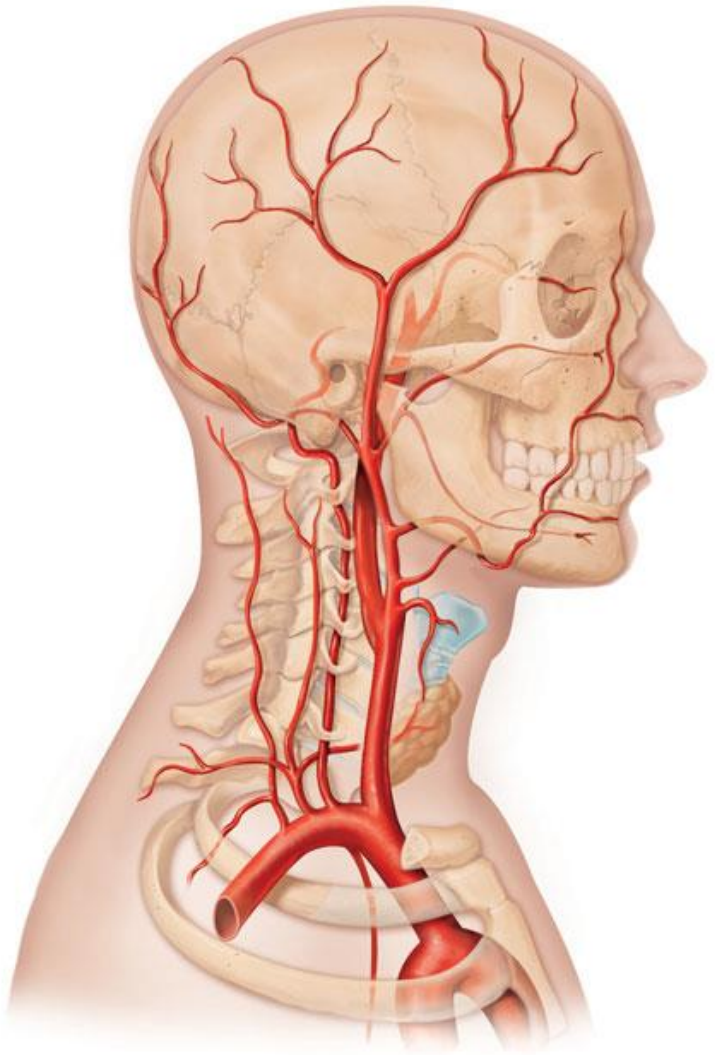
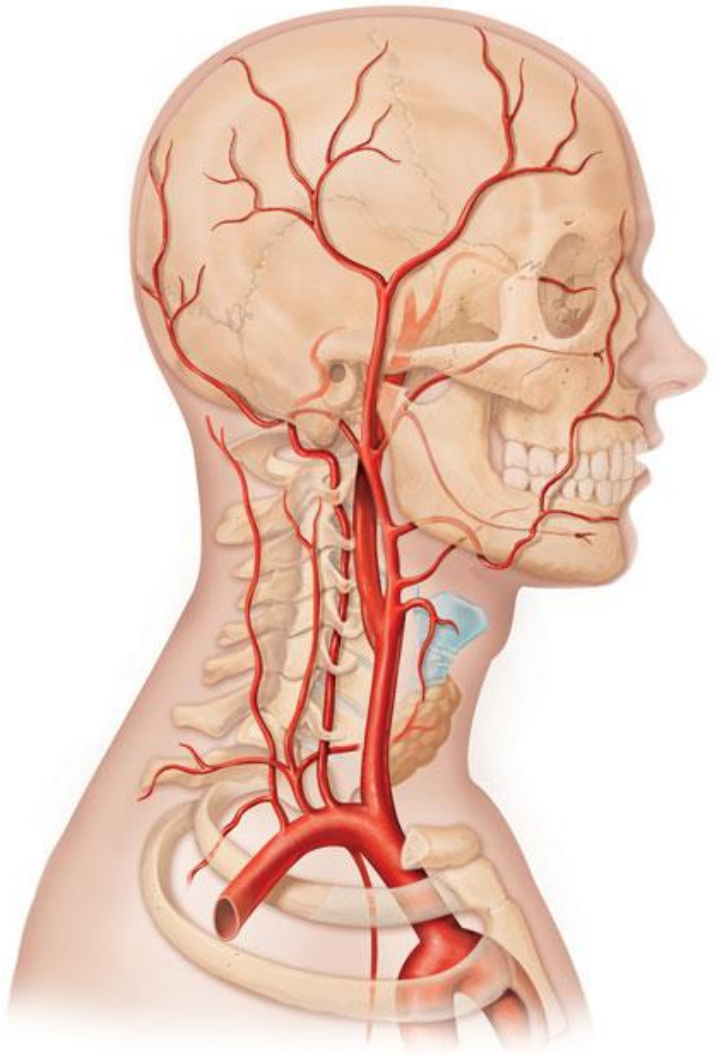
Arteries of the Head and Neck

