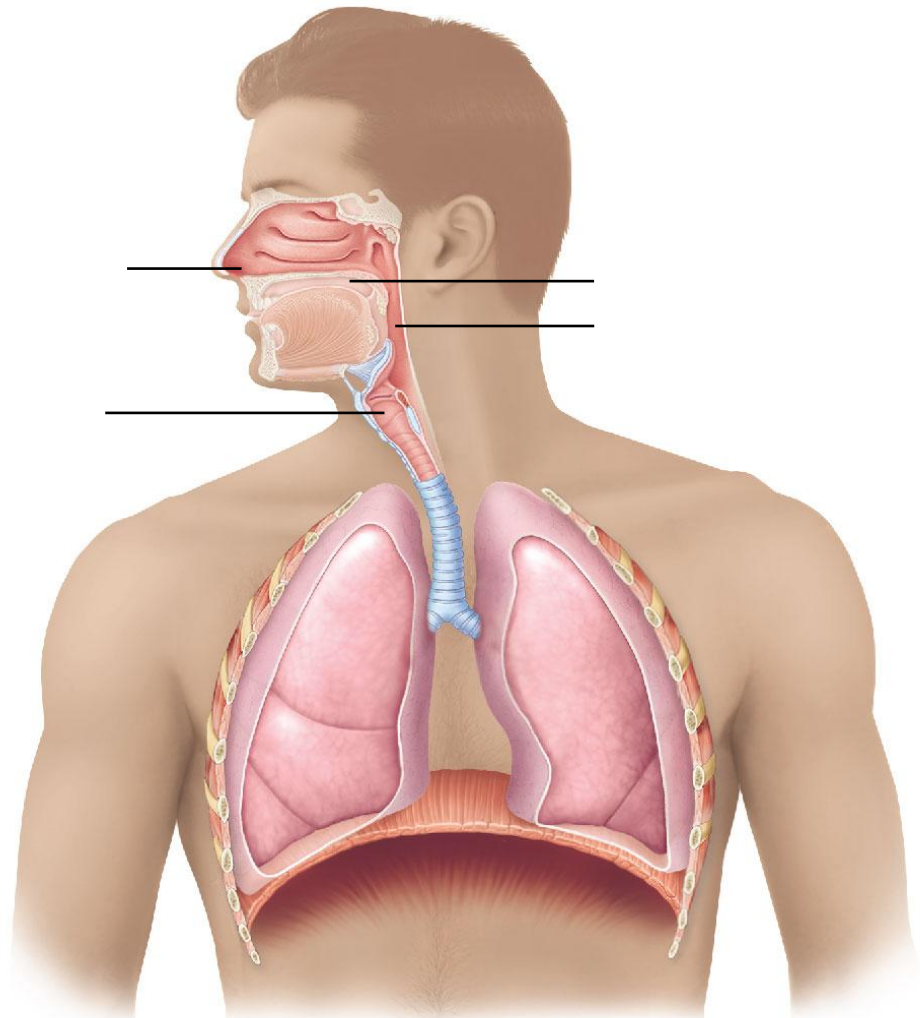
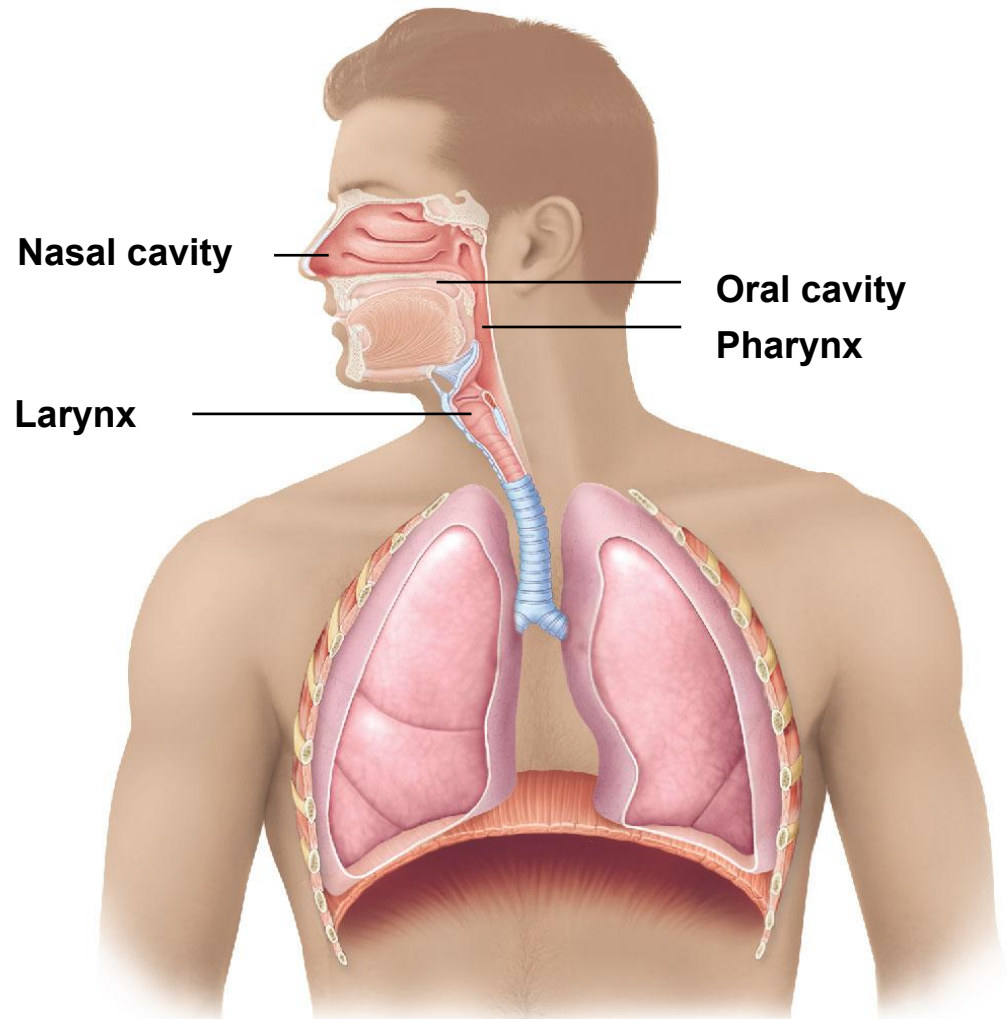


