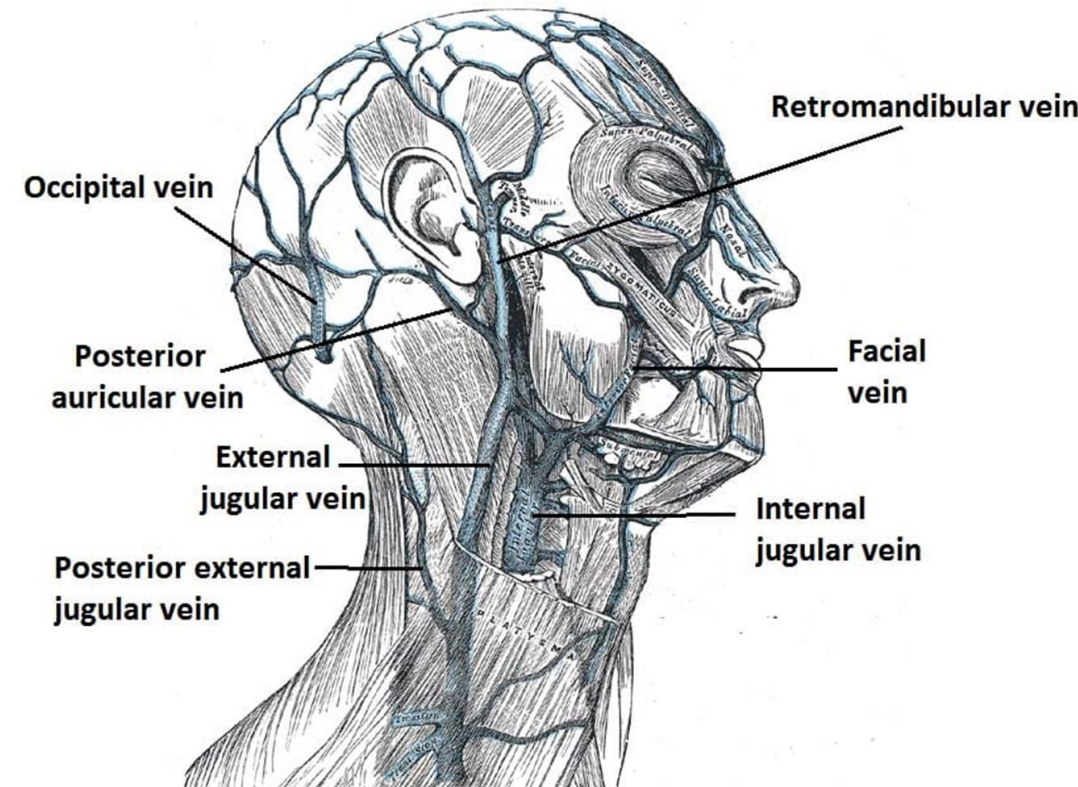
# The external jugular vein

The external jugular vein and its tributaries supply the majority of the **external face**. It is formed by the union of two veins:

- **Posterior auricular vein** – drains the area of scalp superior and posterior to the outer ear.

