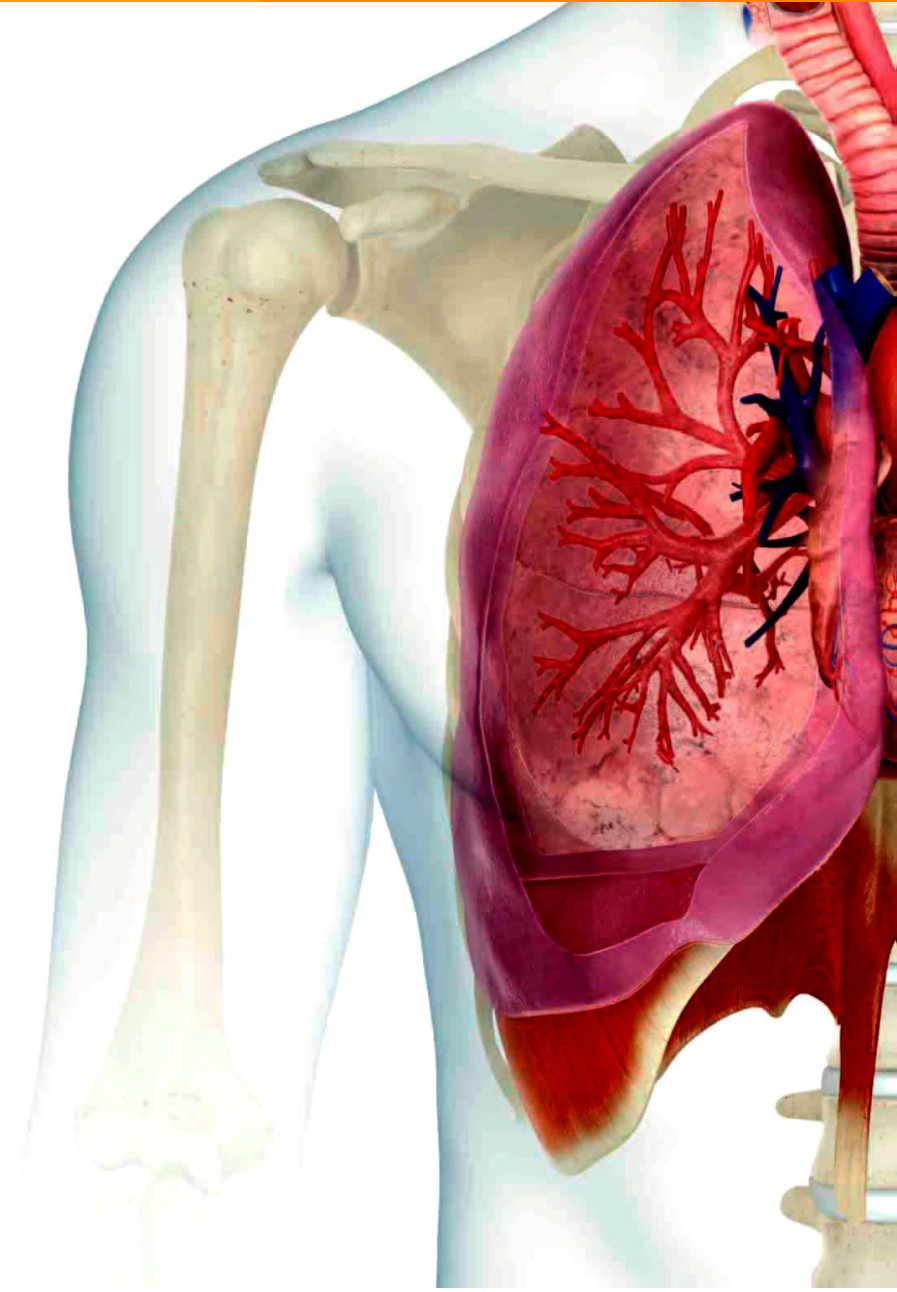


Respiratory system



Respiratory system

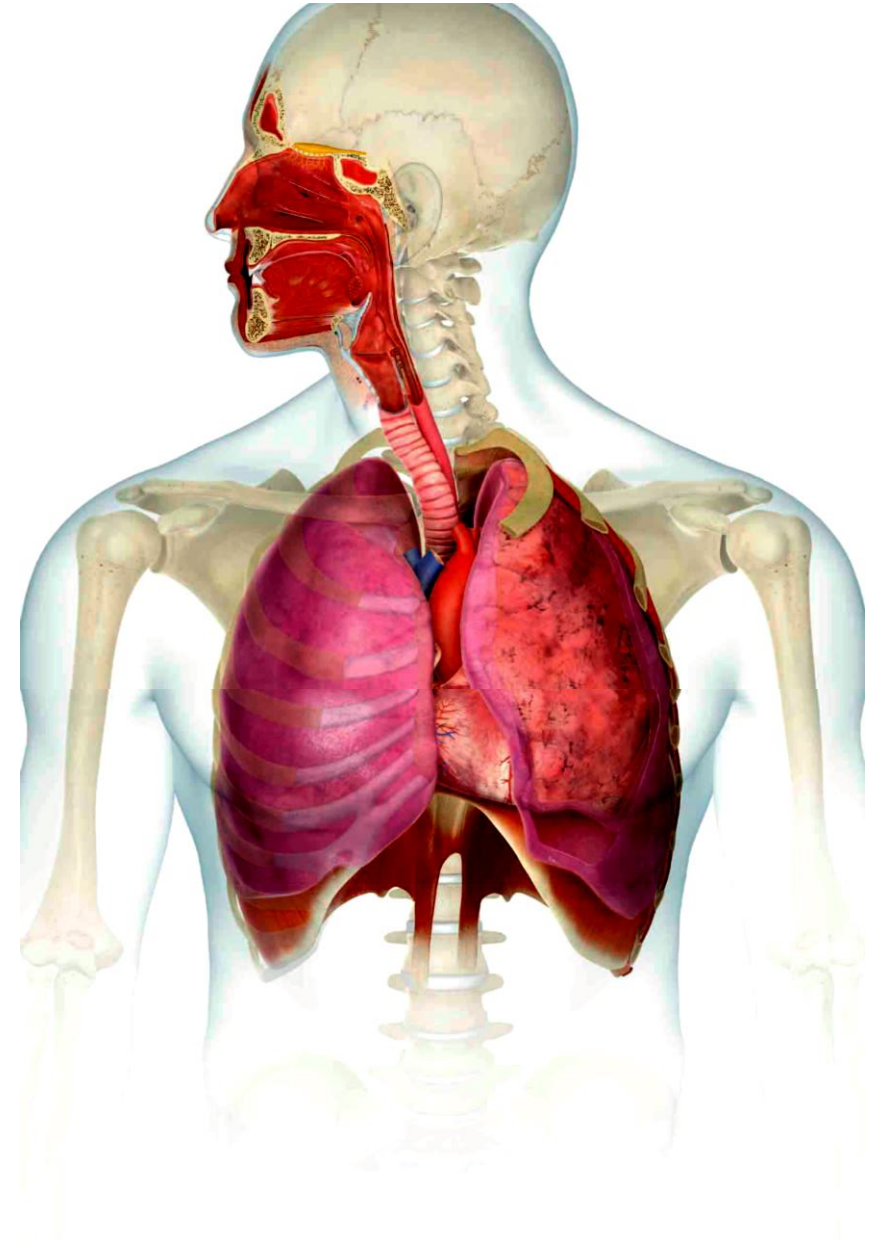
- Consists of **upper and lower parts:**

1. The upper respiratory

include: nose, nasal cavity, laryngopharynx and larynx.

2. The lower respiratory

include: the trachea, bronchi, bronchial tree, and the lungs.

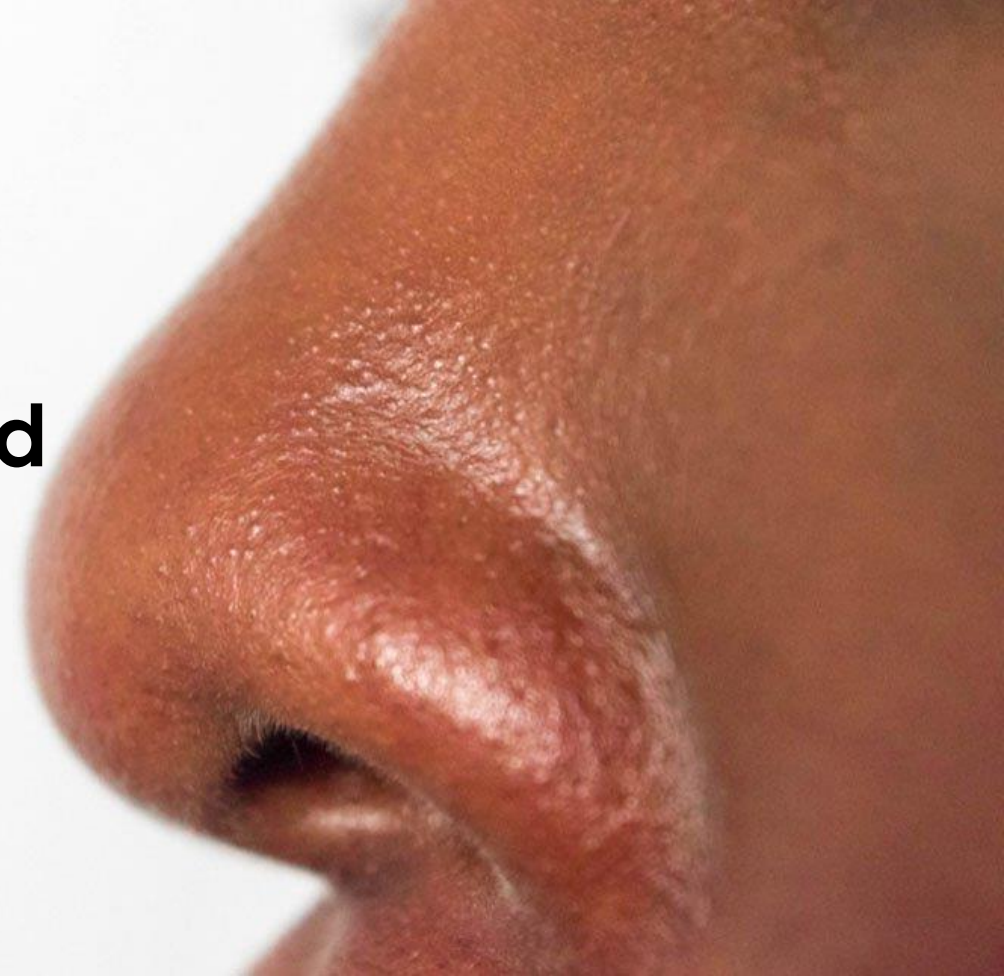


The nose

- Consists of the **external nose and the nasal cavity**, both of which are **divided by a septum** into right and left halves.

1. External Nose

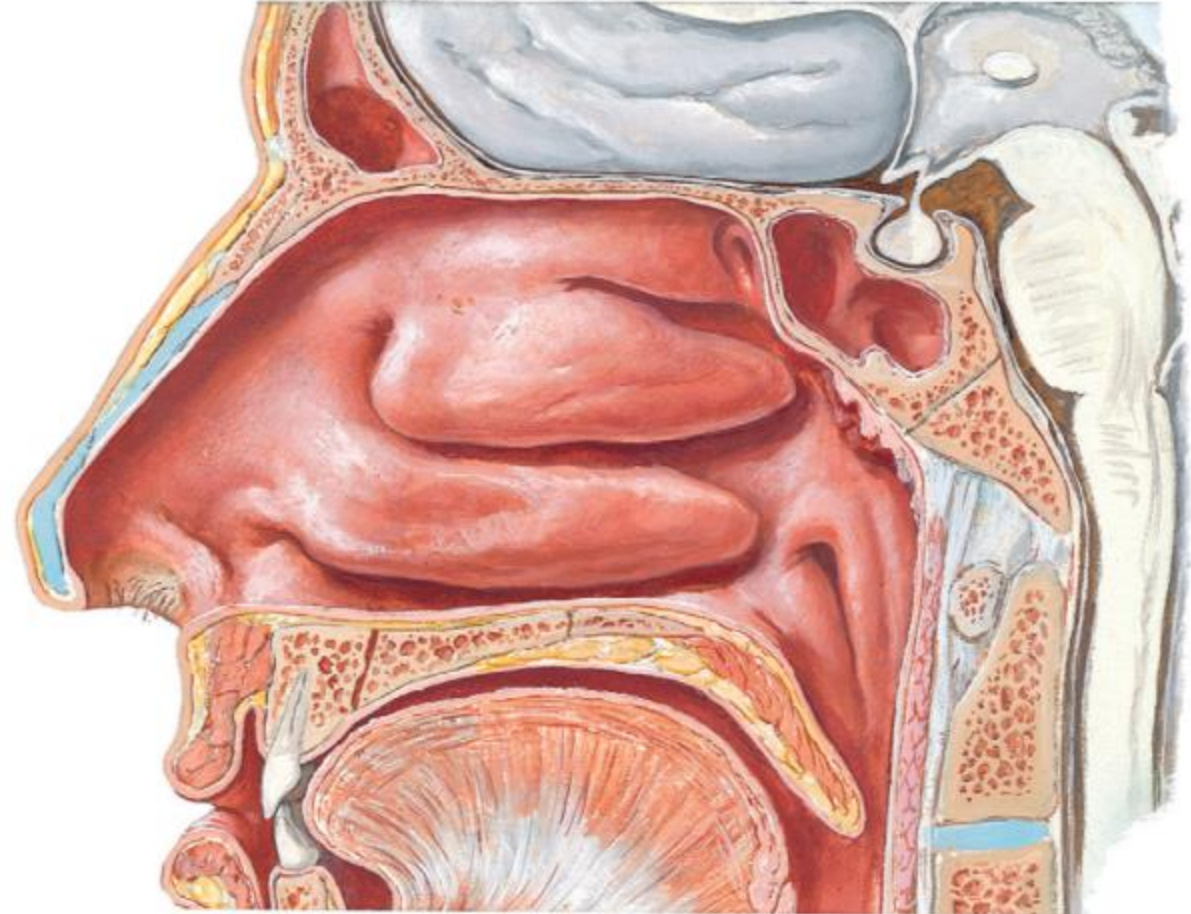
The external nose has two elliptical orifices called the **nostrils**, **The lateral margin, the ala nasi**, is rounded and mobile.