# Label the following structures of the upper respiratory system

- Nasal cavity
- Oral cavity
- Pharynx
- Larynx

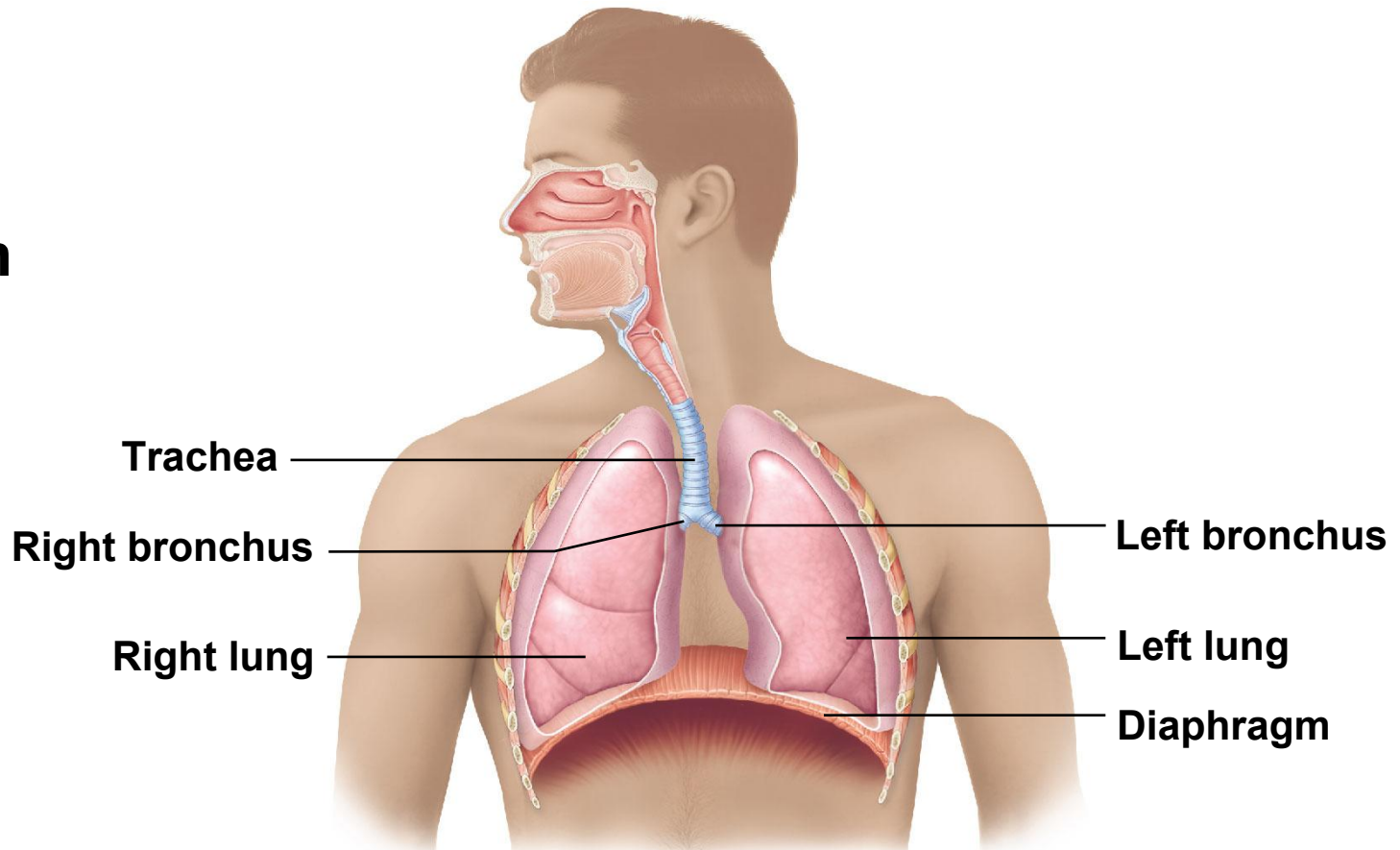


# Structures of the Upper Respiratory System



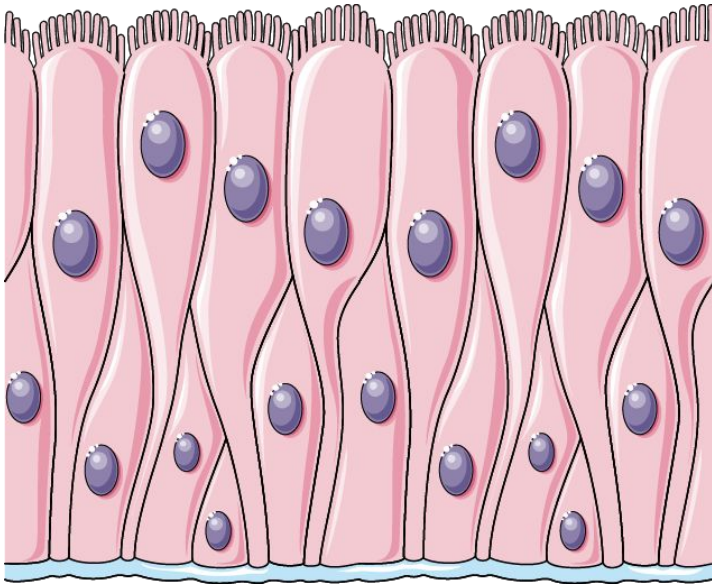
# Structures of the Lower Respiratory System