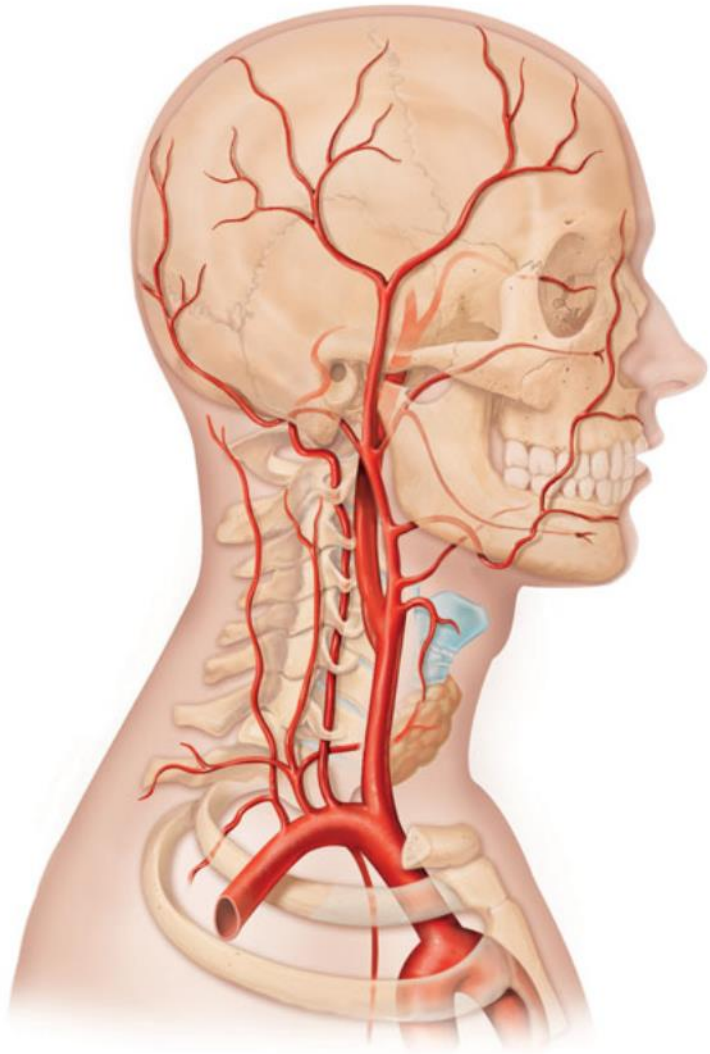
- Four pairs of arteries supply the head and neck:
- **the common carotid arteries** plus three branches from each subclavian artery—the **vertebral artery**, **the thyrocervical trunk**, and the **costocervical trunk**.
- Common Carotid Arteries: Most parts of the head and neck receive their blood from the common carotid arteries
- ascend through the anterior neck just lateral to the trachea.