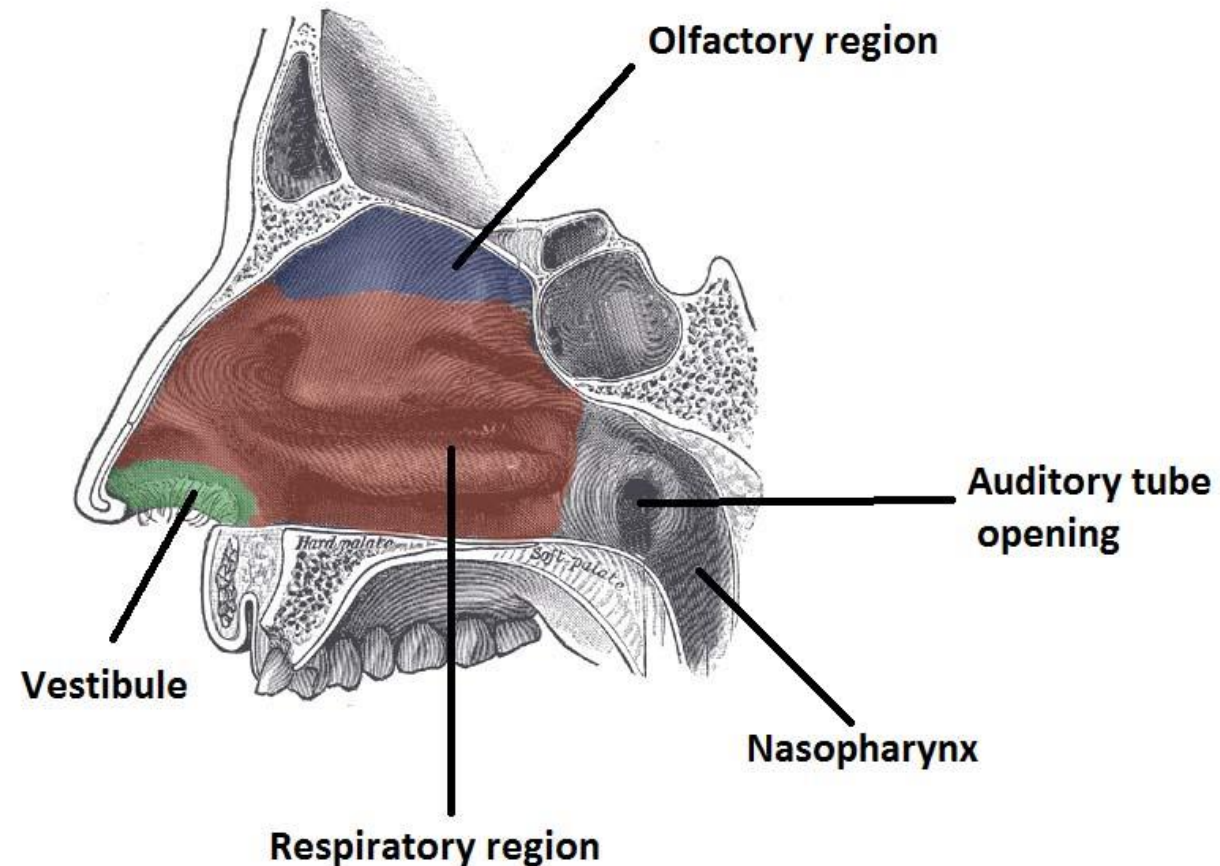
The nose

2. Nasal Cavity

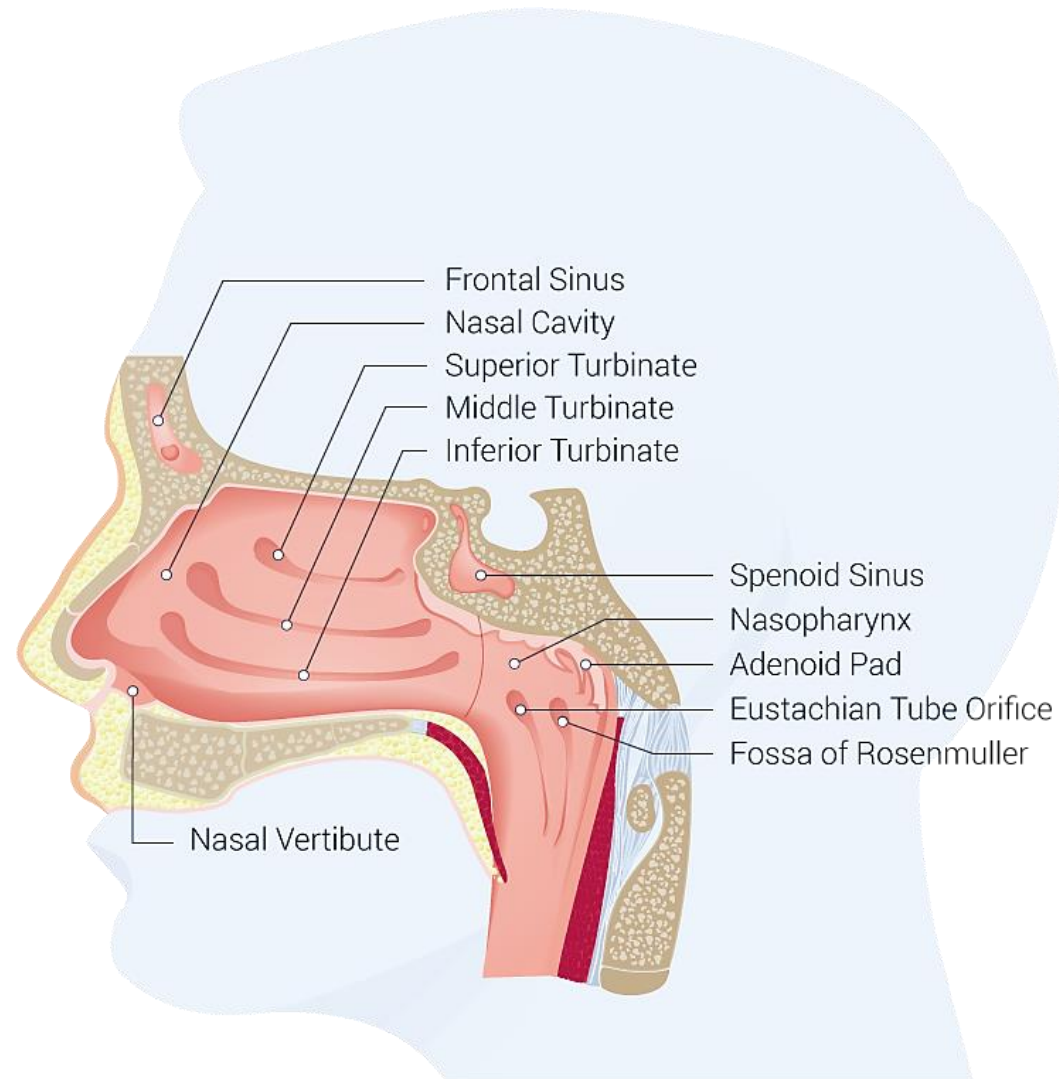
The nasal cavity extends **from the nostrils** in front, to the **posterior nasal apertures** or **choanae** behind, where the nose opens into the **nasopharynx**.