- Trachea
- Bronchi
- Alveoli
- Lungs
- Diaphragm



# Trachea

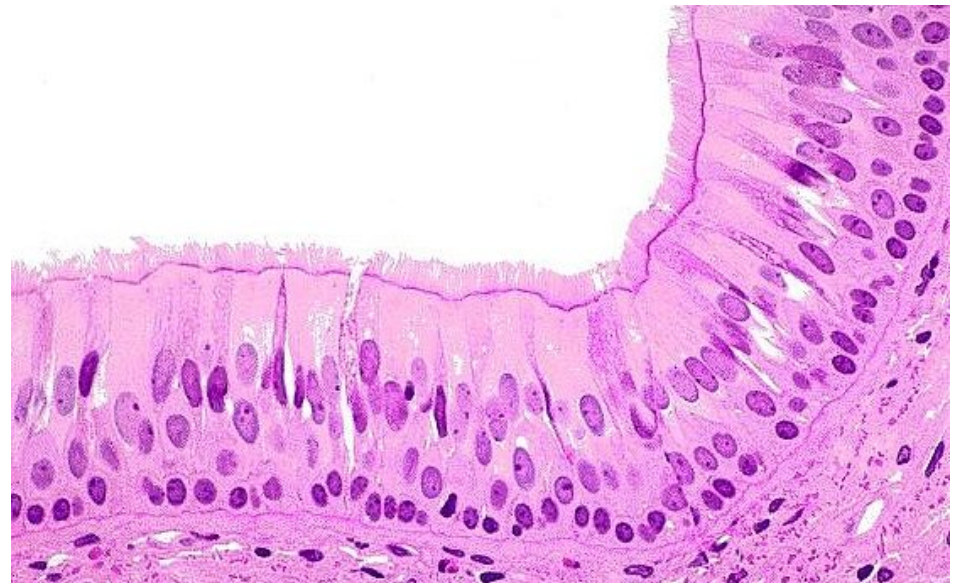
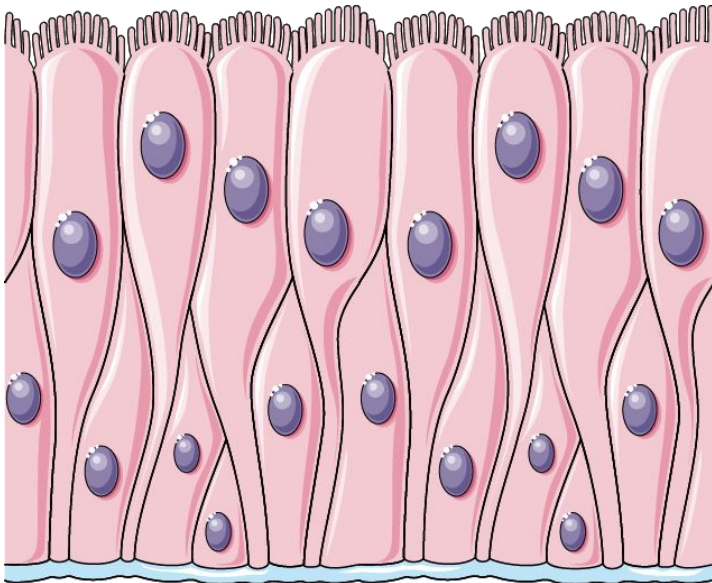
- Trachea = **windpipe**
  - Air enters the trachea from the **larynx**
  - Tube approximately 4 inches in length
  - Walls are lined with \_\_\_\_\_ epithelium



Students choose an option

# Trachea

- Trachea = **windpipe**
  - Air enters the trachea from the **larynx**
  - Tube approximately 4 inches in length
  - Walls are lined with **pseudostratified** epithelium
    - **Ciliated mucus-secreting** epithelium