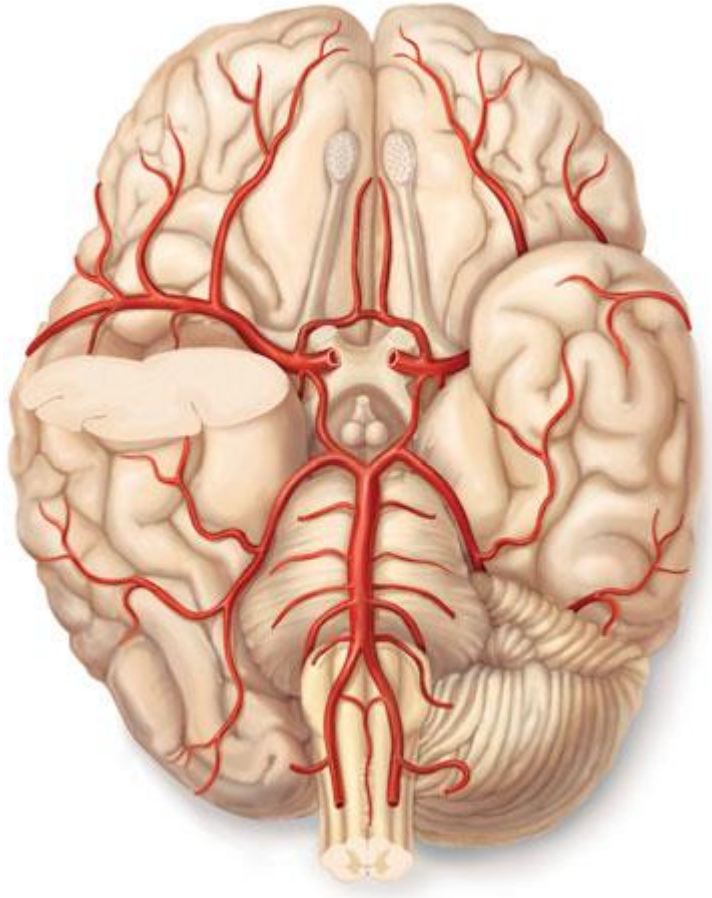
- The common carotid arteries are located in the anterior triangle
- At the superior border of the larynx—the level of the “Adam’s apple”—each common carotid ends by dividing into
- an **external and internal carotid artery**.



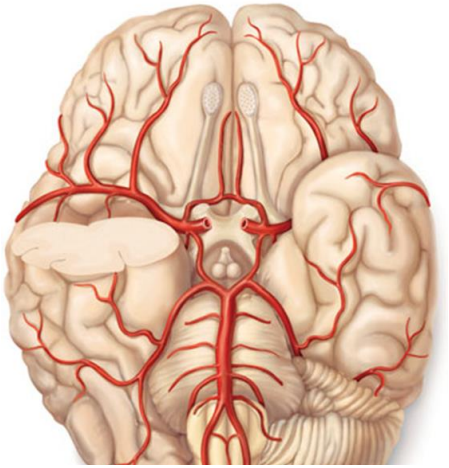
- The external carotid arteries supply most tissues of the head external to the brain and orbit.
- Near the temporomandibular joint, each external carotid ends by splitting
- into the superficial temporal and maxillary arteries.
- The superficial temporal artery ascends just anterior to the ear
- supplies most of the scalp
- Maxillary artery
- Along the way, it sends branches to the upper and lower teeth, the cheeks, nasal cavity, and muscles of mastication.

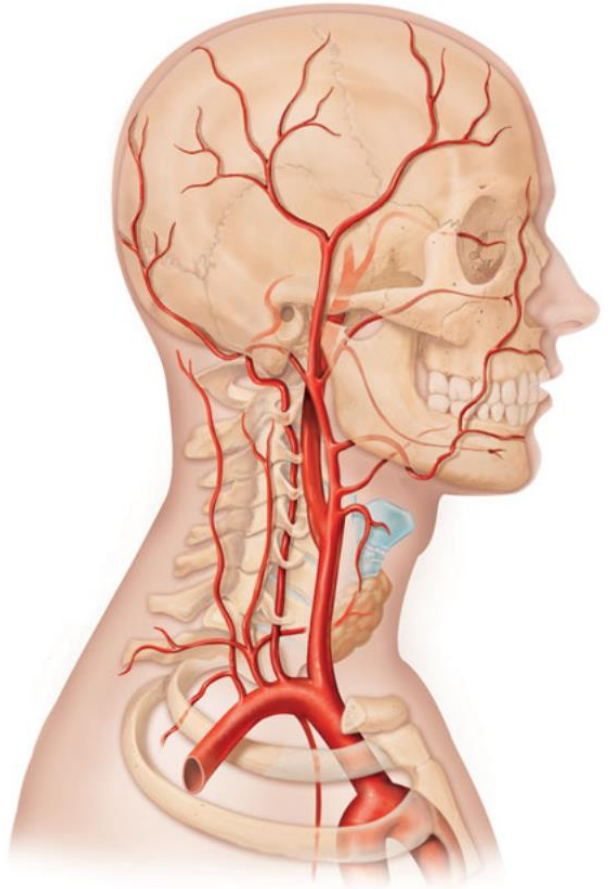


- The internal carotid arteries supply the orbits and most of the cerebrum.
- it gives off the ophthalmic artery to the eye and orbit
- divides into:
- the anterior and middle cerebral arteries