Regions of the nasal cavity



Regions of the nasal cavity

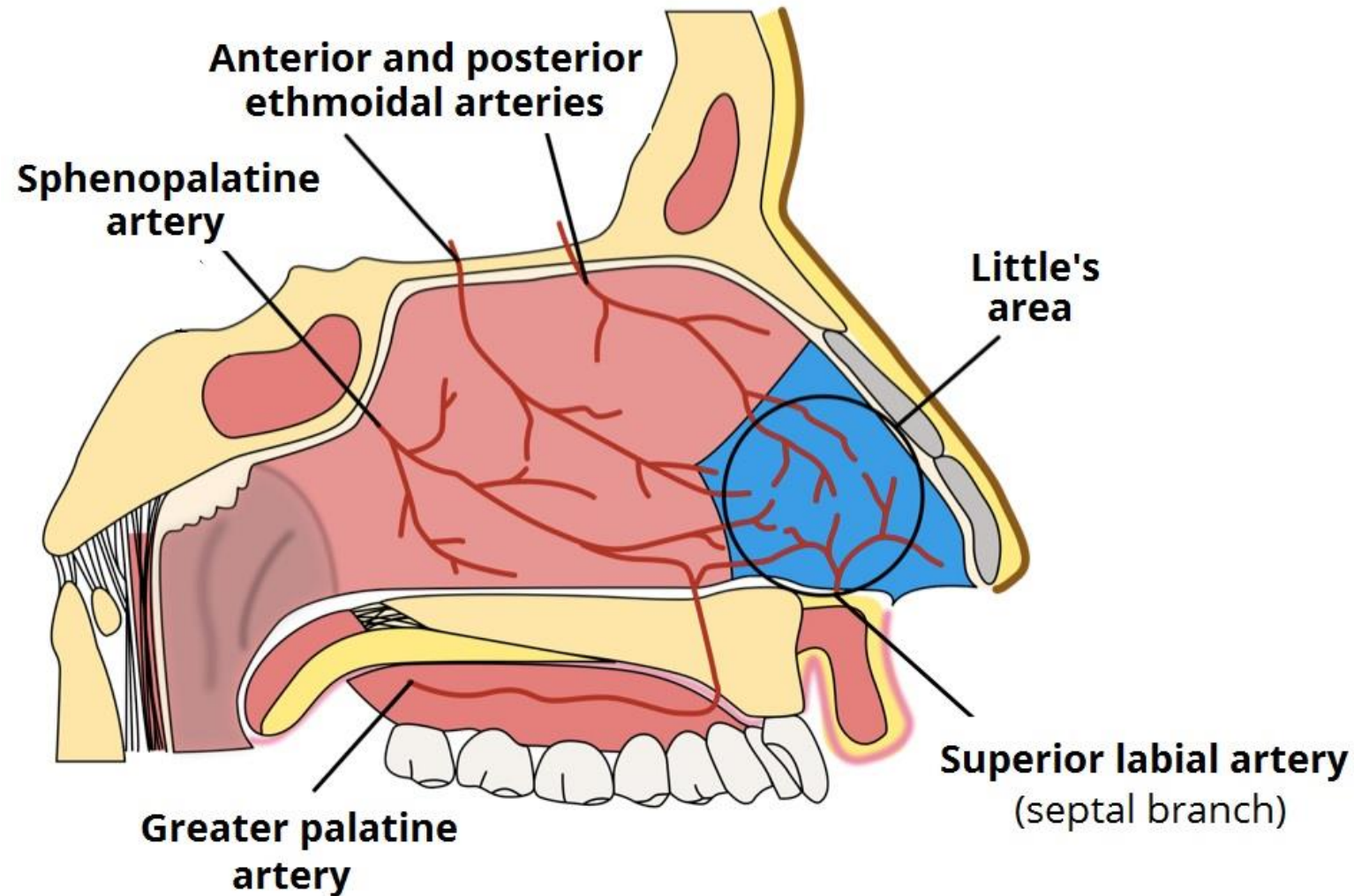


Clinical notes in nasal cavity

- Epistaxis
- Rhinorrhea
- Rhinitis

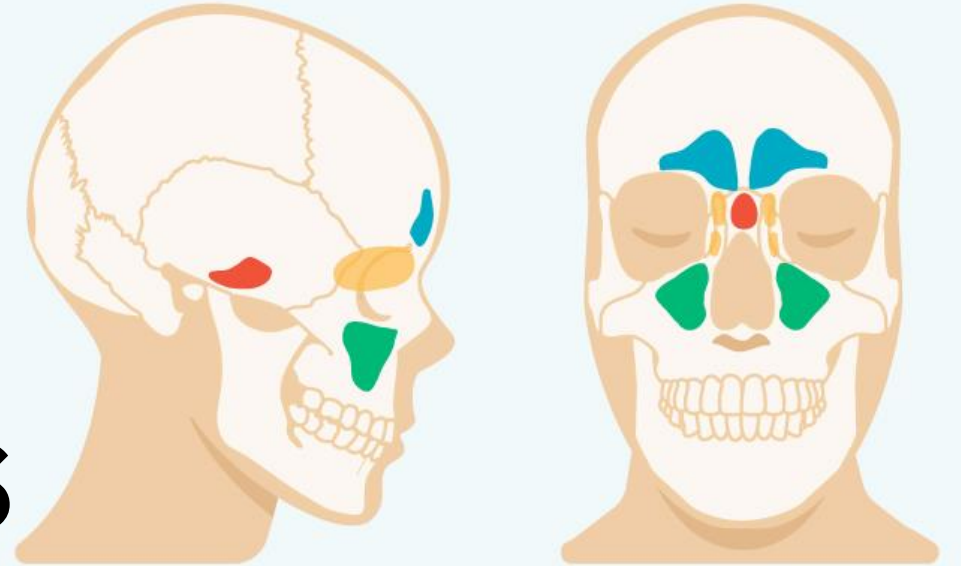


Little's (Kiesselbach's) area



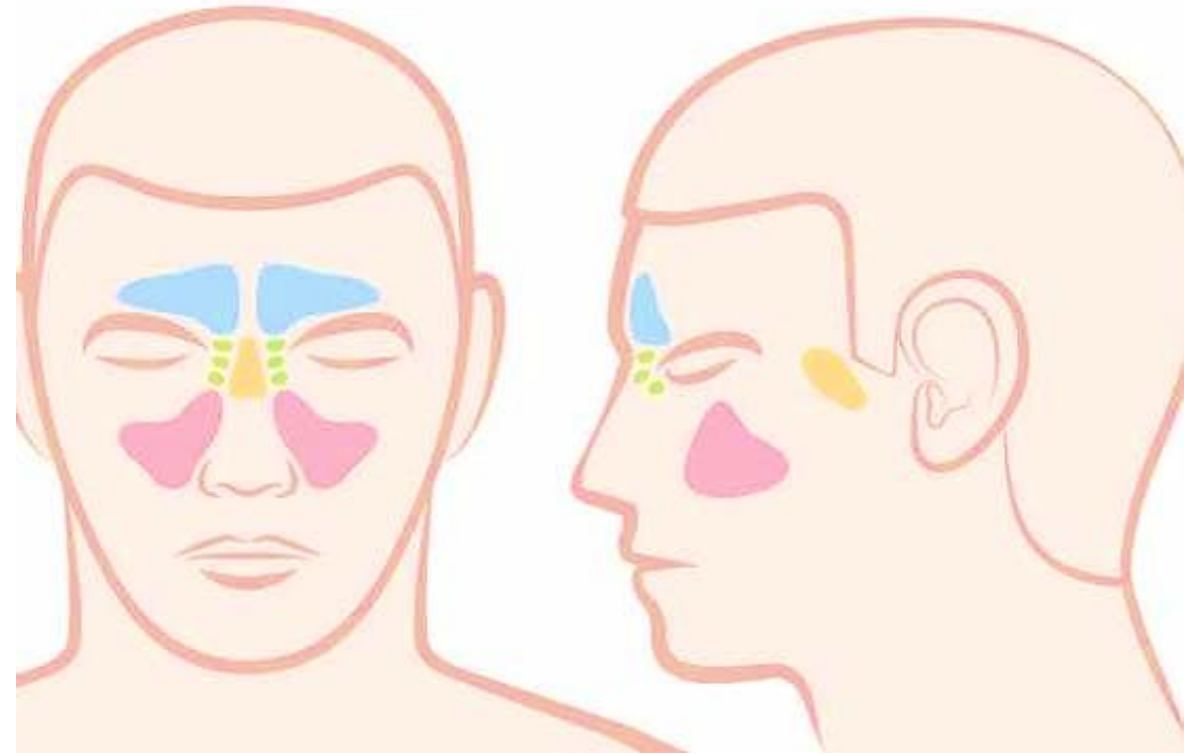
Paranasal sinuses

frontal, ethmoidal, sphenoidal and maxillary air sinuses



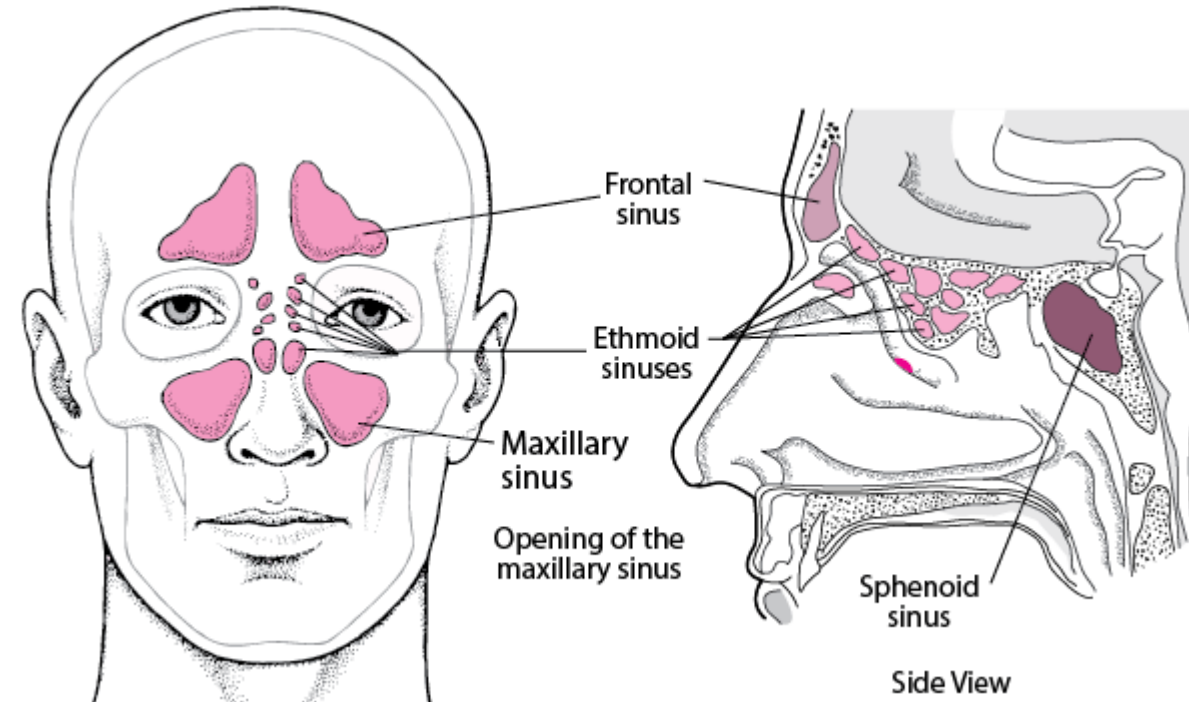
Paranasal sinuses

Air cavities located in the bones of skull around the nose and open in the lateral wall of the nasal cavity.



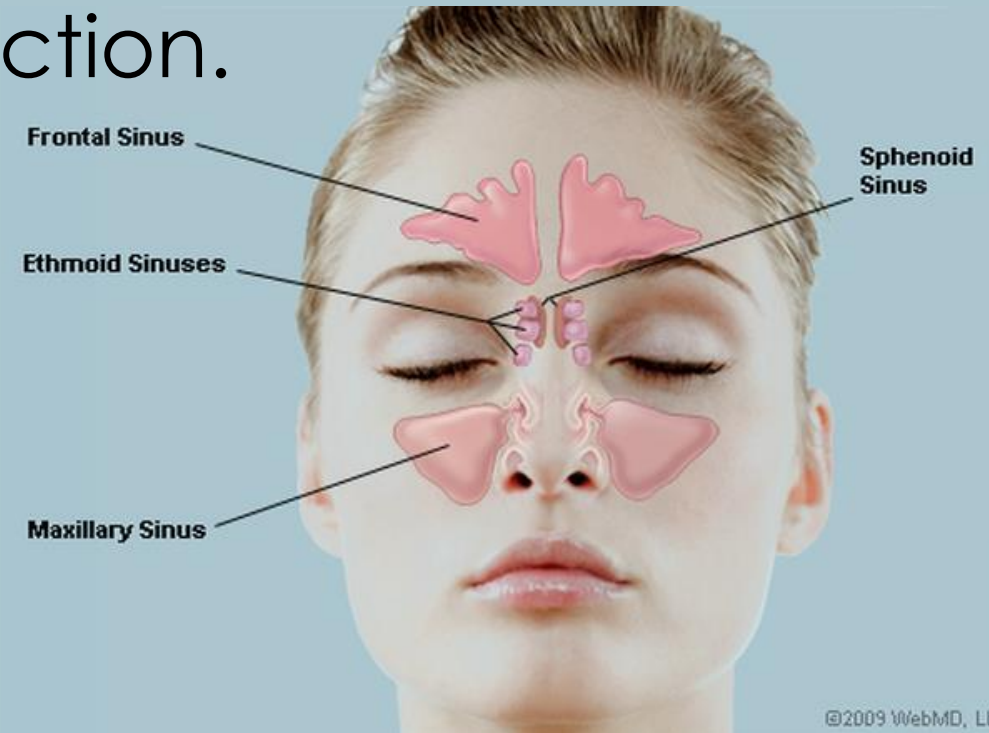
Paranasal sinuses

- They include:
 1. Frontal,
 2. Ethmoidal,
 3. Sphenoidal,
 4. And maxillary air sinuses.



Paranasal sinuses

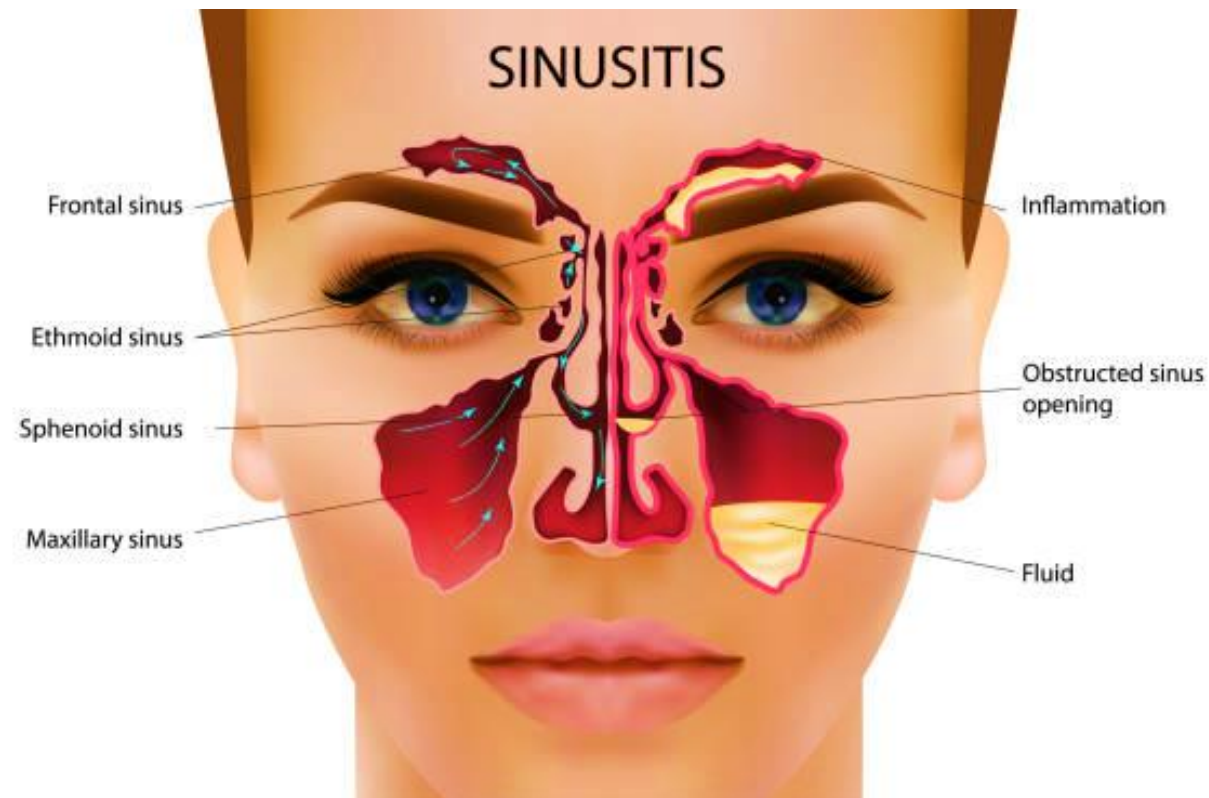
- Humidifying and warming inspired air.
- Regulation of intranasal pressure.
- Increasing surface area for olfaction.
- Lightening the skull.
- Resonance.
- Absorption shock.
- Contribute to facial growth.