# Trachea

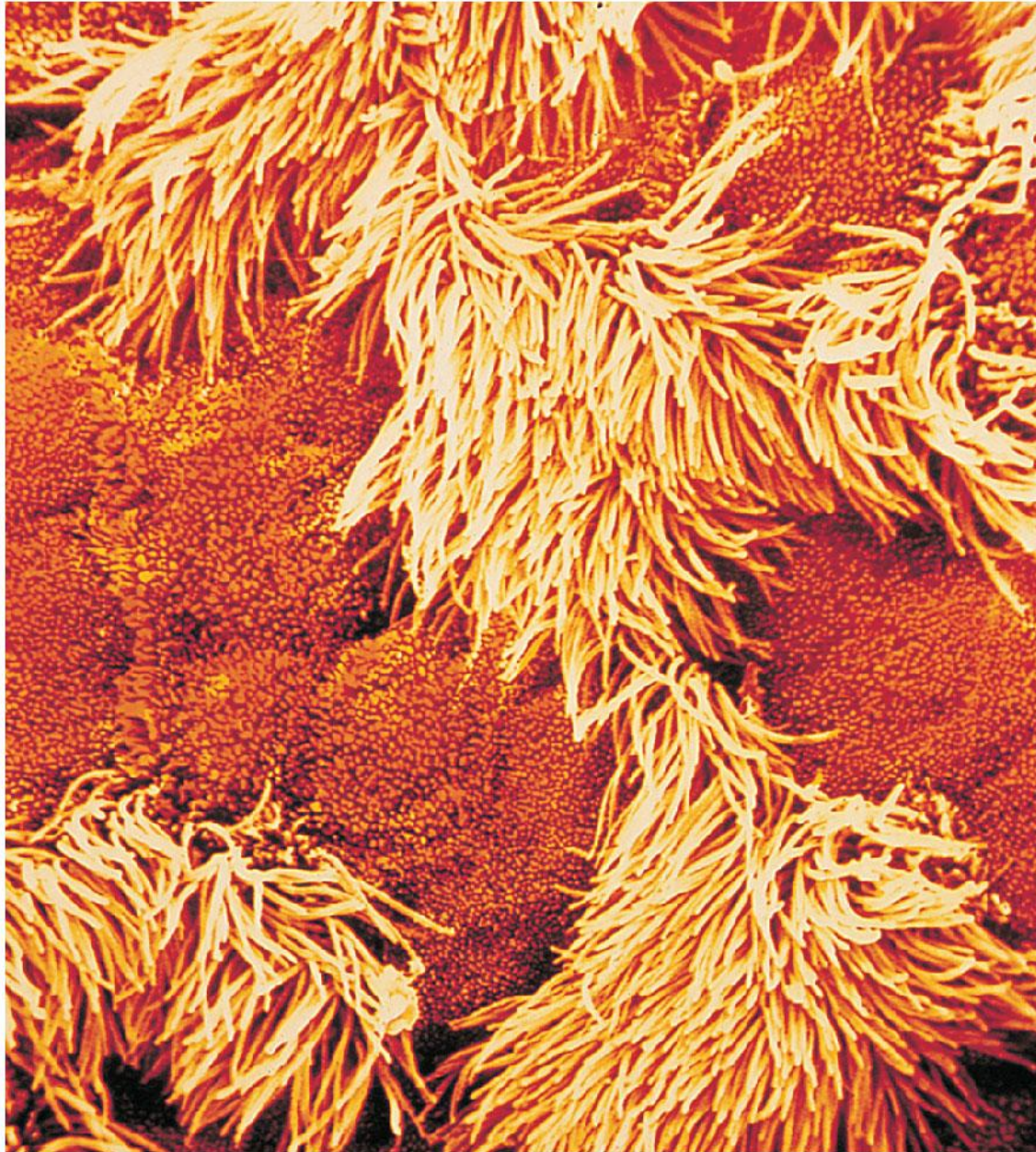
- What is the specific protective function of cilia in the trachea?



Students, write your response!