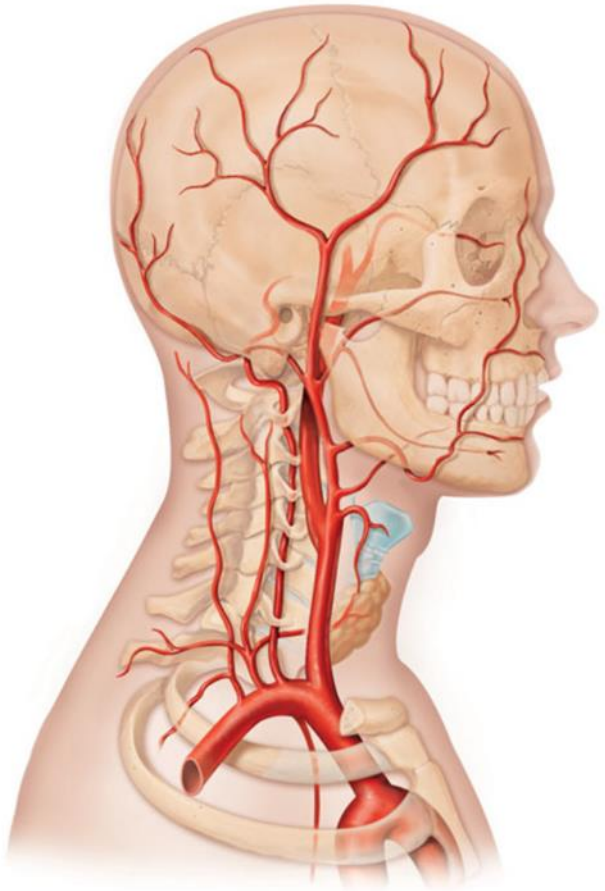
Each anterior cerebral artery anastomoses with its partner
on the opposite side through a short anterior communicating artery and supplies the medial and superior surfaces of the frontal and parietal lobes.
Each middle cerebral artery runs through the lateral fissure of a cerebral hemisphere and supplies the lateral parts of the temporal and
parietal lobes.
Together, the anterior and middle cerebral arteries supply over 80% of the cerebrum; the rest of the cerebrum is supplied by the posterior cerebral artery.

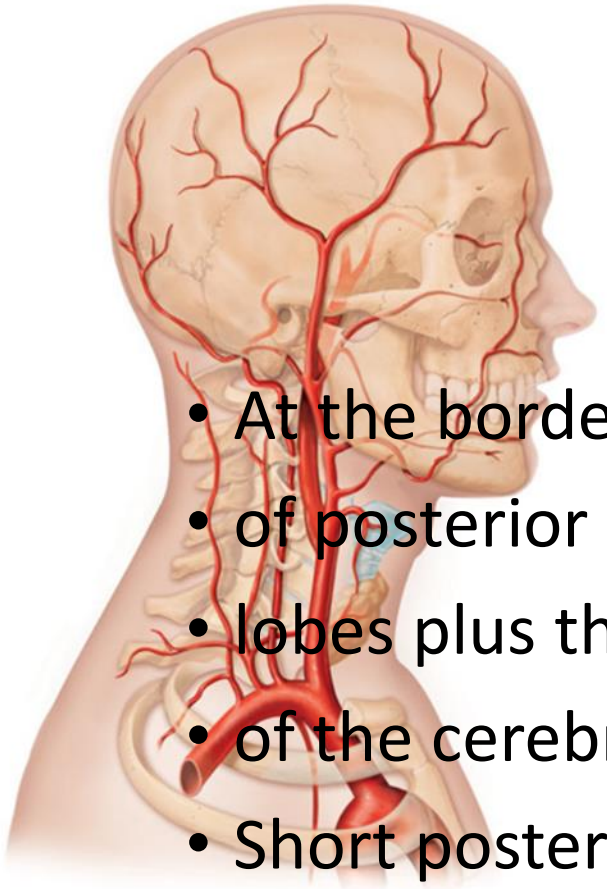




•Vertebral Arteries

- The blood supply to the posterior brain comes from the right and left vertebral arteries, which
- arise from the subclavian arteries
- The vertebral arteries ascend through the foramina
- in the transverse processes of cervical vertebrae C6 to C1
- and enter the skull through the foramen magnum. Along the
- way, they send branches to the vertebrae and cervical spinal
- cord. Within the cranium, the right and left vertebral arteries
- join to form the unpaired basilar artery
- which ascends along the ventral midline of the brain

