

Lecture 11 – The Head and Neck

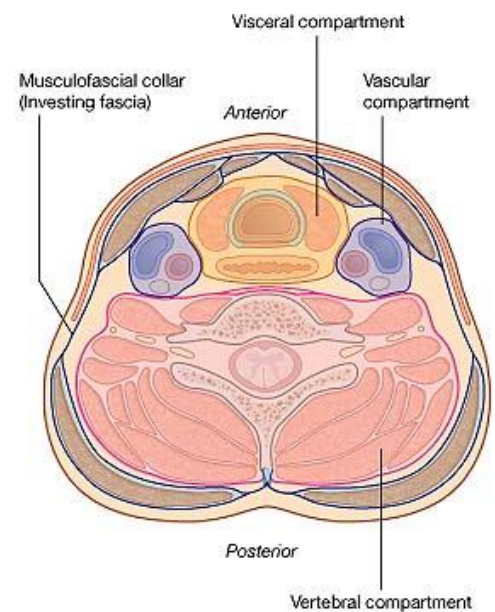
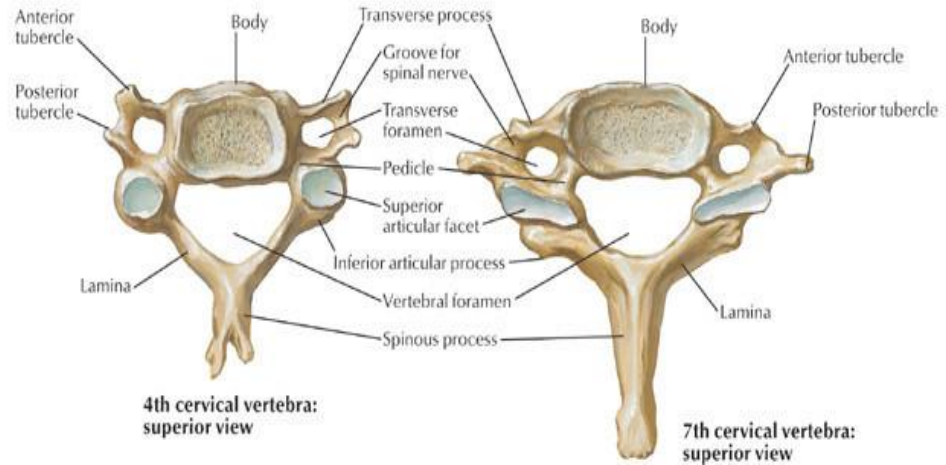
The Neck

Boundaries of the Neck

- Anterior boundary – lower border of mandible → manubrium
- Posterior boundary – superior nuchal line → intervertebral disc of C7/T1

Contents of the Neck

- Cervical vertebrae C1-C7
- Common cervical vertebrae:
 - C3-C6
 - Small vertebral body
 - Transverse foramen and bifid spinous process
- Irregular cervical vertebrae:
 - C1 – atlas; ring-like bone with articular facets for the occipital condyle on the underside of the occipital bone
 - C2 – Axis; contains the dens/odontoid process with acts as a pivot for rotation
 - C7 – has a vertebral prominence similar to that of thoracic vertebrae
- There are 4 compartments within the neck - 1 visceral, 1 vertebral and 2 vascular



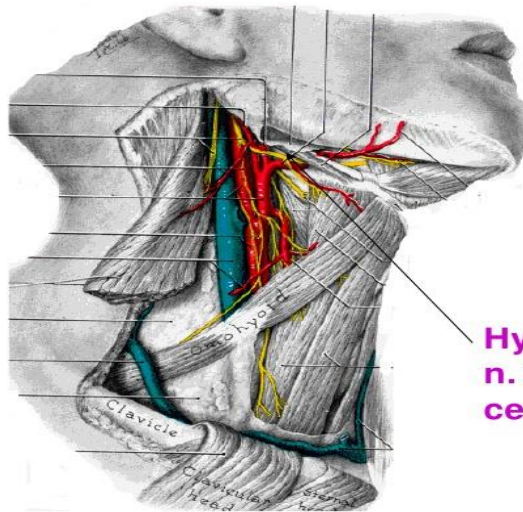
Triangles of the Neck

- Anterior
 - Superior border = inferior border of the mandible
 - Medial border = midsagittal line down the body
 - Lateral border = medial border of sternocleidomastoid
 - Contents:
 - Hyoid muscles – supra/infra/omohyoid (omohyoid present in both)
 - Platysma