# Trachea

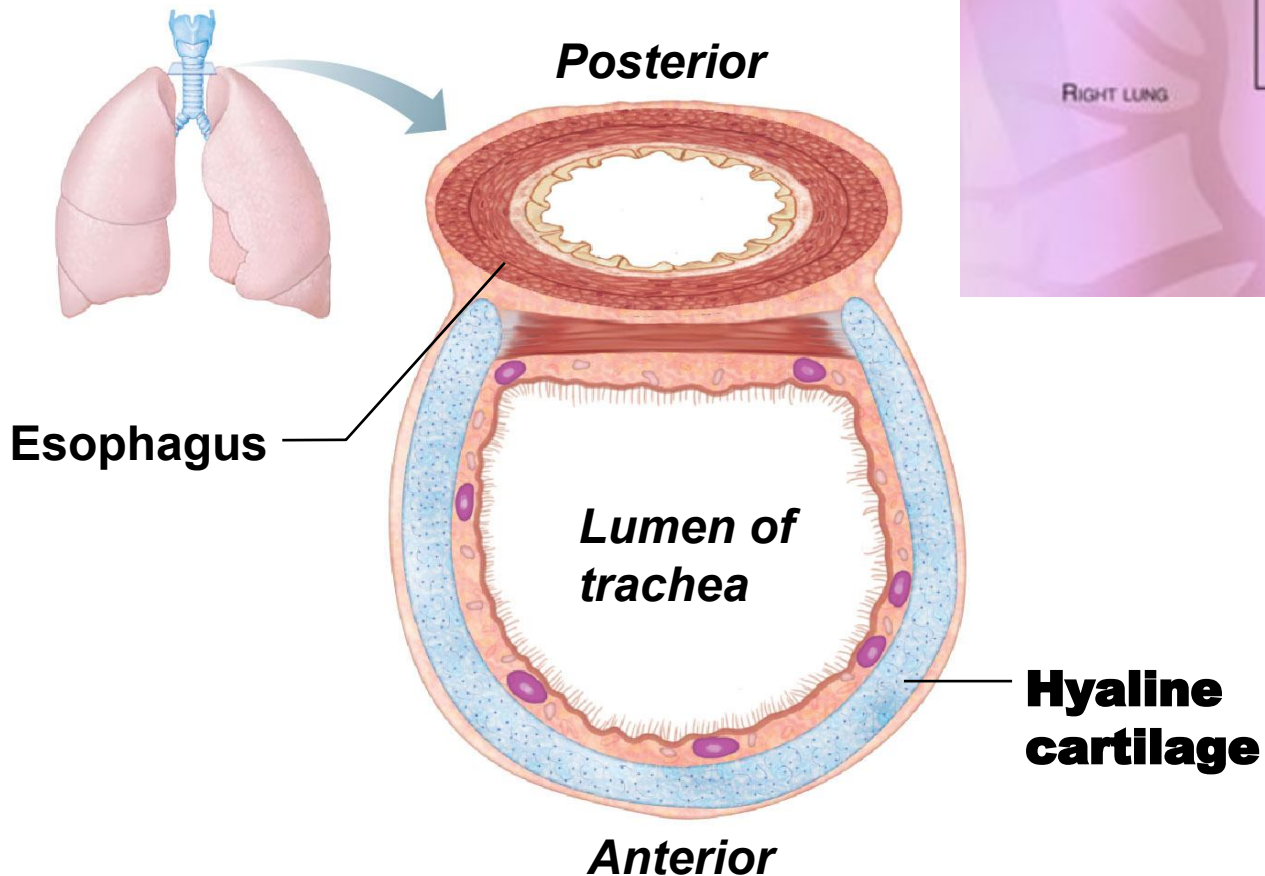
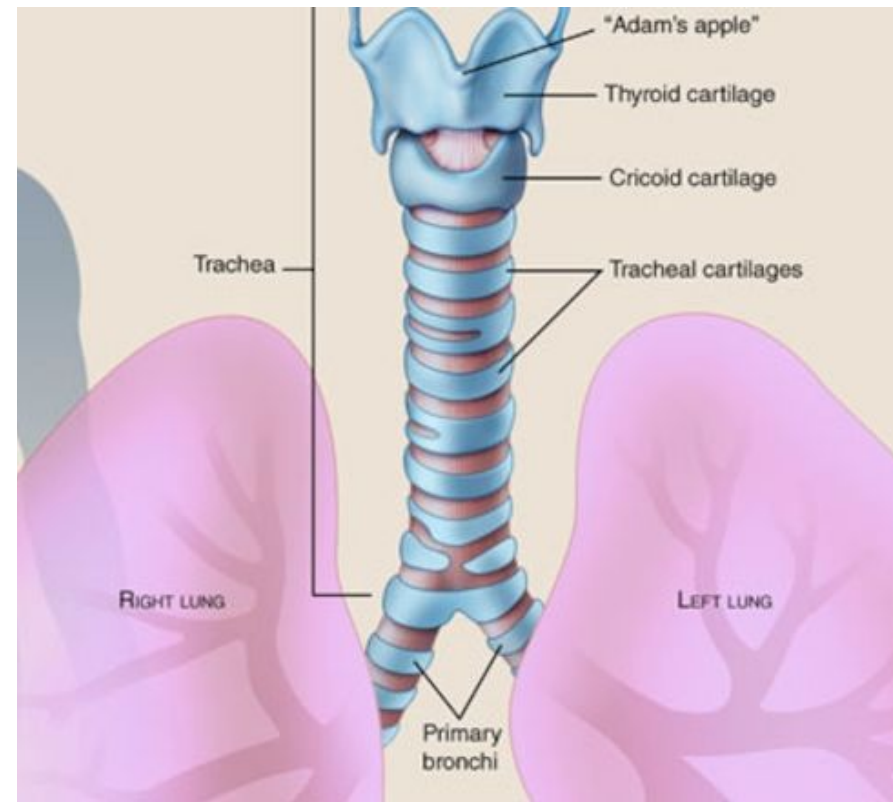
- Trachea = **windpipe**
  - Air enters the trachea from the **larynx**
  - Tube approximately 4 inches in length
  - Walls are lined with **pseudostratified** epithelium
    - **Ciliated mucus-secreting** epithelium
    - Cilia beat continuously in the **opposite direction** of incoming air
    - **Expel mucus** loaded with dust and other debris **away from lungs toward the pharynx**, where it can be spat out or swallowed





