# M2 Session 1: Palpable Anatomy & Thoracic Cavity

## Part 1: Thorax

### 1.1 Thoracic Wall

*Which rib is found at the level of the sternal angle?*

- Second rib

### 1.2 Intercostal Space

*In relation to superior and inferior ribs, where does one find the neurovascular bundle within the intercostal space?*

- Just below the rib

*What is the significance of the 2nd and 5th intercostal spaces?*

- Aortic and pulmonic S2 heart sounds -> 2nd space
- Apex of heart -> 5th space

### 1.3 Superior Mediastinum

*Where is the vagus nerve found in relation to these major blood vessels?*

- Within the carotid sheath and anterior to the subclavian and aortic vessels

### 1.4 Heart

*Which coronary artery typically gives off SA and AV nodal brs?*

- Most often both are from the right coronary artery (RCA)

### 1.5 Lungs

*What is the difference between the hilum and root of the lung?*

- The hilum is the region of the lung which is occupied by root structures (airway, vessels, etc.)

### 1.6 Pleura and Pericardium

*Describe the surface landmarks used to access the pericardial sac from externally.*

- Insert needle between xiphoid and ribcage or lateral to the apex beat within $5^{th}$ , $6^{th}$, or $7^{th}$ intercostal space

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## Part 2: Inferior Neck

### 2.1 First Rib

*What is the relationship between the anterior scalene muscle, the brachial plexus, the subclavian artery, and the subclavian vein?*

- The brachial plexus and subclavian artery are posterior to the anterior scalene muscle and the subclavian vein is anterior to the anterior scalene muscle.

### 2.2 Carotid Sheath

*Where do the lymph nodes of the deep cervical chain drain?*

- Into the right lymphatic duct on the right and the thoracic duct on the left

*How might the clinician use palpable landmarks to find and assess these nodes?*

- These nodes are found within the carotid sheath just deep to the SCM

### 2.3 Larynx & Thyroid Gland

*Describe how you would use palpable landmarks of the anterior neck in order to perform an emergency airway.*

- Palpate/locate the thyroid cartilage and cricoid cartilage and then locate the incision location within the median cricothyroid ligament between these two cartilaginous structures

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## Part 3: Superior Neck

### 3.2 Superficial Fascia

*What is the SMAS (superficial muscular aponeurotic system) layer?*

- The subcutaneous layer of the neck and face which contains connective tissue and the muscles of facial expression

### 3.3 Reflect Platysma Muscle

*Which nerve innervates platysma m. efferently?*

- Cervical branch of facial nerve (CN VII)

### 3.4 Submandibular Triangle

*Which branch of which the cranial nerve brings parasympathetic innervation to the submandibular gland?*

- Chorda tympani n. (CN VII)

### 3.5 External Carotid Artery

*Diagram the branches of the external carotid a.*

- Superior thyroid, ascending pharyngeal, lingual, facial, occipital, posterior auricular, maxillary, superficial temporal aa.

### 3.6 Hypoglossal Nerve

*What muscle acts as the roof of the submandibular triangle as well as the floor of the mouth?*

- Mylohyoid m.

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## Part 4: Face

### 4.1 Osteology

*Which nerve branches pass through these openings? What do they innervate?*

- Supra-orbital notch -> CN $V_1$ -> sensation from upper forehead
- Infra-orbital notch -> CN $V_2$ -> sensation from midface (lower eyelid to upper lip)
- Mental foramen -> CN $V_3$ -> sensation from lower face (lower lip to base of mandible)
- Stylomastoid foramen -> CN VII -> motor to muscles of facial expression

### 4.2 Muscles of Facial Expression

*What are the five branches of facial n. that innervate the mm. of facial expression?*

- Temporal, Zygomatic, Buccal, Marginal Mandibular, Cervical

### 4.3 Superficial Temporal Vasculature

*The superficial temporal artery is a branch of which artery?*

- External carotid a.

### 4.4 Buccinator Muscle

*Near which tooth does the parotid duct enter the oral cavity?*

- Maxillary 2nd molar (within oral vestibular space)

### 4.5 Facial Nerve Trunk & Divisions

*Which division of the facial n. receives bilateral projections from the cortex and what is the clinical significance in Bell's (facial n.) palsy?*

- The temporofacial division receives bilateral projections which is important clinically in that UMN (upper motor neuron) lesions such as a stroke will only affect the lower face while LMN (lower motor neuron) lesions such as Bell's (facial n.) palsy will affect both the upper and lower face (ipsilaterally).

### 4.6 Retromandibular Vein

*What do the posterior auricular vein and the posterior division of the retromandibular vein unite to form?*

- External jugular vein

### 4.7 Termination of External Carotid Artery

*List the neurovascular structures that course through the parotid gland.*

- Facial nerve, auriculotemporal nerve, retromandibular vein, external carotid artery, intraparotid lymph nodes

### 4.9 Cutaneous Innervation of Face

*Diagram the cutaneous innervation of the face.*

- Upper eyelids, bridge of the nose, and forehead -> CN $V_1$
- Midface (lower eyelids to upper lip) -> CN $V_2$
- Lower face (lower lips to base of the mandible) -> CN $V_3$