- Carotid artery (internal carotid and common carotid)
- Internal jugular vein
- Thyroid gland
- Cranial nerves 5, 9, **10**, 11, 12

2. CONTENTS OF ANTERIOR TRIANGLE OF NECK

In Carotid sheath:
Int. and Common Carotid A.,
Int. Jug. V.,
Vagus N.
Follow dissection to all branches of Ext. carotid

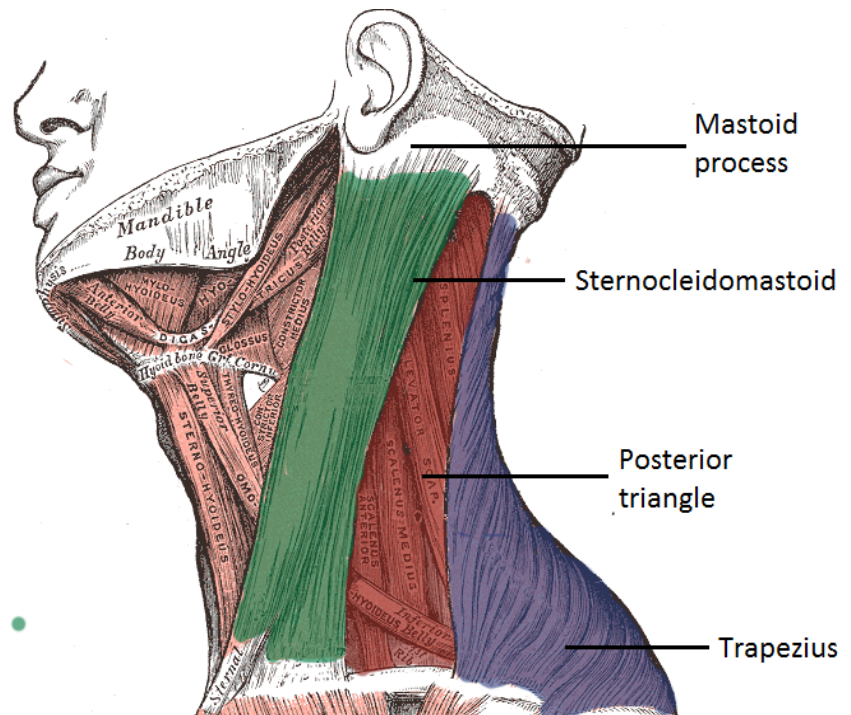


- cut through sternocleidomastoid 2" above sternum

Hypoglossal n. XII & ansa cervicalis

- Posterior
 - Borders = between sternocleidomastoid, trapezius and clavicle
 - Contents:
 - Omohyoid (present in both triangles)
 - Sternocleidomastoid

- Trapezius
- Splenius capitis
- Levator scapula
- Scalenes
- External jugular vein
- Accessory nerve
- Brachial plexus



Hyoid Bone

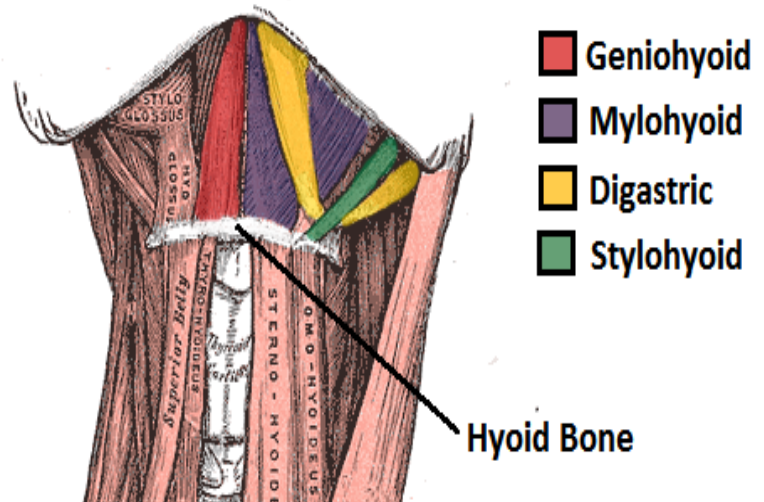
Features of the Hyoid Bone

- Doesn't articulate with other bones
- Has multiple attachment points for structures in the head and neck