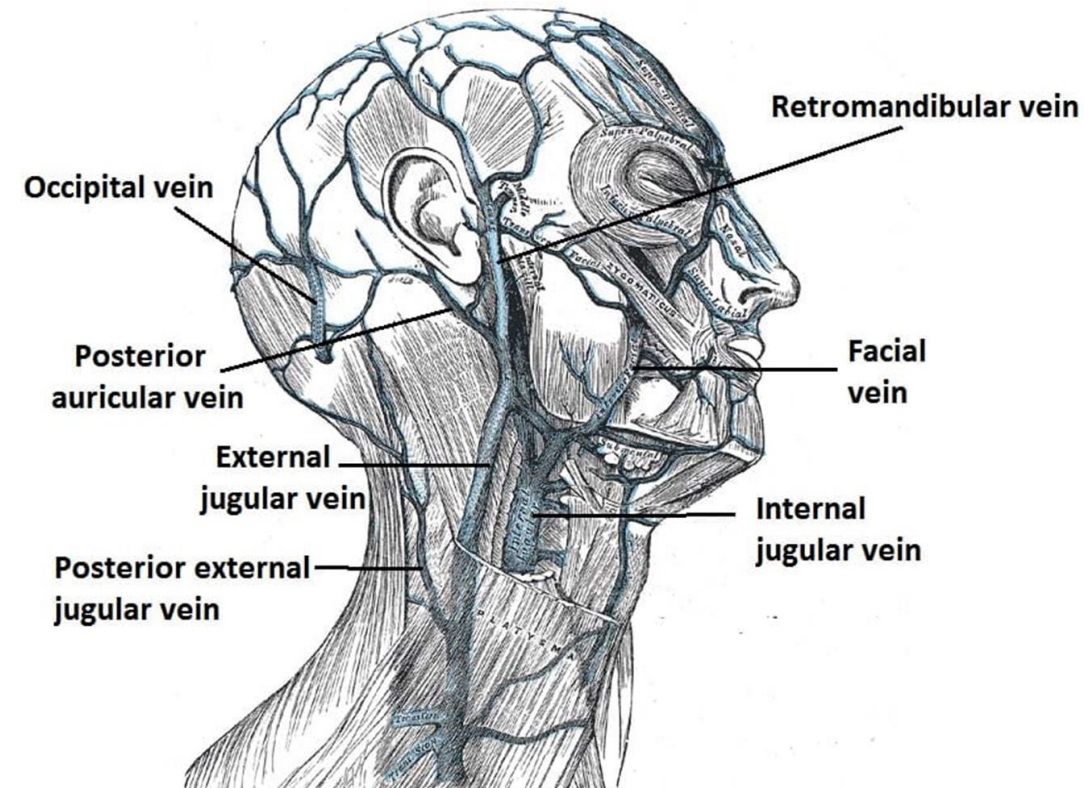
- **Retromandibular vein** (posterior branch) – itself formed by the maxillary and superficial temporal veins, which drain the face.

These two veins combine immediately posterior to the angle of mandible, and inferior to the outer ear, forming the external jugular vein.