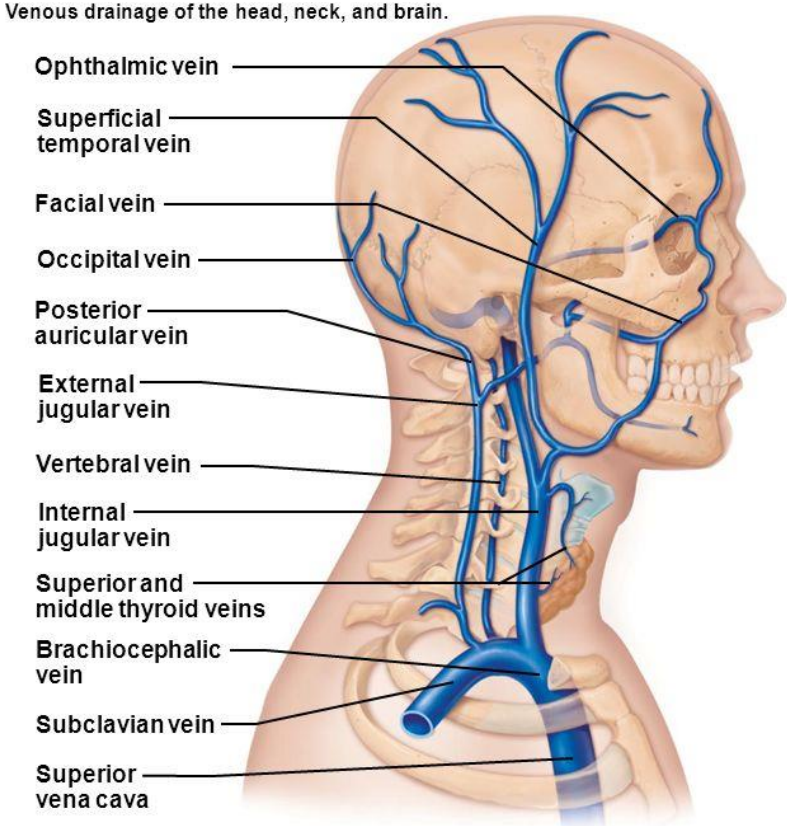




- At the border of the pons and midbrain, it divides into a pair
- of posterior cerebral arteries, which supply the occipital
- lobes plus the inferior and medial parts of the temporal lobes
- of the cerebral hemispheres.
- Short posterior communicating arteries connect the
- posterior cerebral arteries to the middle cerebral arteries anteriorly.
- The two posterior communicating arteries and the single
- anterior communicating artery complete the formation of an