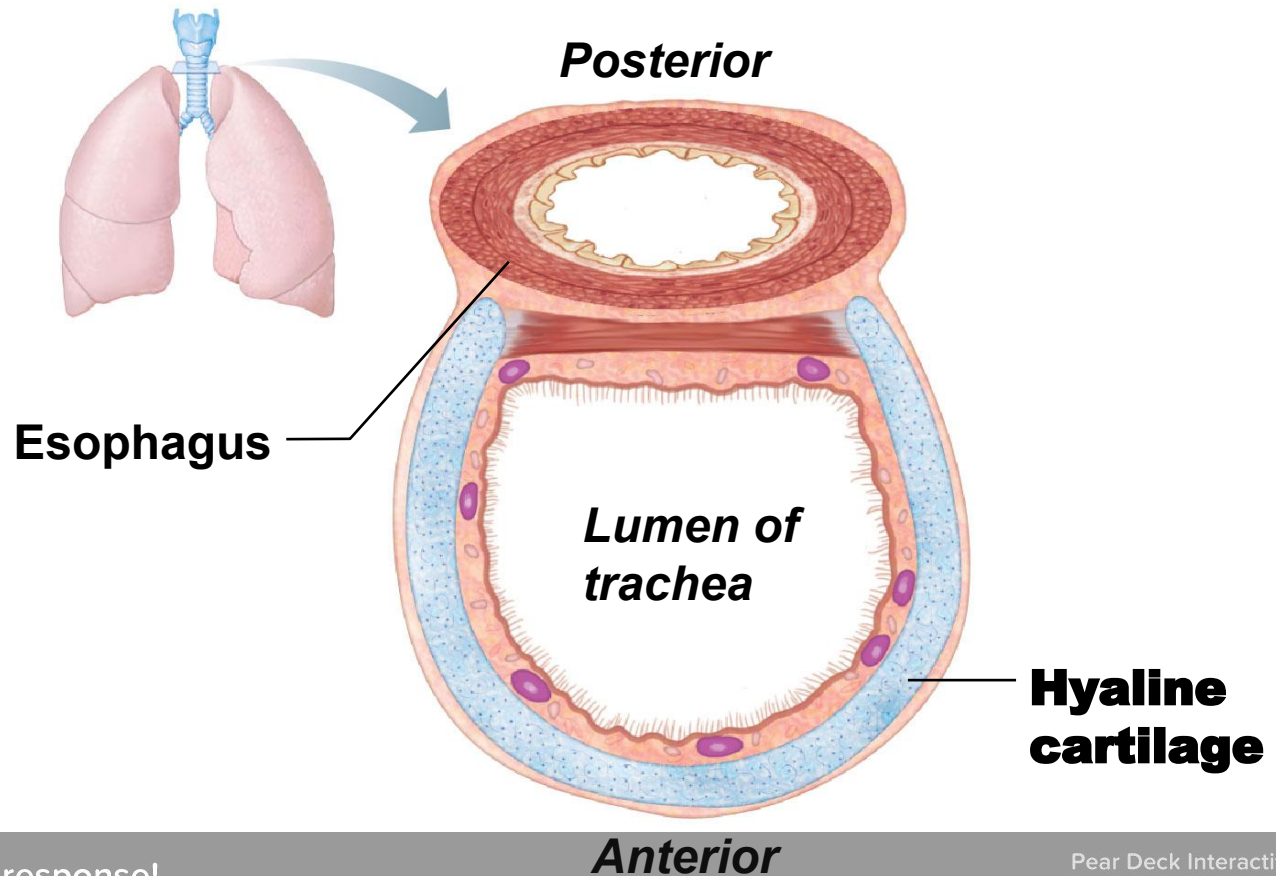
# Trachea

- Walls are reinforced with C-shaped rings of **hyaline cartilage**



# Trachea

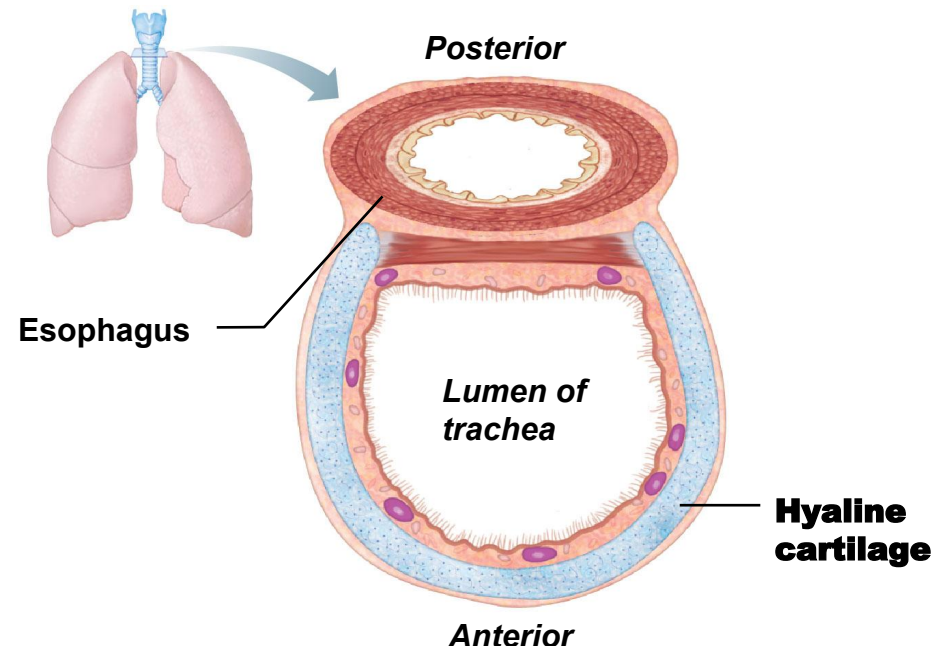
- These rings serve a double purpose. What are they?



Students, write your response!