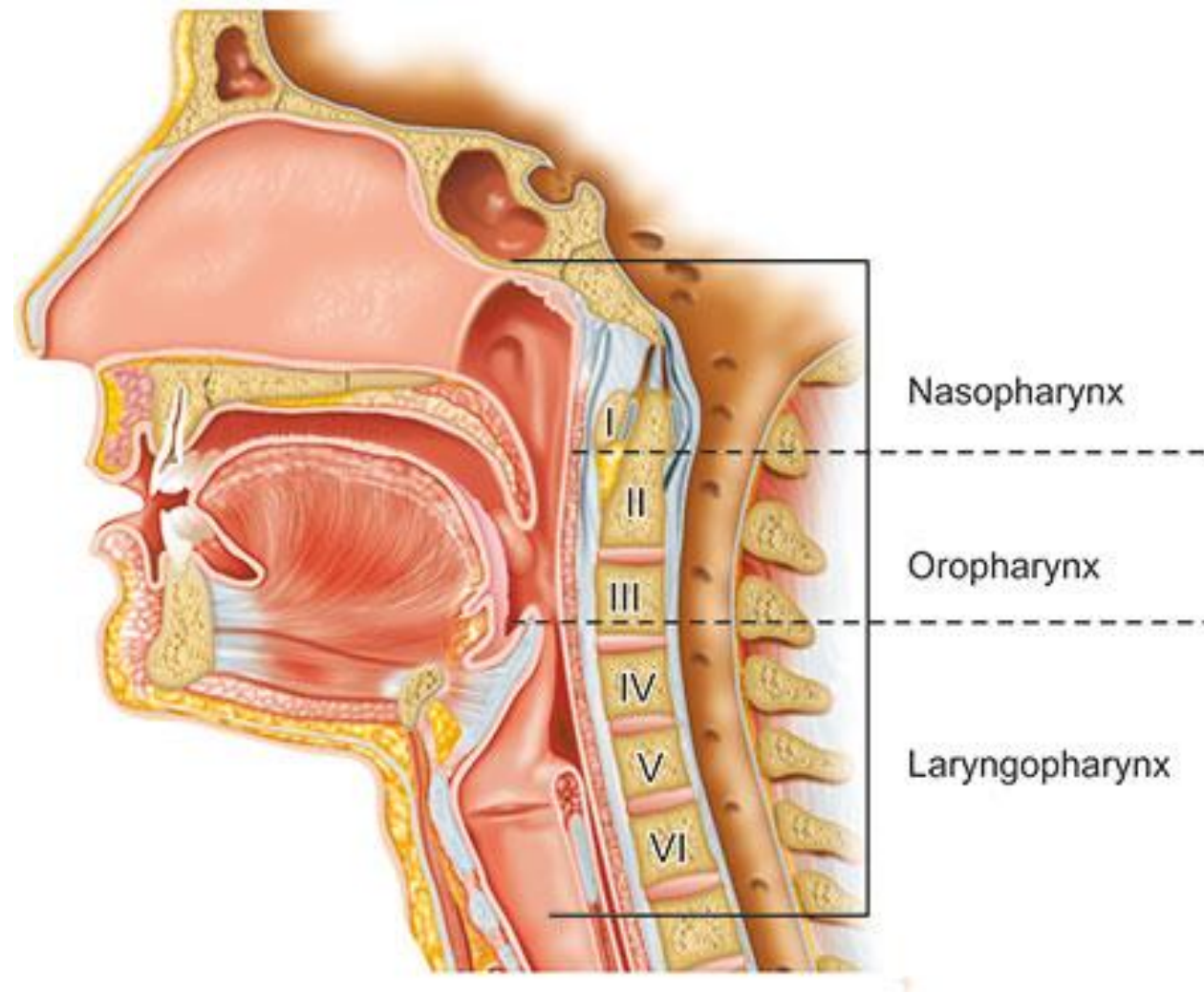
Clinical notes in pranasal sinuses

Sinusitis



The Pharynx

Parts of pharynx



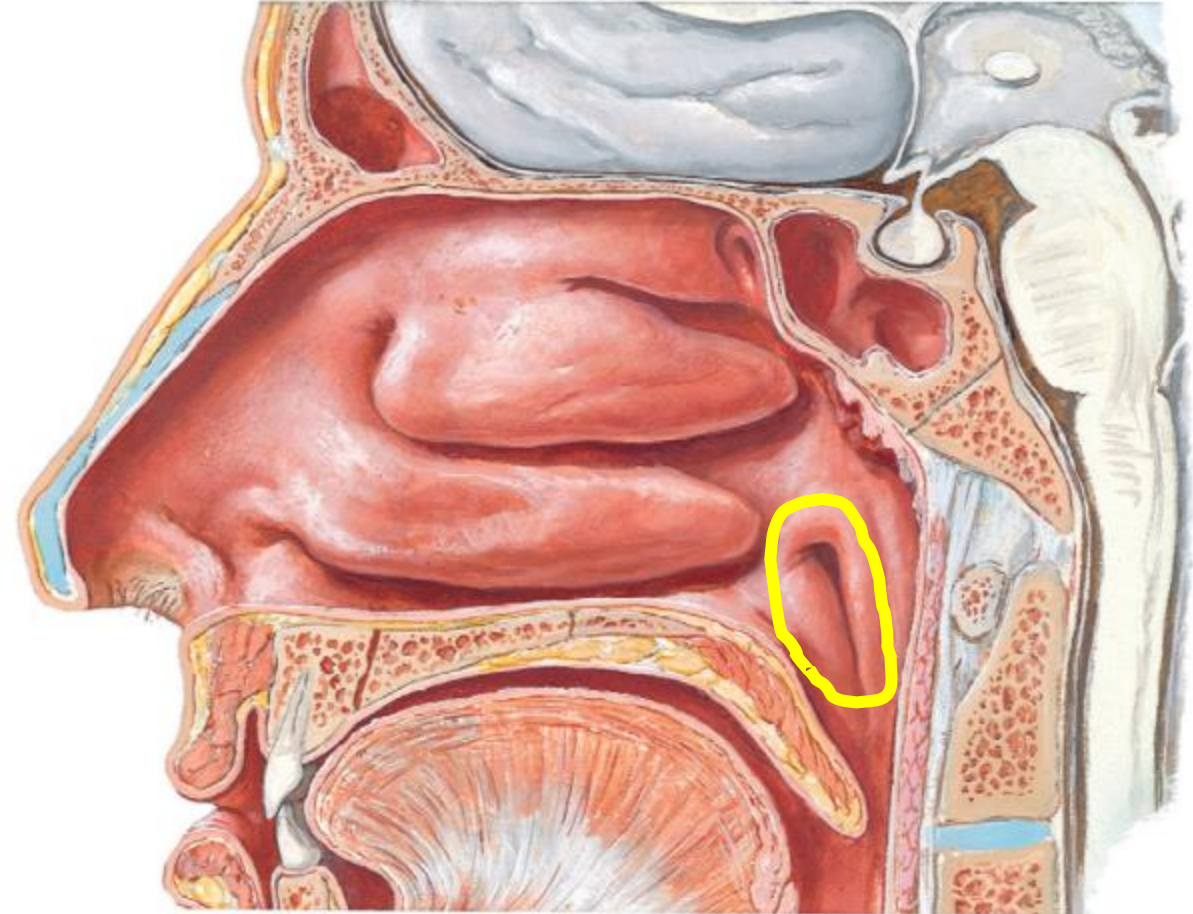
The pharynx

- Its 12-13 cm long muscular tube **lies behind the oral, nasal and laryngeal cavities.**
- Extends from the **base of skull to the lower border of cricoid cartilage** at the level of lower border of **6th cervical vertebra** where it continues with **esophagus.**

Parts of pharynx

I. Nasopharynx

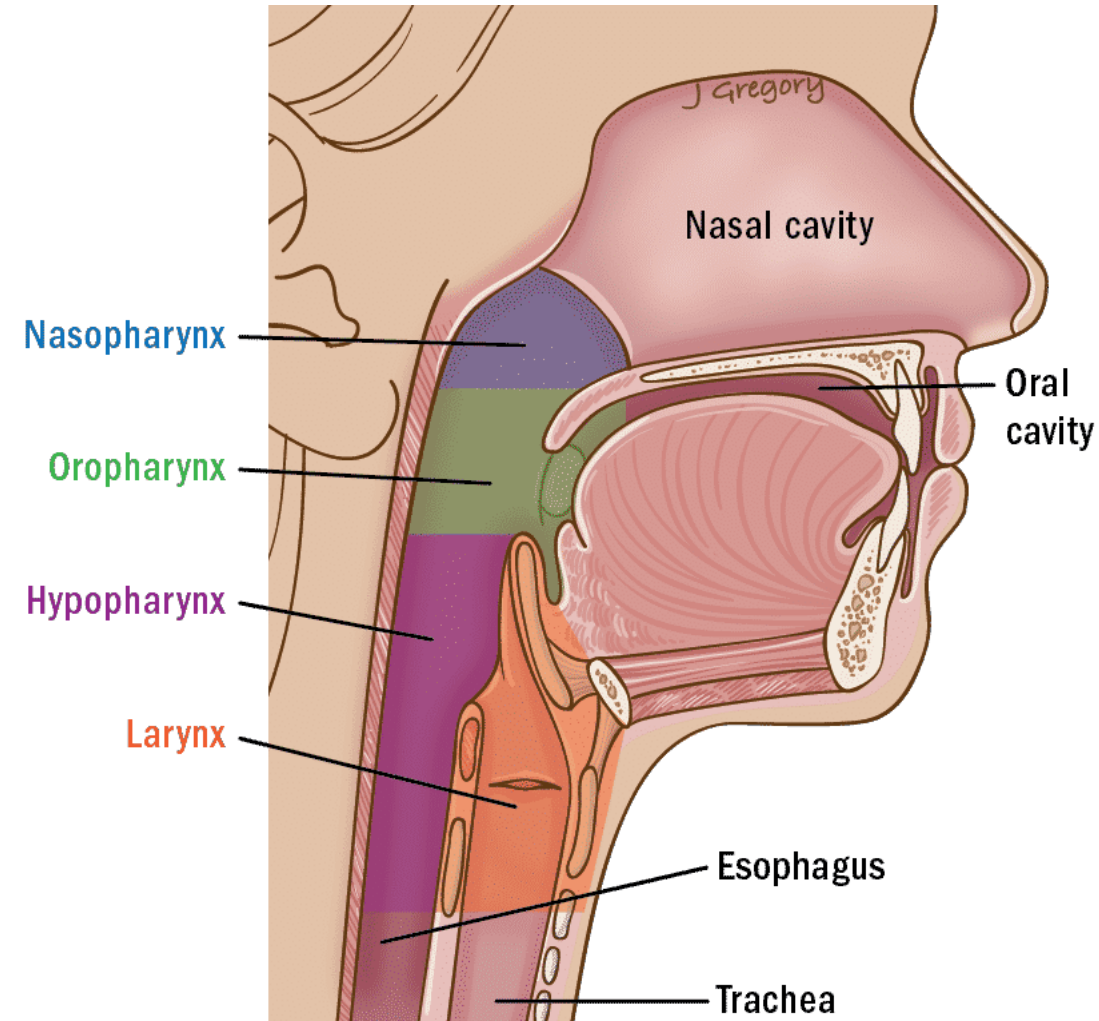
- The upper part of pharynx **lies behind the nasal cavity.**
- Each **auditory tube** opens in **the lateral wall of nasopharynx.**