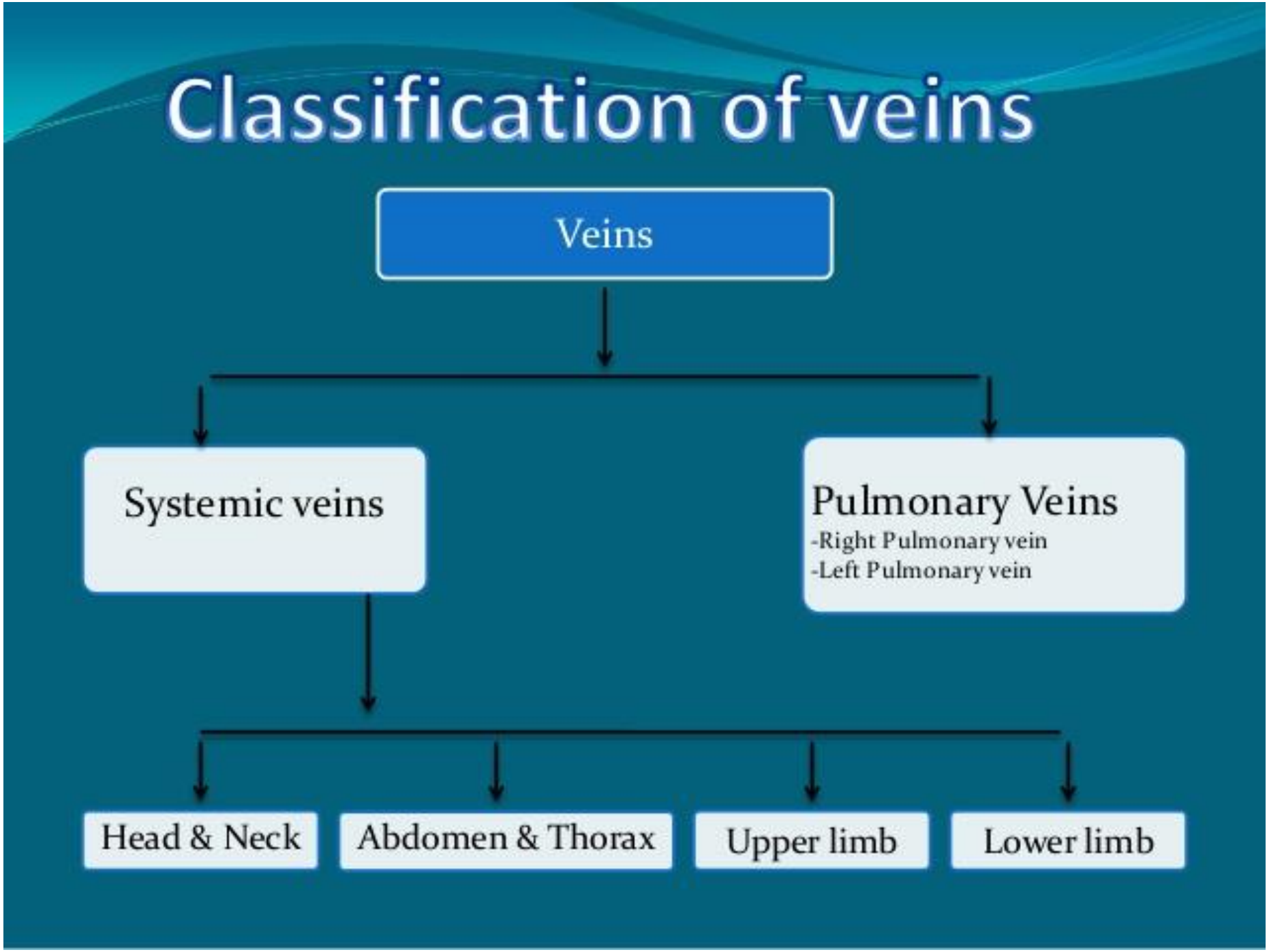
- arterial anastomosis called the circle of Willis. This circle forms a loop around
- this anastomosis provides alternate routes for blood to
- reach brain areas that are affected if either a carotid or vertebral
- artery becomes occluded.

Figure 19.27b Venous drainage of the head, neck, and brain.



(b) Veins of the head and neck, right superficial aspect

Classification of veins



Veins of the Head and neck

- Venous drainage from the face is entirely superficial
- All the venous drainage from the head and neck terminate in the ***internal jugular vein*** which join the *subclavian vein* to form the brachiocephalic vein behind the medial end of the clavicle
- Two brachiocephalic veins unite to form superior vena cava