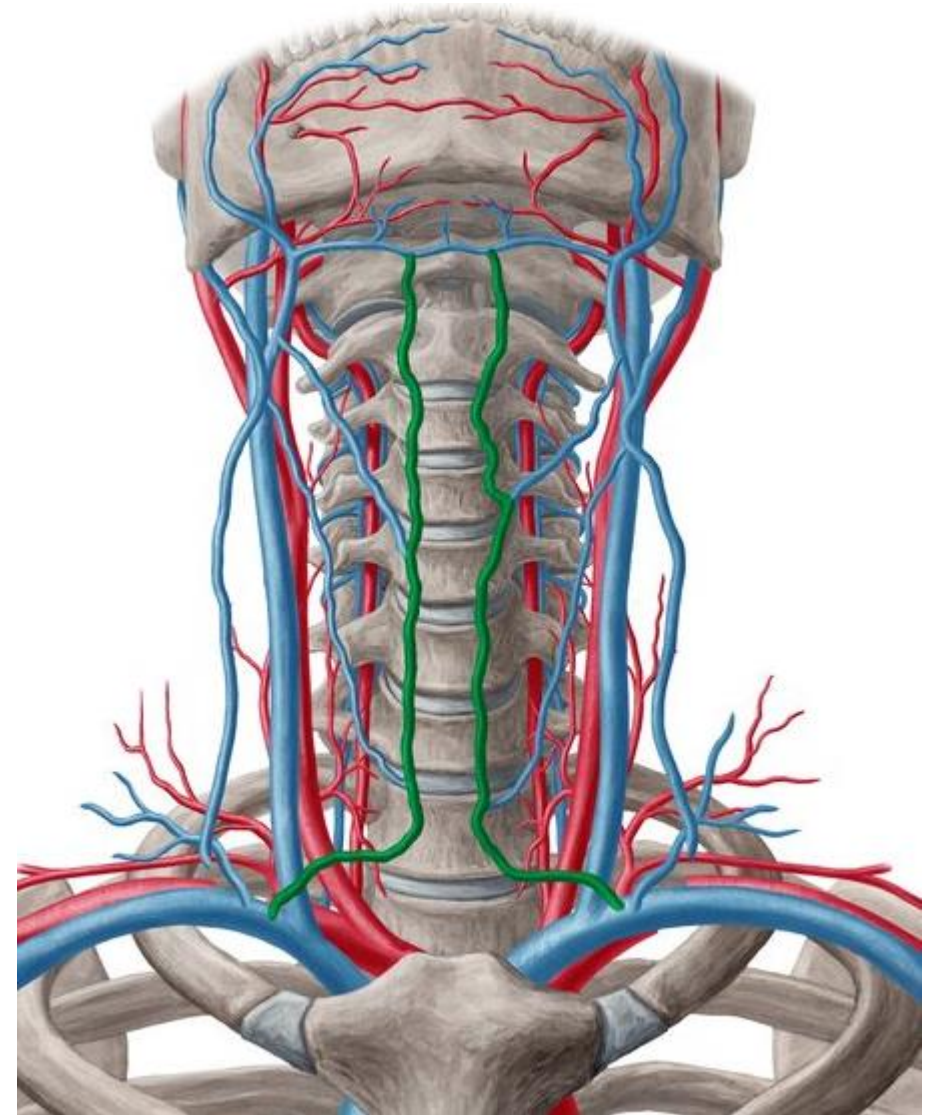
# The external jugular vein

- ✓ In the root of the neck, the vein passes underneath the **clavicle**,
- ✓ It terminates by draining into the **subclavian** vein.
- ✓ the EJV receives tributary veins:
  - ✓ posterior external jugular vein.
  - ✓ transverse cervical vein.
  - ✓ suprascapular vein.



## Anterior Jugular Veins

- The anterior jugular veins vary from person to person.
- They are paired veins, which drain the anterior aspect of the neck.
- Often they will communicate via a jugular venous arch.
- The anterior jugular veins descend down the midline of the neck, emptying into the subclavian vein.