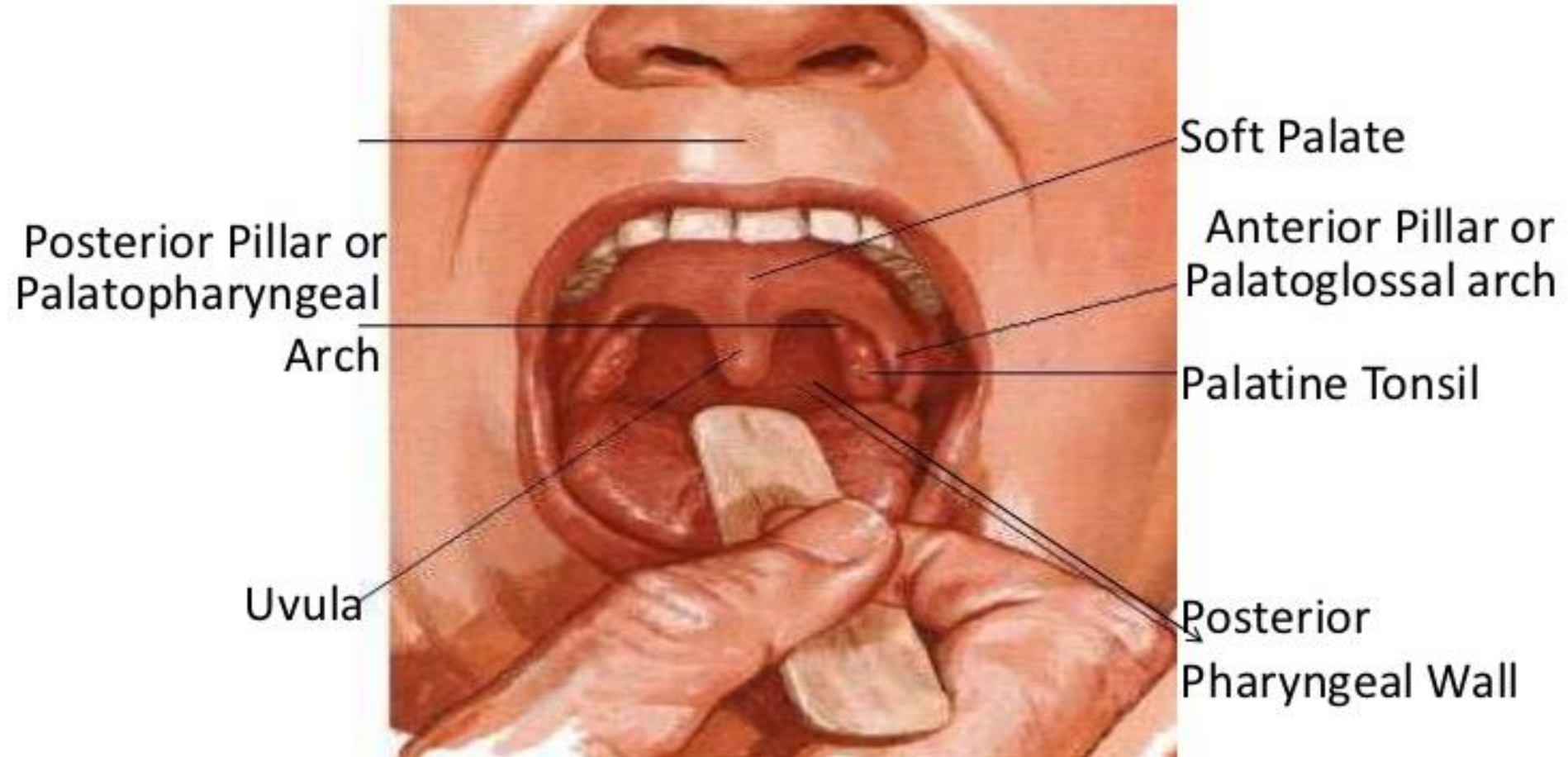
Parts of pharynx

II. Oropharynx

- It's the middle part of the pharynx situated **behind the oral cavity**.



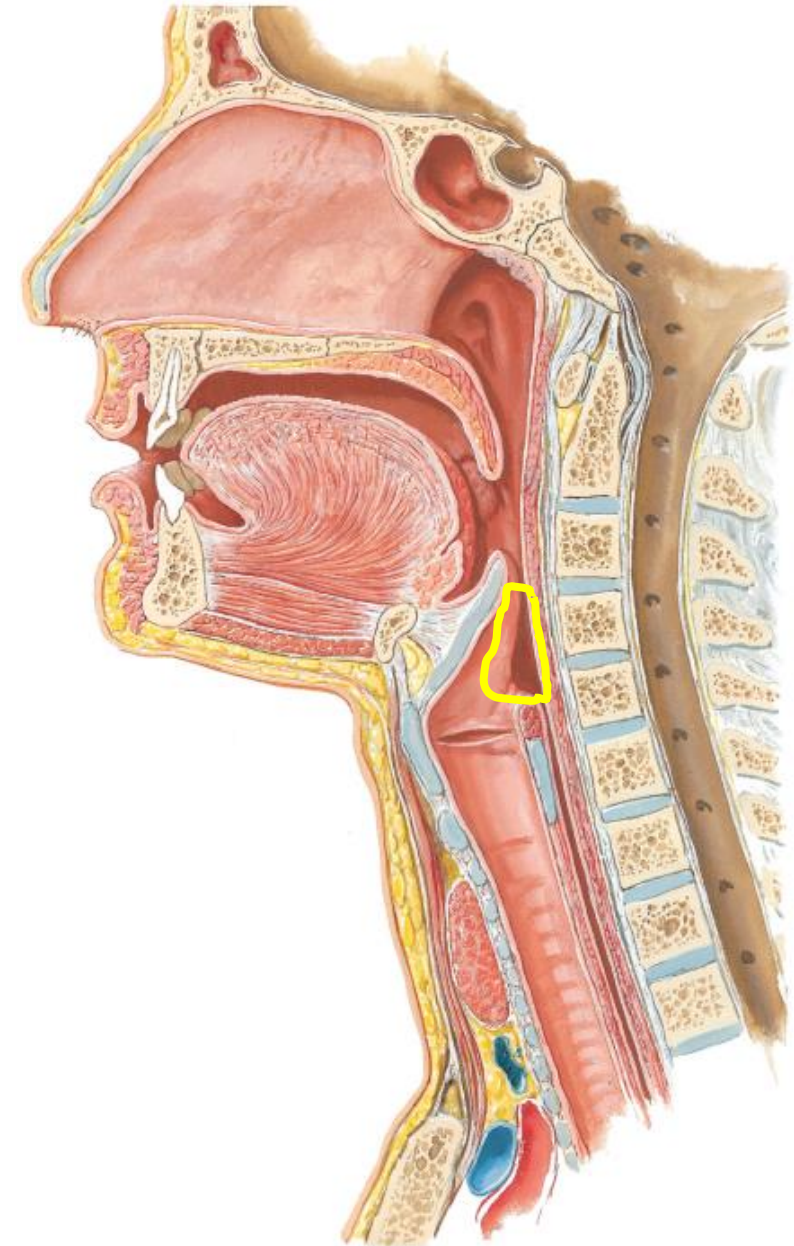
Oropharynx



Parts of pharynx

III. Laryngopharynx (hypopharynx)

- reaches from the **hyoid bone** **to the** lower border of the **cricoid cartilage**, where it is continuous with the **esophagus**.

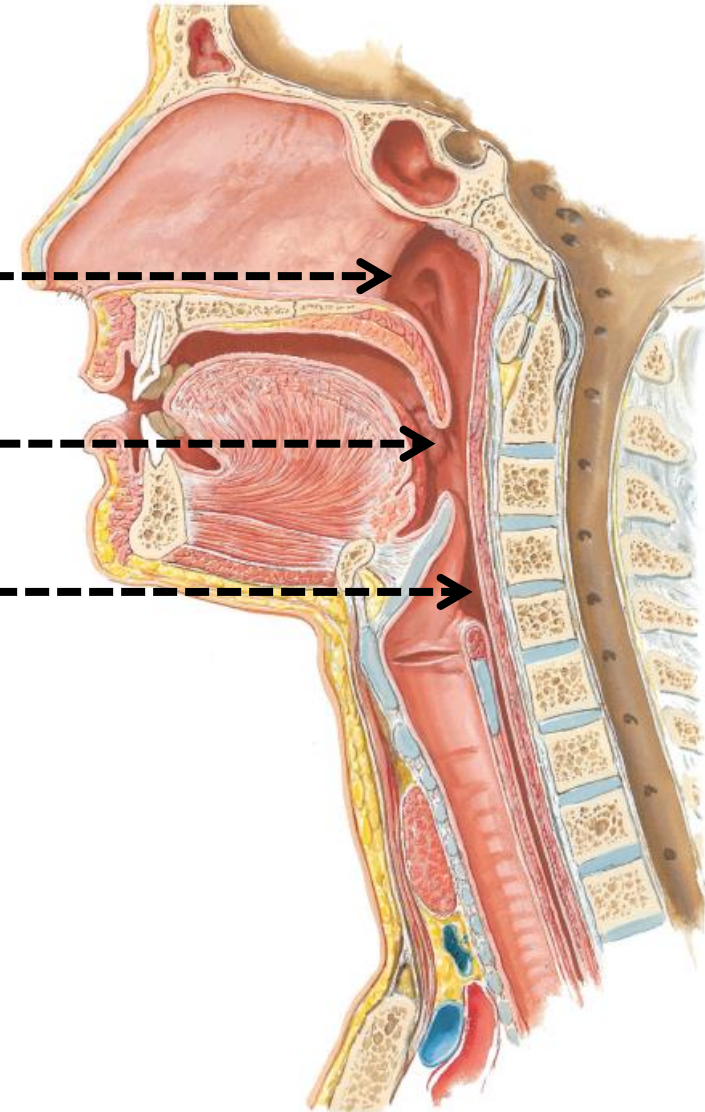


Parts of Pharynx

1. Nasopharynx

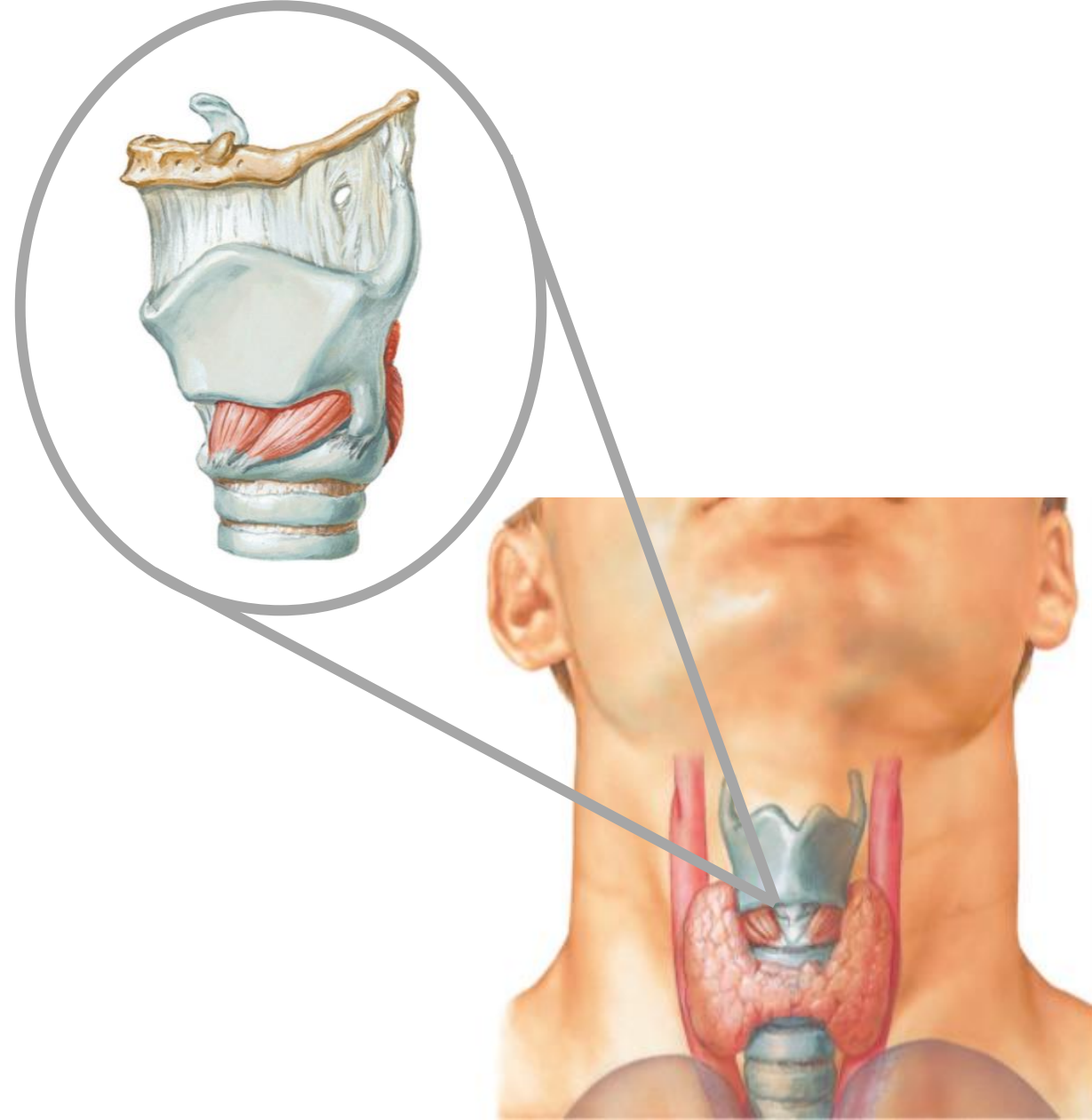
2. Oropharynx

3. Laryngopharynx



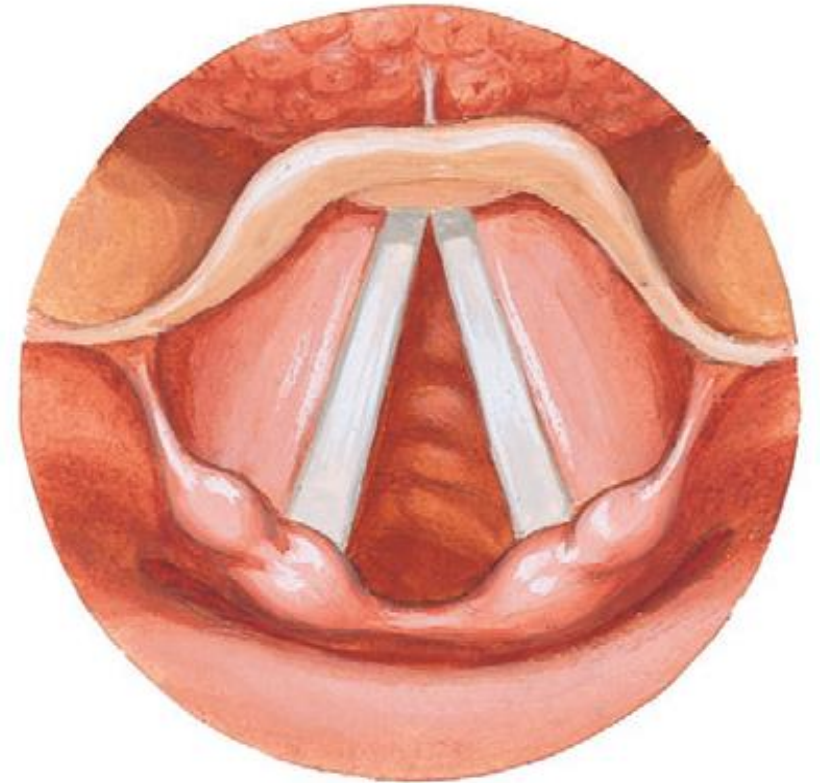
Larynx

- A **phonation box** and air passage, located in the **middle anterior part of the neck**.
- It is made of a **number of cartilages** connected together by **membranes, ligaments, muscles**.