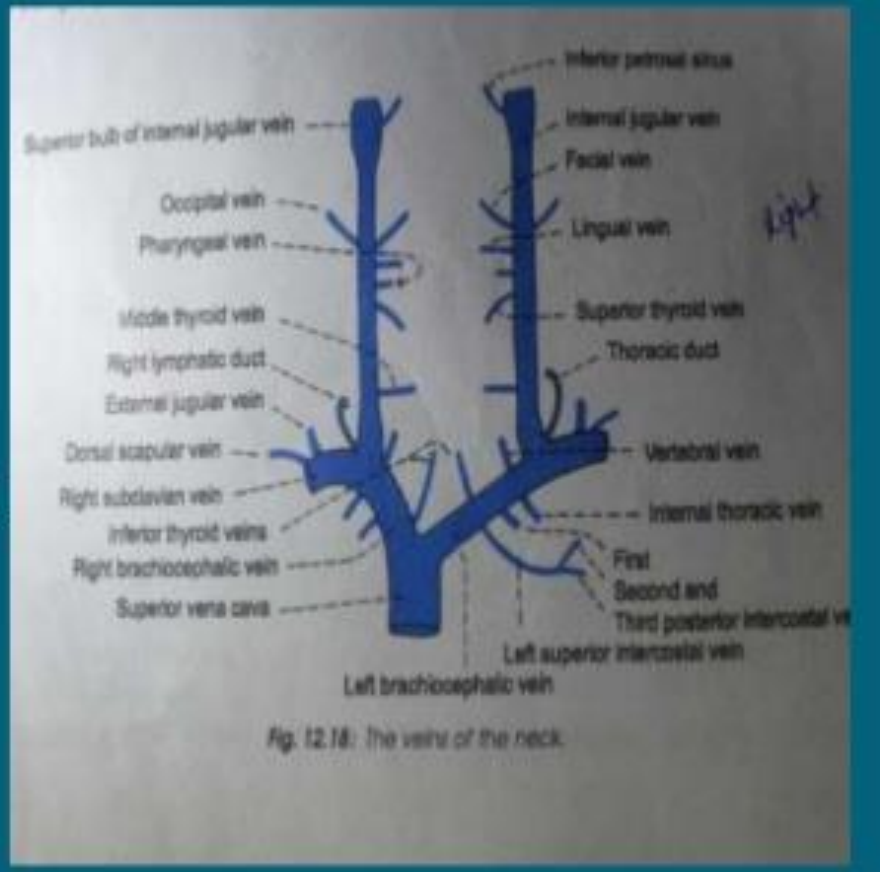
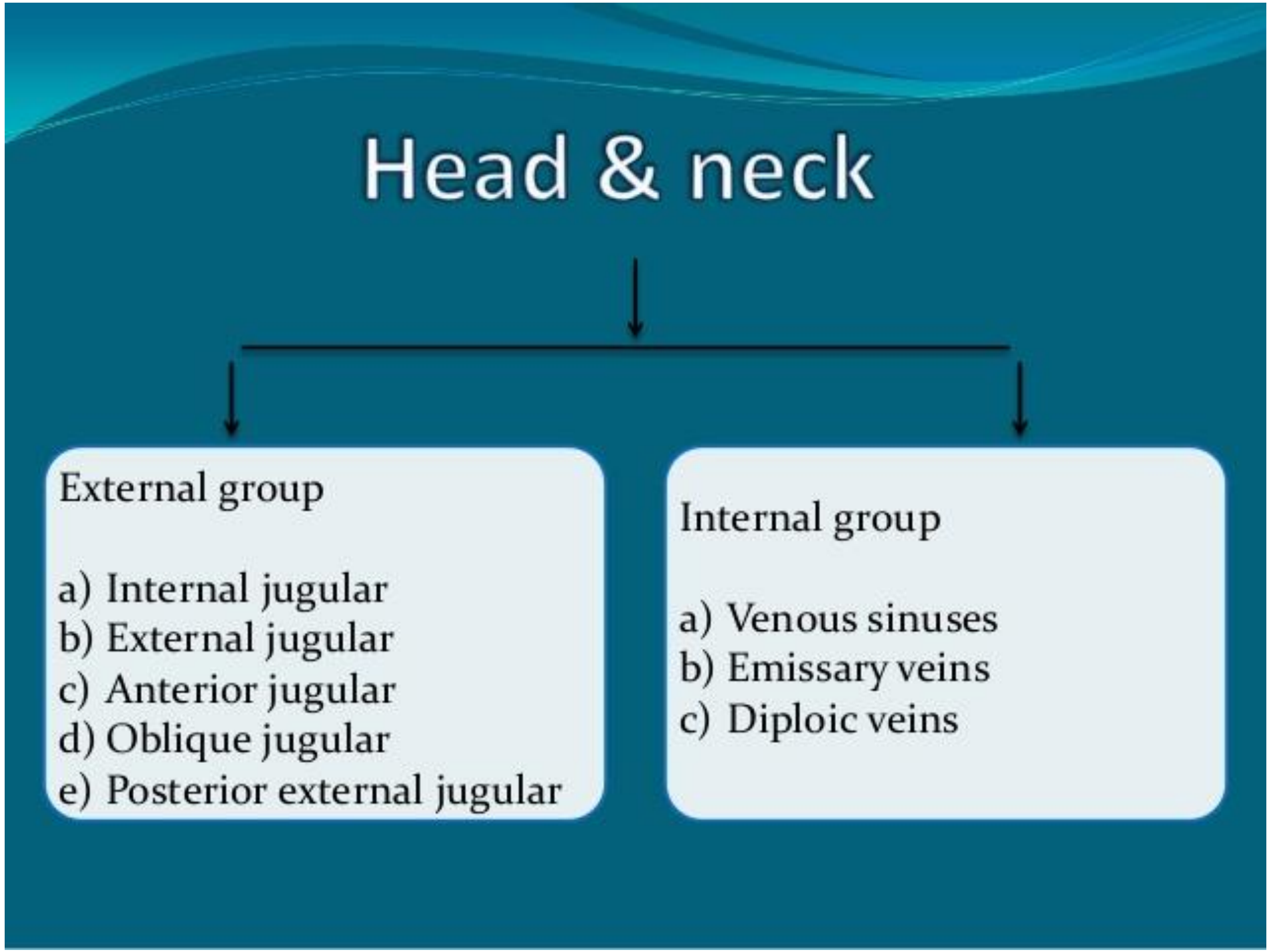
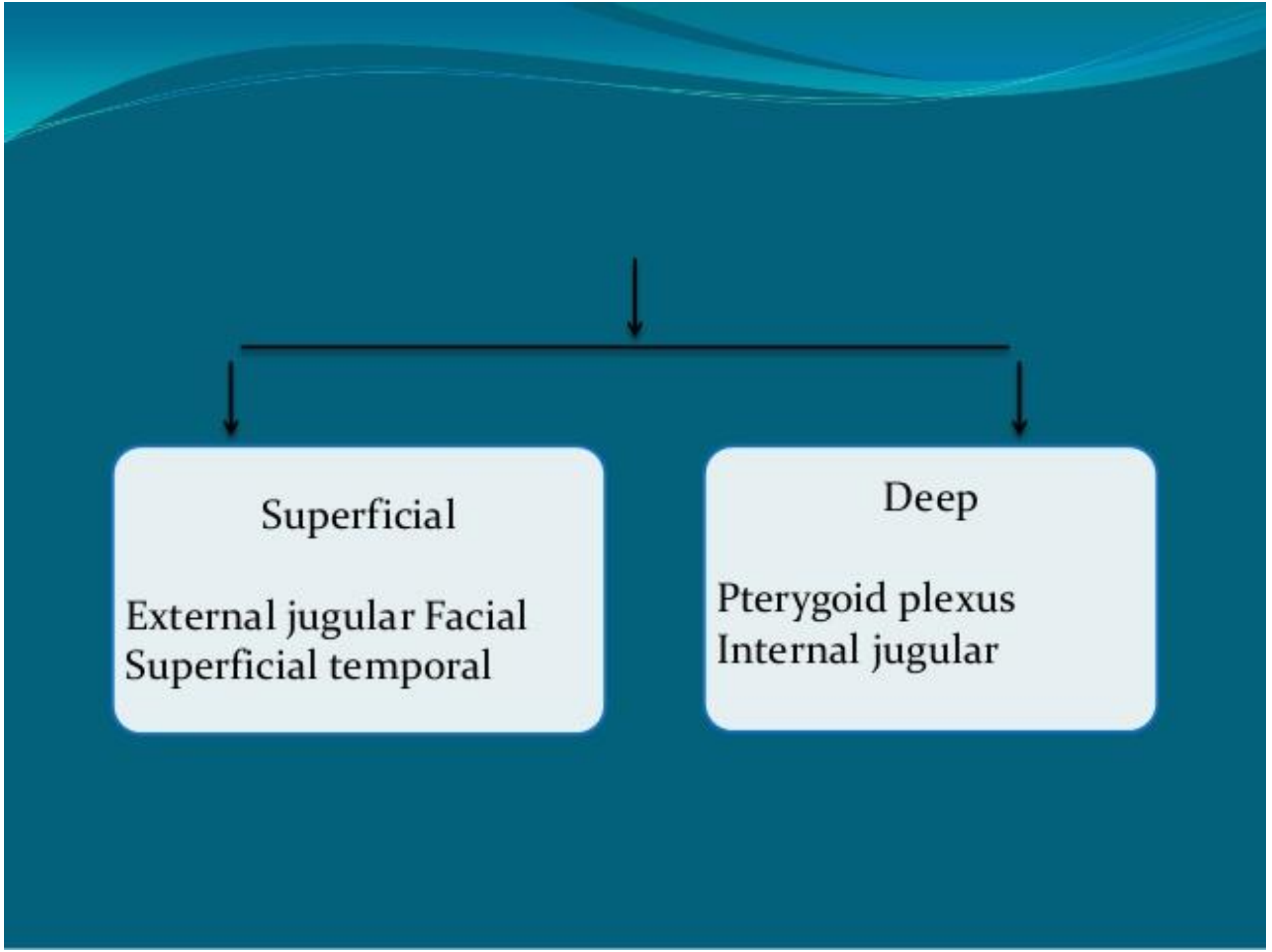


Fig. 12.18: The veins of the neck

Head & neck


External group
a) Internal jugular
b) External jugular
c) Anterior jugular
d) Oblique jugular
e) Posterior external jugular
Internal group
a) Venous sinuses
b) Emissary veins
c) Diploic veins


Superficial
External jugular Facial
Superficial temporal
Deep
Pterygoid plexus
Internal jugular

Internal jugular veins