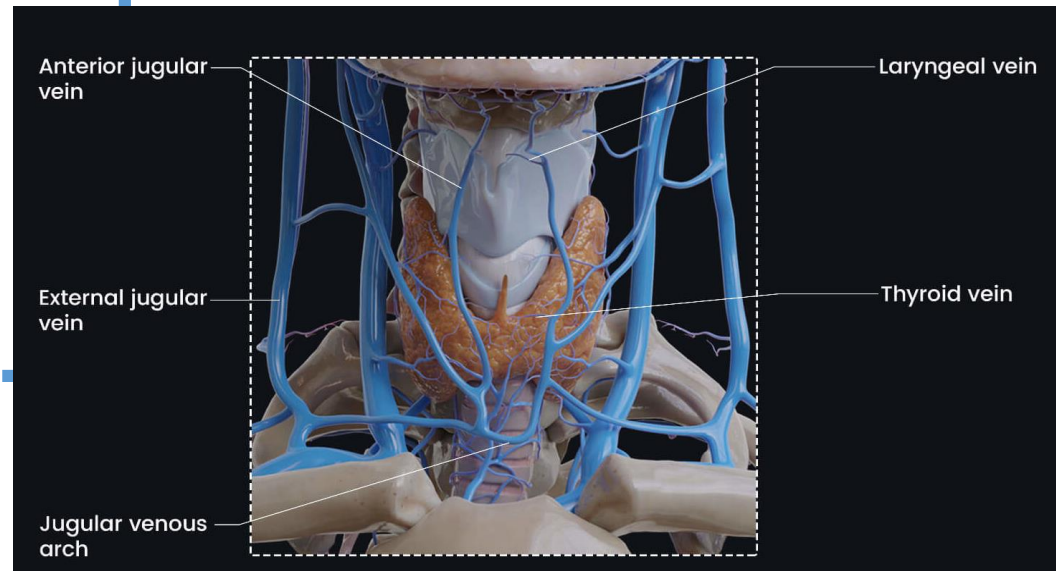


## Anterior Jugular Veins

On its way down the neck, the anterior jugular vein receives

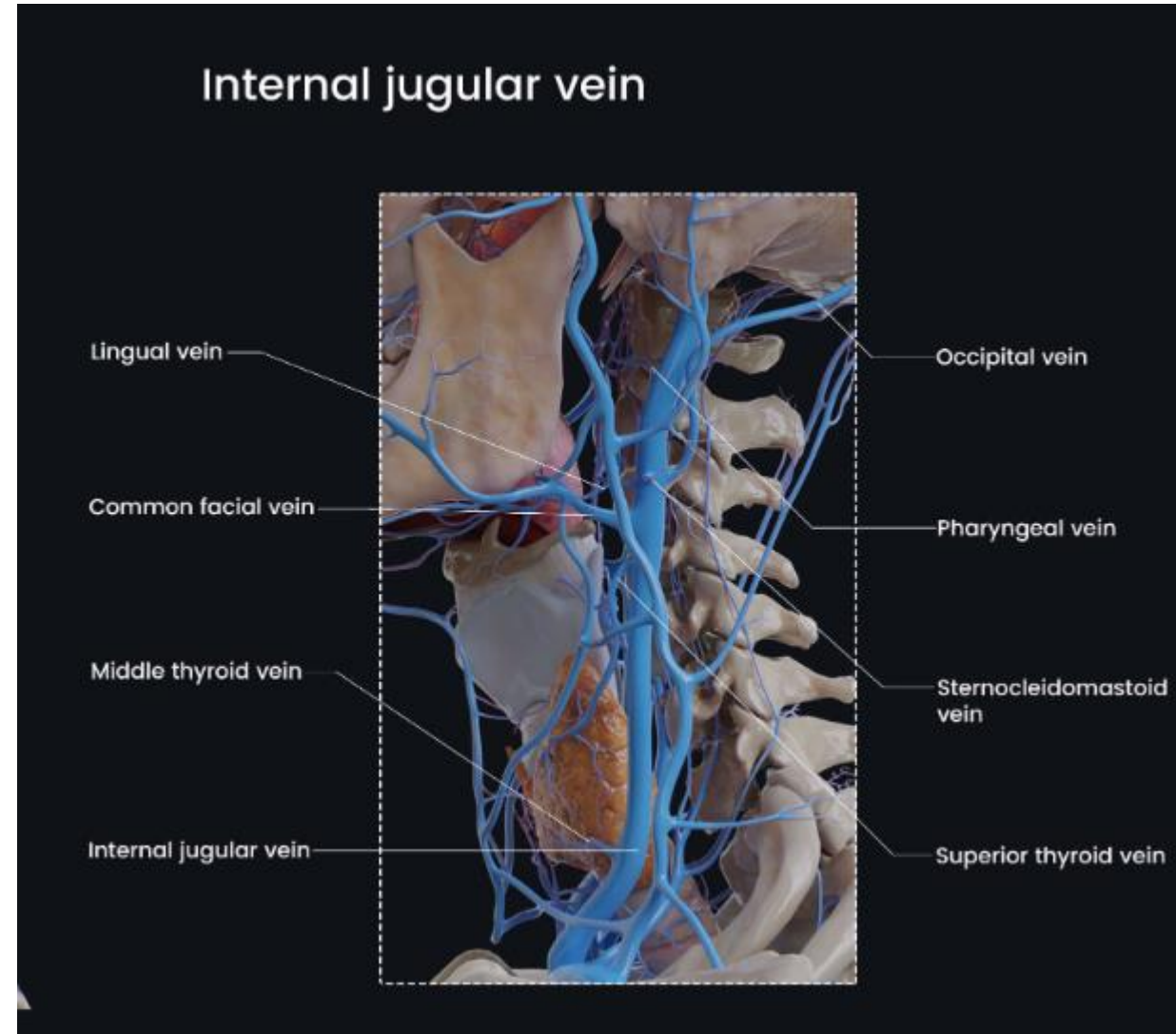
three sets of tributaries:

- ❖ laryngeal veins
- ❖ small thyroid vein
- ❖ inferior thyroid veins.



## The internal jugular vein

- ❖ The internal jugular vein is a blood vessel that arises from the junction of **TWO** intracranial venous sinuses:
  - 1 - The inferior petrosal sinus
  - 2- and the sigmoid sinus.
- ❖ The internal jugular vein collects venous blood from the brain, skull, and superficial parts of the face and neck.