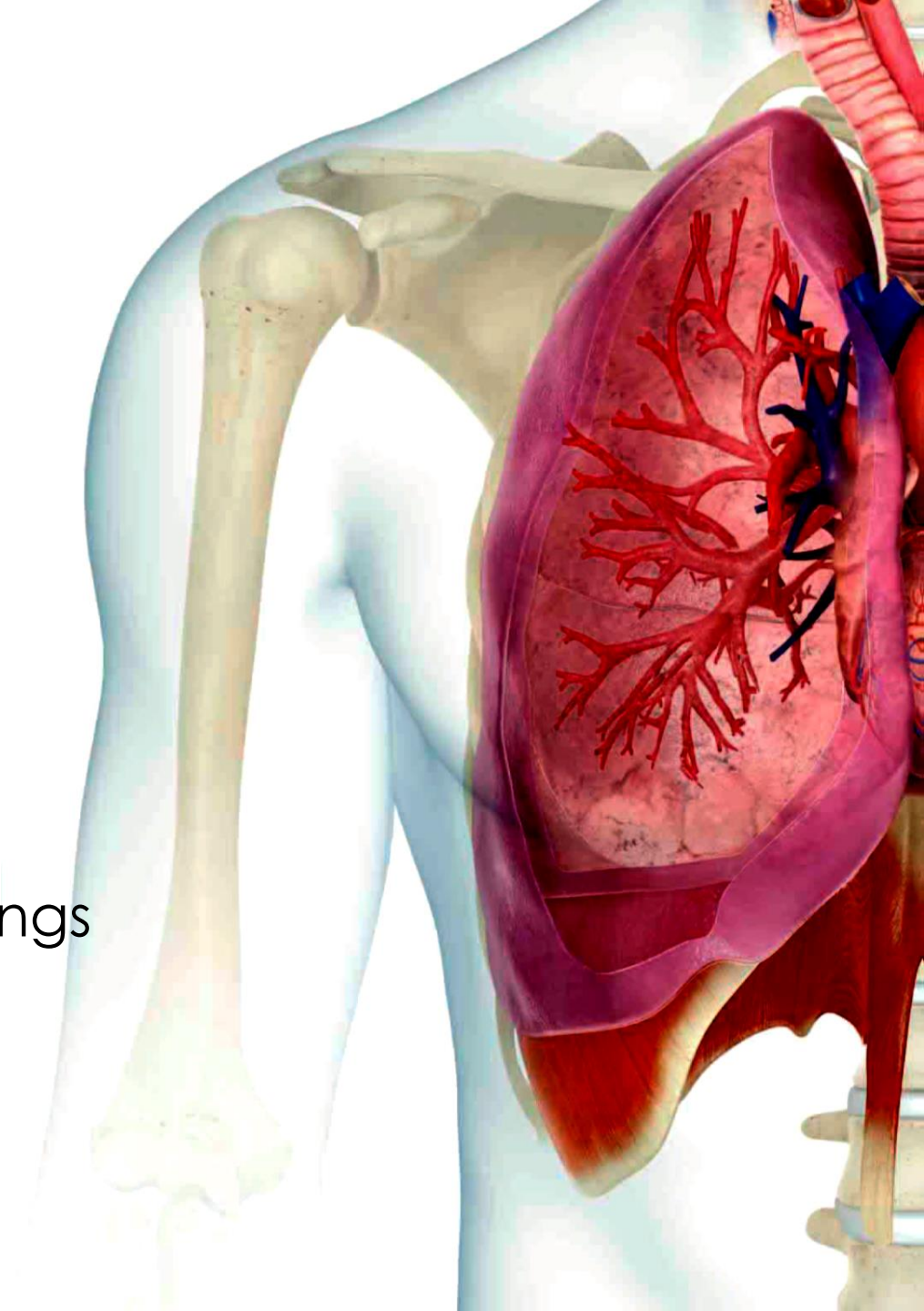
Larynx

- **Cavity of Larynx**
 - Extends from **inlet of larynx** to the beginning of **trachea**.
 - In the central, middle part of laryngeal cavity, it **contains two pairs of vocal folds or cords**.



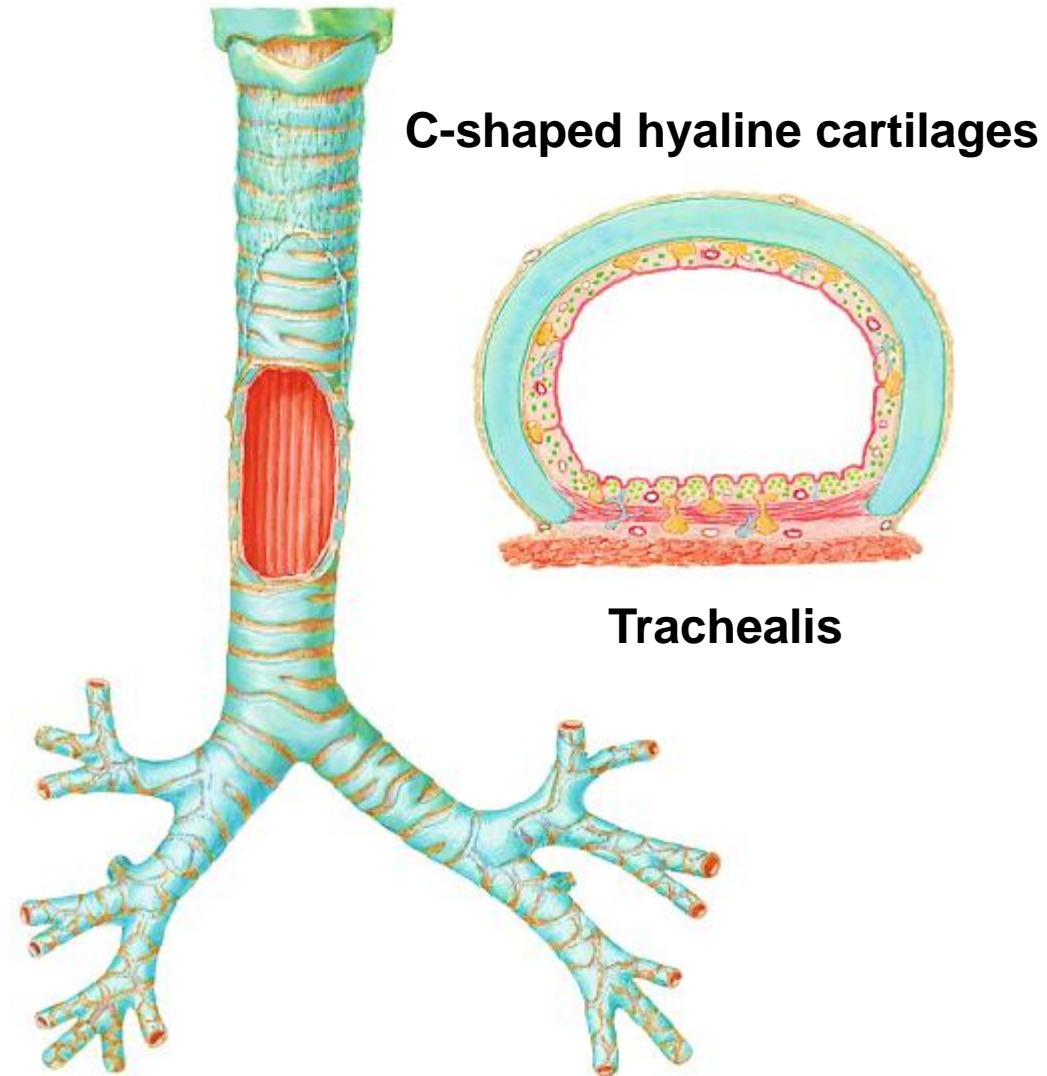
Lower respiratory

trachea, bronchi, bronchial tree, and the lungs



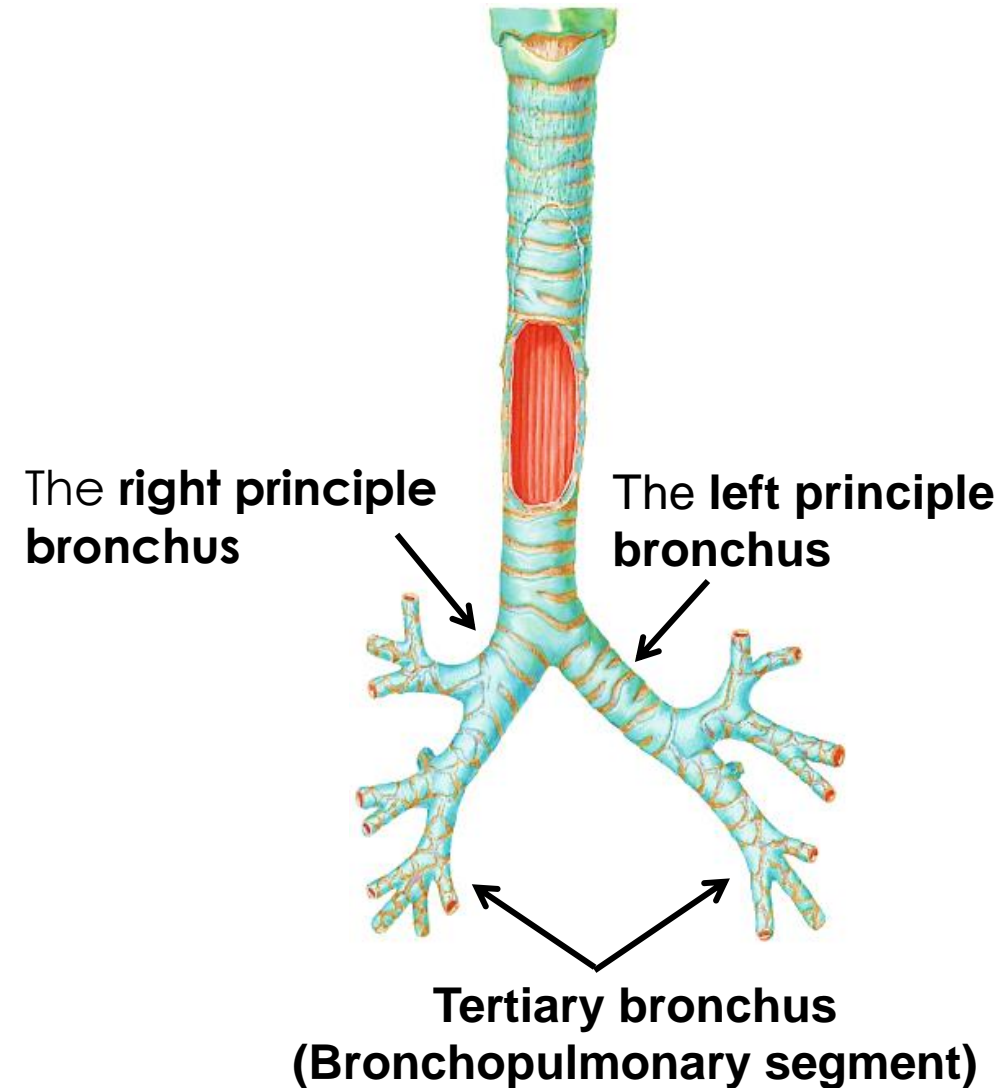
Trachea

- The trachea begins at the **laryngeal outlet** and terminates at the **level of the sternal angle**, by dividing into the right and left bronchi (**carina** = **bifurcation of trachea**).
- It is 10 cm long having a **fibromuscular wall** supported by a number of **C-shaped hyaline cartilages**.



Bronchi and bronchial tree

- The right and left principle bronchi **begins at the level of sternal angle.**



Lung

- There are a **pair of lungs** in the thoracic cavity.
- Each lung is **covered by pleura**, and protected by **thoracic skeleton**.
- Each lung has an **apex, broad base or inferior surface, sharp anterior border, and sharp inferior border**.
- Each lung has **sterno-costal surface, diaphragmatic surface and mediastinal surface**.