Muscle Attachments of the Hyoid

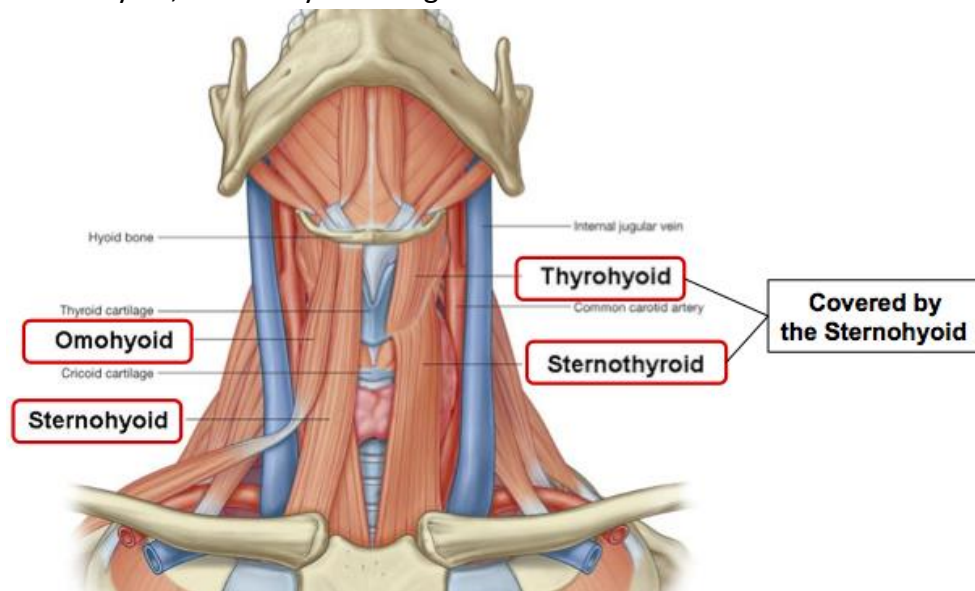
- Platysma
 - Innervated by facial nerve
- Suprahyoid Muscles:
 - Digastric
 - Anterior belly – innervated by V3 (mandibular branch of trigeminal nerve) – lowers mandible and raises hyoid
 - Posterior belly – innervated by CN 7 – pulls hyoid superiorly and posteriorly
 - Stylohyoid
 - Innervated by CN 7 – pulls the hyoid posteriorly

- Mylohyoid
 - Innervated by V3 – elevates hyoid
 - Forms the floor of the oral cavity with Geniohyoid
- Geniohyoid
 - Innervated by C1 branch via hypoglossal
 - When mandible is fixed = moves hyoid anteriorly
 - When hyoid is fixed = moves mandible inferiorly



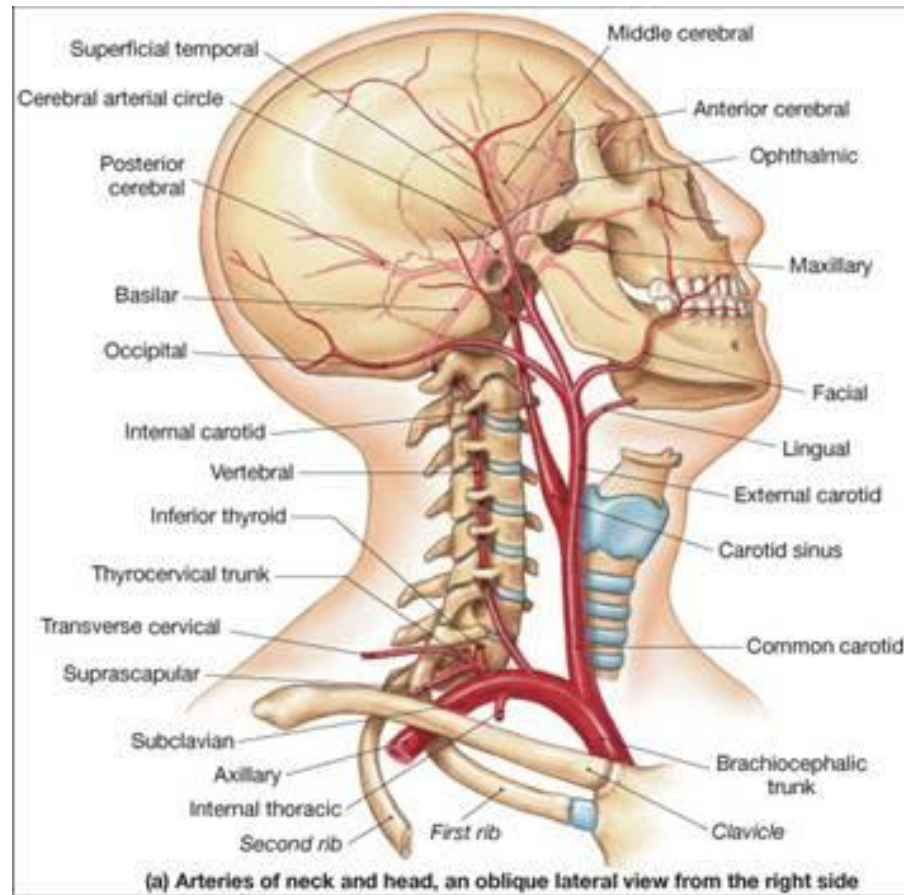
- Infrahyoid Muscles:

- Sternohyoid
 - Innervated by C1-C3 via ansa cervicalis
 - Depresses hyoid after swallowing
- Omohyoid
 - C1-C3 via ansa cervicalis
 - Depresses and fixes hyoid
- Thyrohyoid
 - C1 via hypoglossal
 - Depresses and fixes hyoid, raises larynx during swallow
- Sternothyroid
 - C1-C3 via ansa cervicalis
 - Draws larynx down

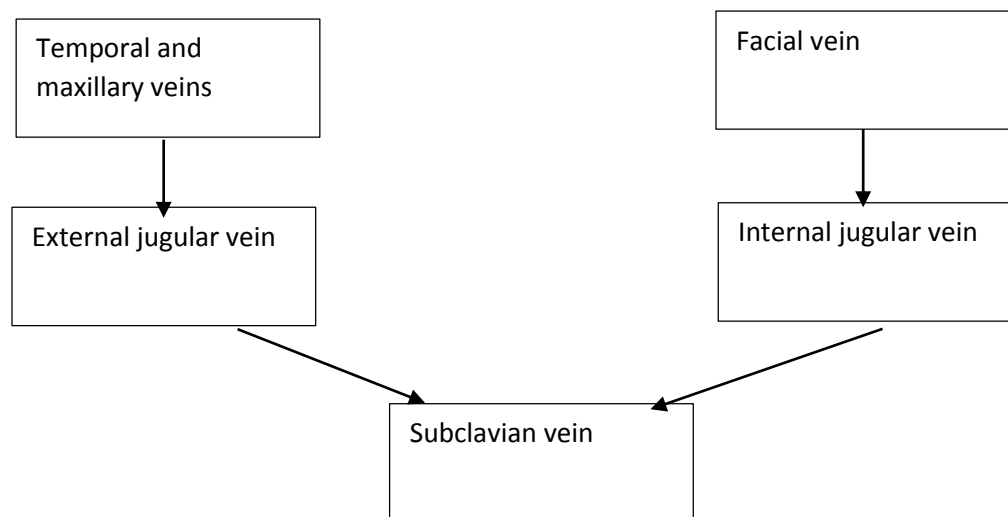


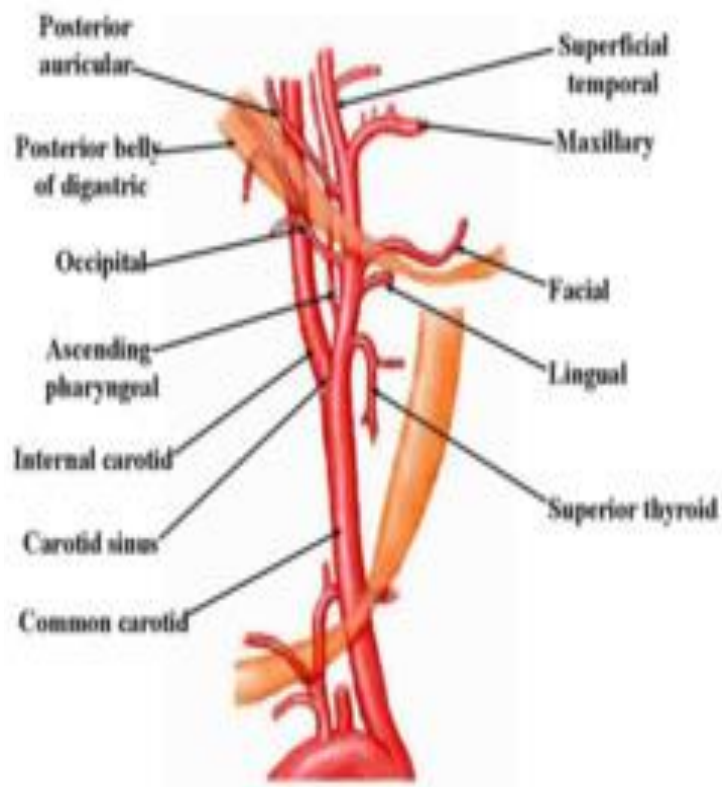
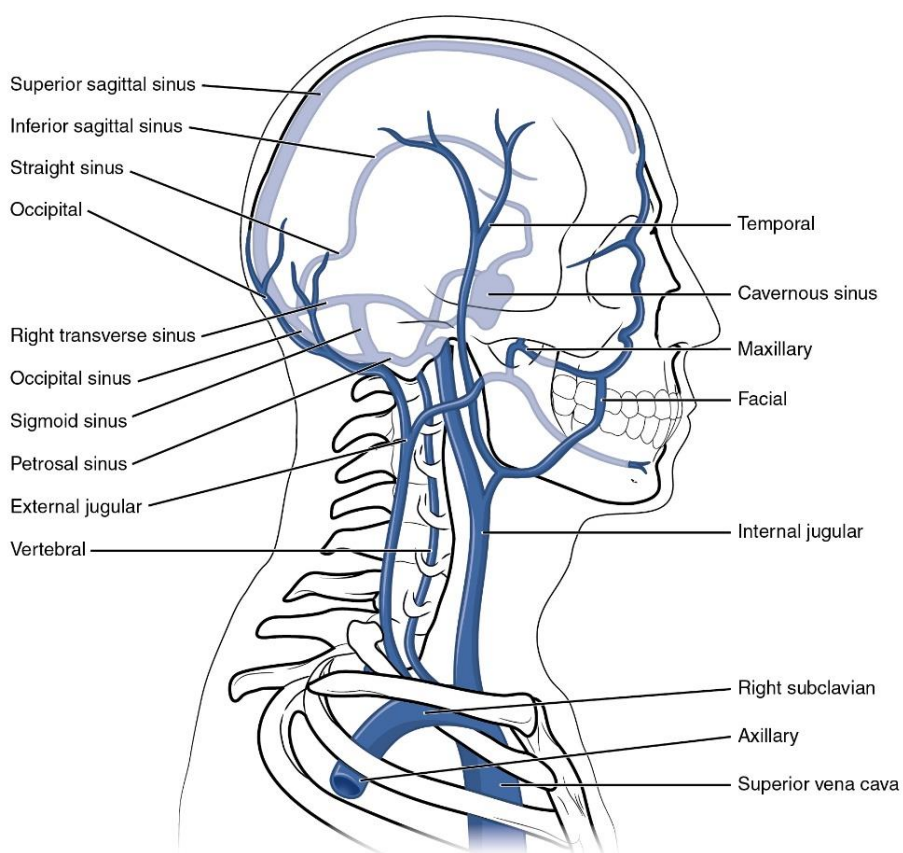
Blood Supply of the Neck

- Vascular compartment is separated by a fascial layer known as the carotid sheath
- The neck is supplied by the carotid arteries (mainly the external carotid artery) and their branches
- the branches of the external carotid artery are:
 - lingual
 - facial
 - occipital
 - posterior auricular
 - maxillary
 - superficial temporal
 - superior thyroid
 - ascending pharyngeal
- the right common carotid artery arises as a terminal branch of the brachiocephalic artery
- the left common carotid arises directly from the arch of aorta as a second branch



Venous Drainage of the Neck





Innervation of the Head and Neck

Nerve	Entry Point	Innervation
CN 7 (facial)	Stylomastoid foramen	<ul style="list-style-type: none"> Posterior belly of digastric (motor) Stylohyoid (motor)
CN 9 (glossopharyngeal)	Jugular foramen	<ul style="list-style-type: none"> Stylopharyngeus (motor) Carotid sinus (sensory) Pharynx (sensory)
CN 10 (vagus)	Jugular foramen – contained within the carotid sheath	<ul style="list-style-type: none"> Pharynx (motor) Larynx (motor) Carotid sinus (sensory)
CN 11 (accessory)	Jugular foramen	<ul style="list-style-type: none"> Sternocleidomastoid (motor) Trapezius (motor)
CN 12 (hypoglossal)	Hypoglossal canal	<ul style="list-style-type: none"> Tongue muscles (except phalatoglossus)