## The internal jugular vein

- ❖ At the level of the sternoclavicular joint, the internal jugular vein unites with the subclavian vein to form the brachiocephalic vein.
- ❖ The internal jugular vein receives several tributaries, including:

Inferior petrosal sinus

Pharyngeal vein

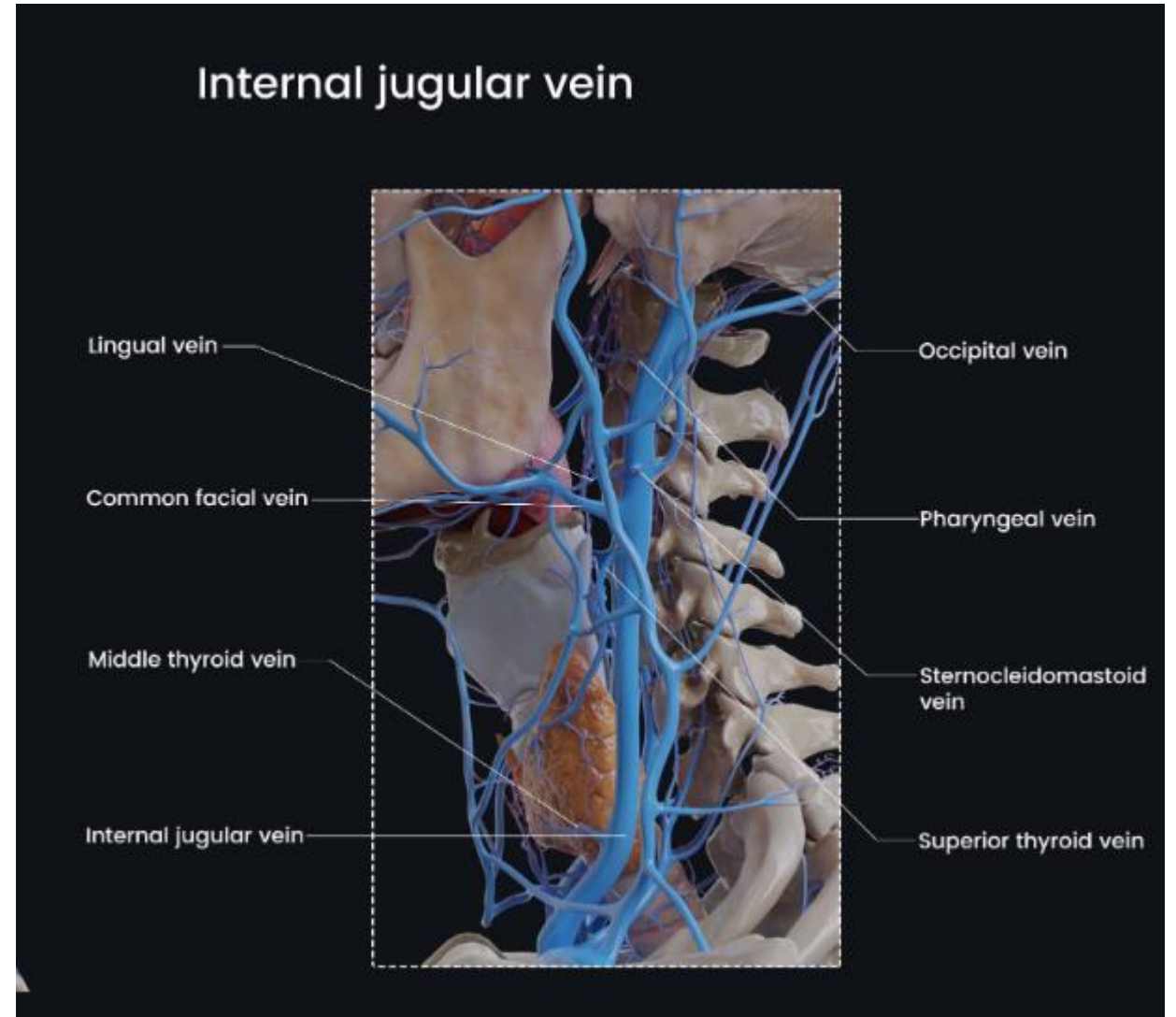
Common facial vein

Lingual vein

Superior thyroid vein

Middle thyroid vein

Occipital vein





زهره الشفاؤل

هون عليك فما في اللوح قد كتبنا  
واللوم يورثك الأحران والتعبنا  
فاسعد بما في يديك اليوم من أمل  
ولا تفكر بماضيك الذي ذهبنا