Lung

- Right lung **is shorter than** the left one due to **right lobe of liver** pushing the **right lung superiorly**.
- There are **three lobes in right lung** and **two lobes on the left lung**.
- There are **two fissures on the right lung (oblique and horizontal fissures)**.
- **Left lung has only one oblique fissure.**

Surfaces of the lung

- **The costal surface**
- It is related to the costal pleura, which separates it from the ribs, costal cartilages, and innermost intercostal muscles.
- **The mediastinal surface** of the lung, is related to the middle mediastinum, which contains the pericardium and heart. The mediastinal surface includes the hilum, which receives the **root of the lung**.

Surfaces of the lung

- **The diaphragmatic surface** of the lung, forms the base of the lung, which **rests on the dome of the diaphragm**.



Lungs

Right lung
•upper lobe
•middle lobe
•lower lobe

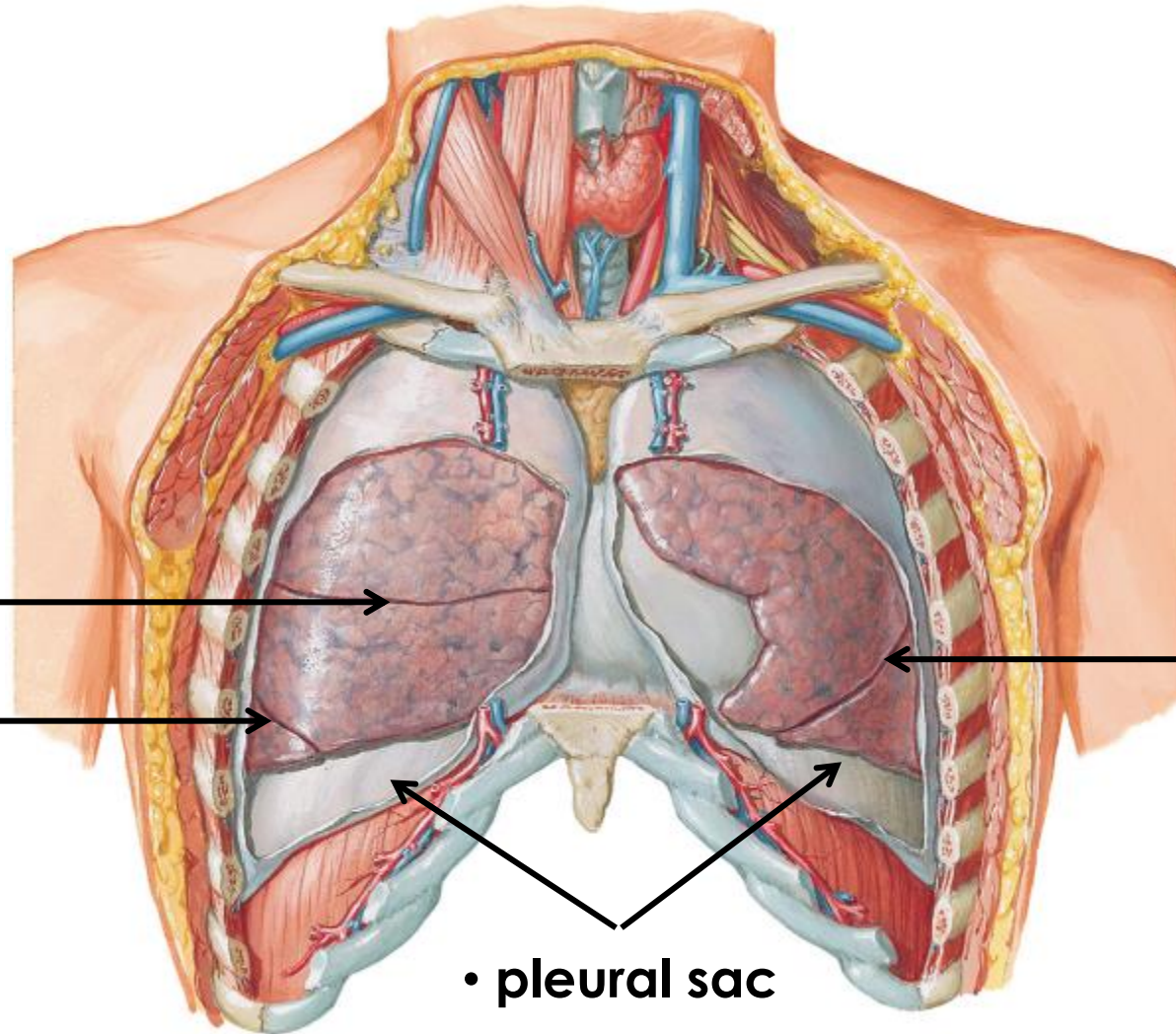
•transverse
fissures.

•Oblique
fissures.

Left lung
•upper lobe
• lower lobe

•oblique
fissure.

• pleural sac



The hilum of the lung

- Located **on the mediastinal surface** of each lung through which the **structures forming the root of the lung** pass to enter or exit the lung.



Differences between

Right lung

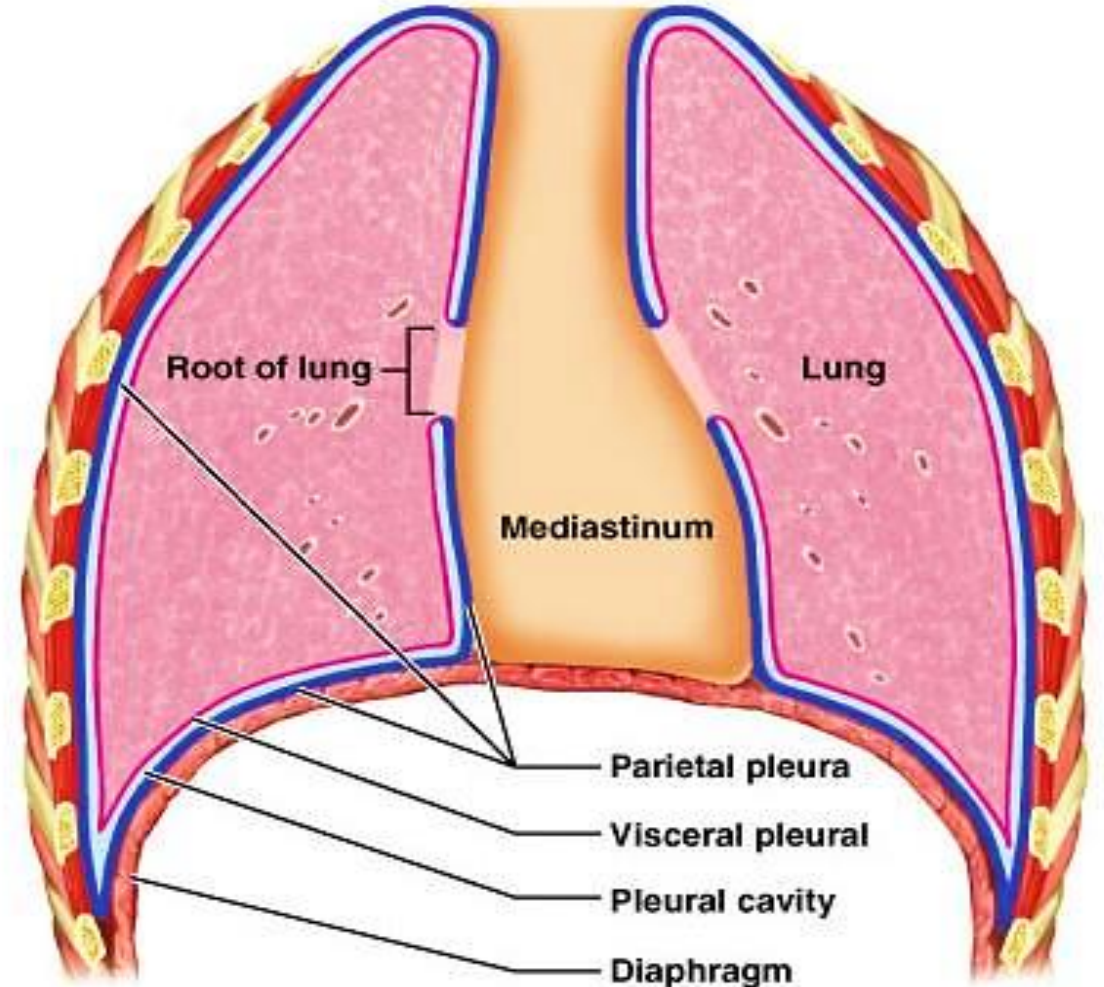
- It has **two** fissures and **three** lobes.
- **Anterior border** is straighter.
- Larger and heavier weight **about 700g**.
- **Shorter** and broader

Left lung

- Only **one** fissure and **two** lobes.
- **Anterior border** is interrupted by the **cardiac notch**.
- Smaller and lighter, weighs about **600g**.
- **Longer** and narrower.

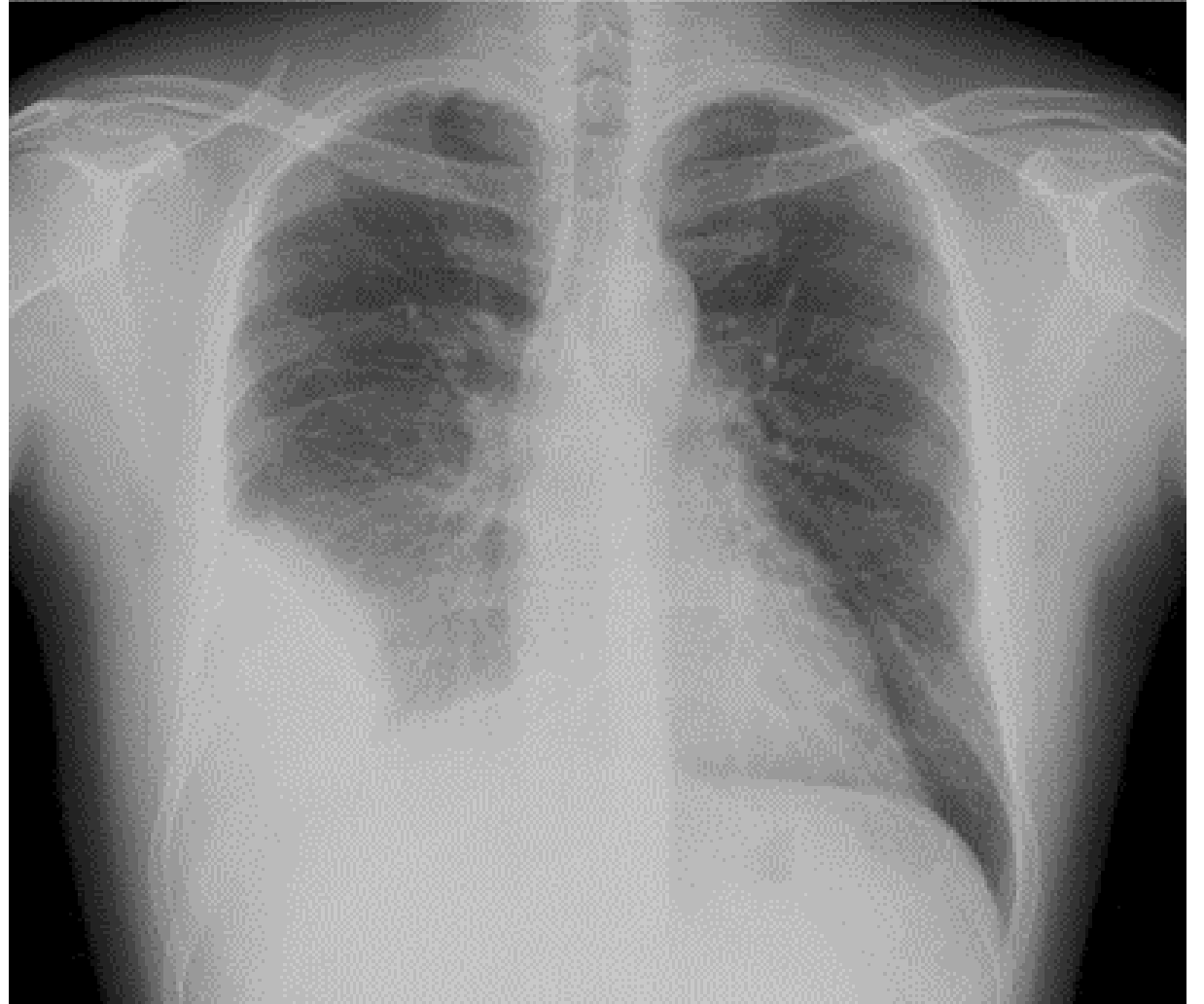
Pleura

- Serous sac investing the lungs.
- Consists of **outer parietal** and **inner visceral** layers separated by a small space called **pleural cavity**.



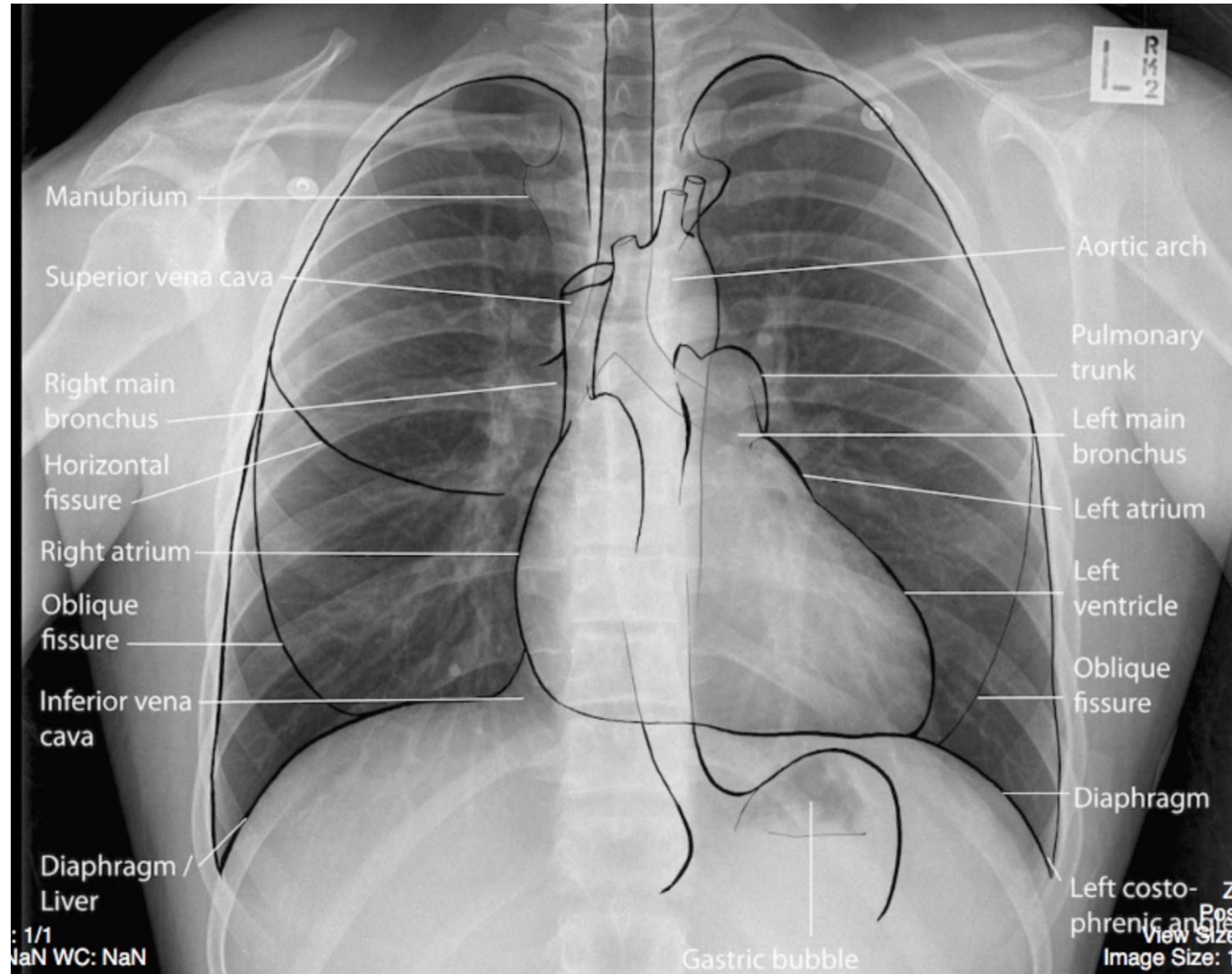
Clinical notes in pleura

- Pleuritis
- Pneumothorax
- Haemothorax



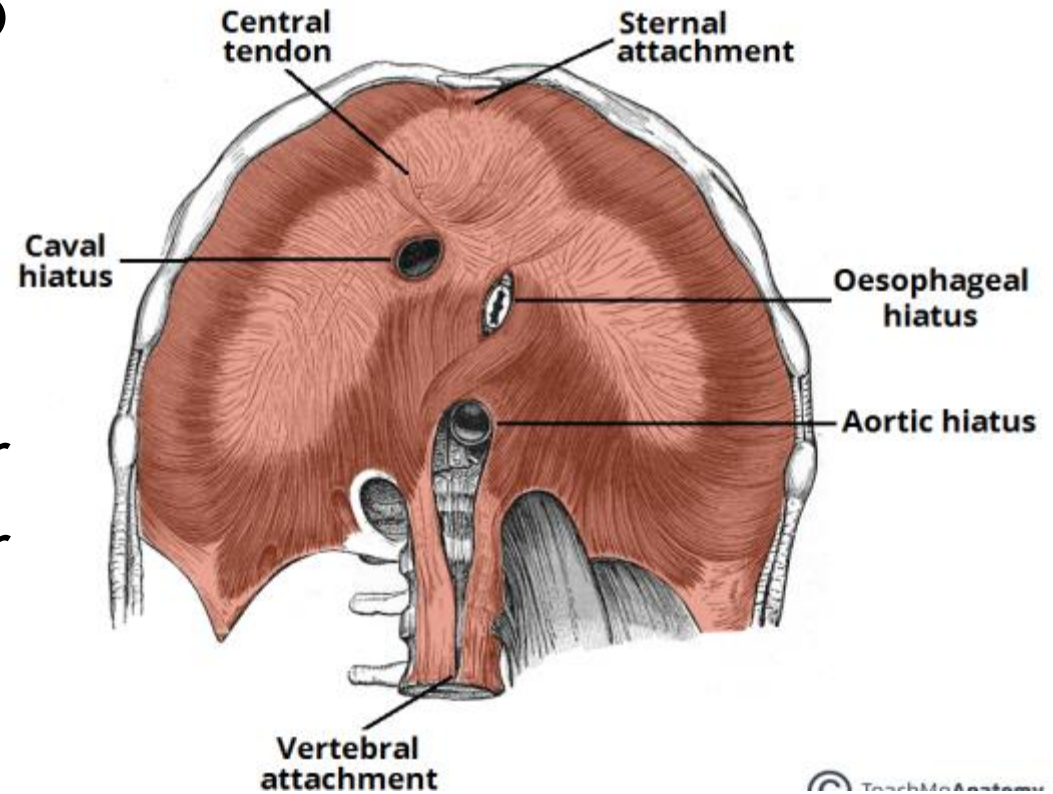


Radiological-anatomy of the lung



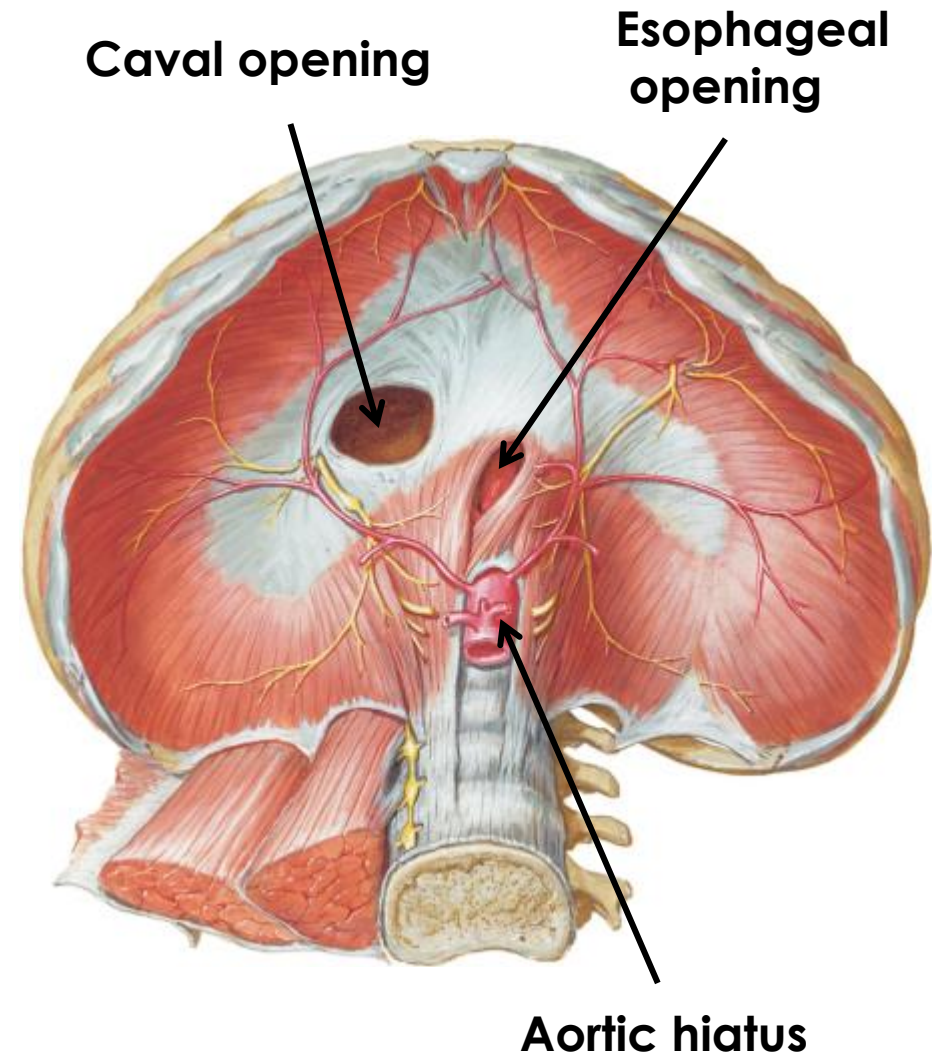
Diaphragm

- Is musculetendinous, **has two parts**:
 1. **Muscular part fixed.**
 2. **Central part movable.**
- The fibers of the muscular part radiated in the center forming **central tendon**



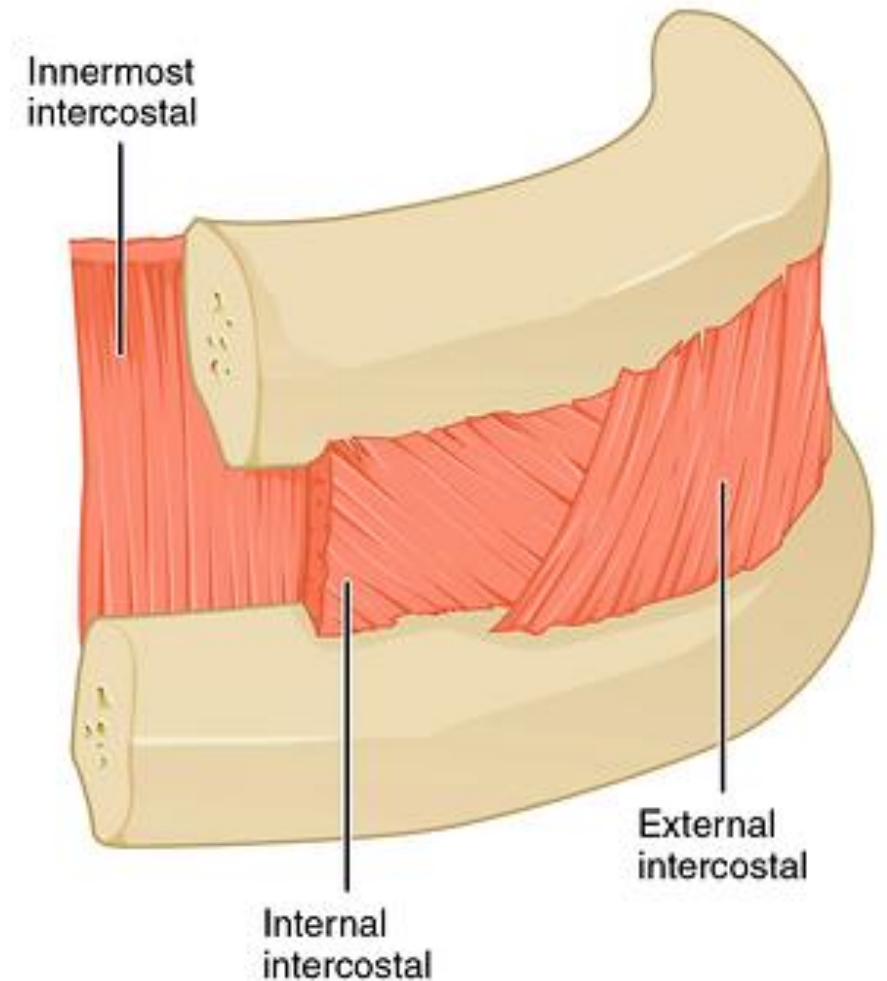
Opening of the diaphragm

1. **Aortic hiatus** at the level of **T12** for aorta
2. **Esophageal hiatus** at the level of **T10** for esophagus
3. **Caval opening** for IVC at the level of **T8**



Intercostal muscles

- **External intercostal muscle.**
- **Internal intercostal muscle.**
- **Innermost intercostal muscle:**
 1. Intercostalis
 2. Subcostalis
 3. Sternocostalis (transversus thoracicus).



Thank you