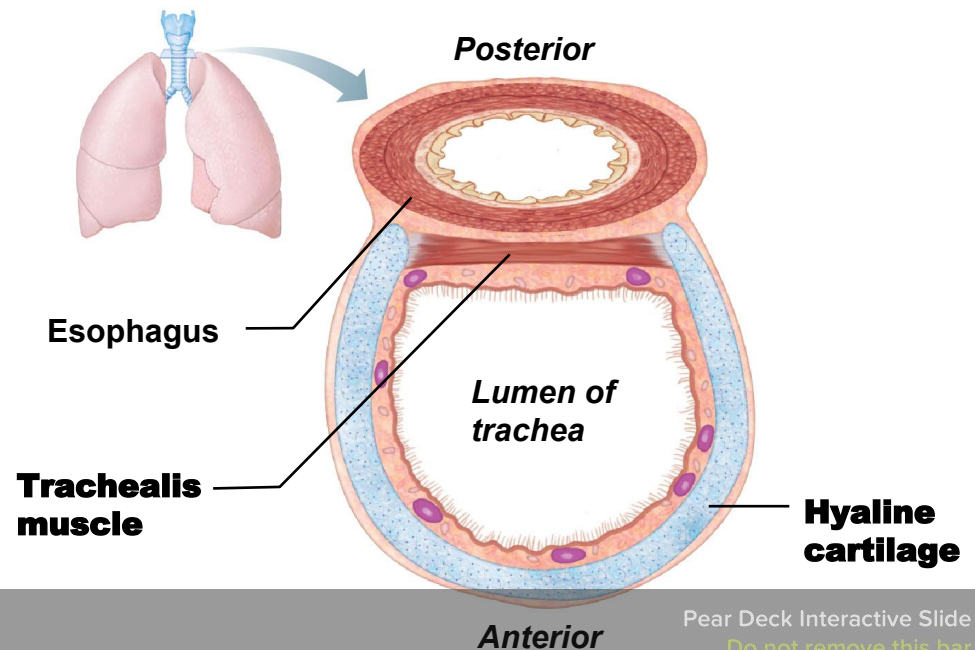
# Trachea

- Walls are reinforced with C-shaped rings of **hyaline cartilage**
  - Prevent the trachea from collapsing regardless of pressure changes that occur during breathing
  - Allow esophagus to expand anteriorly when we swallow food



# Trachea

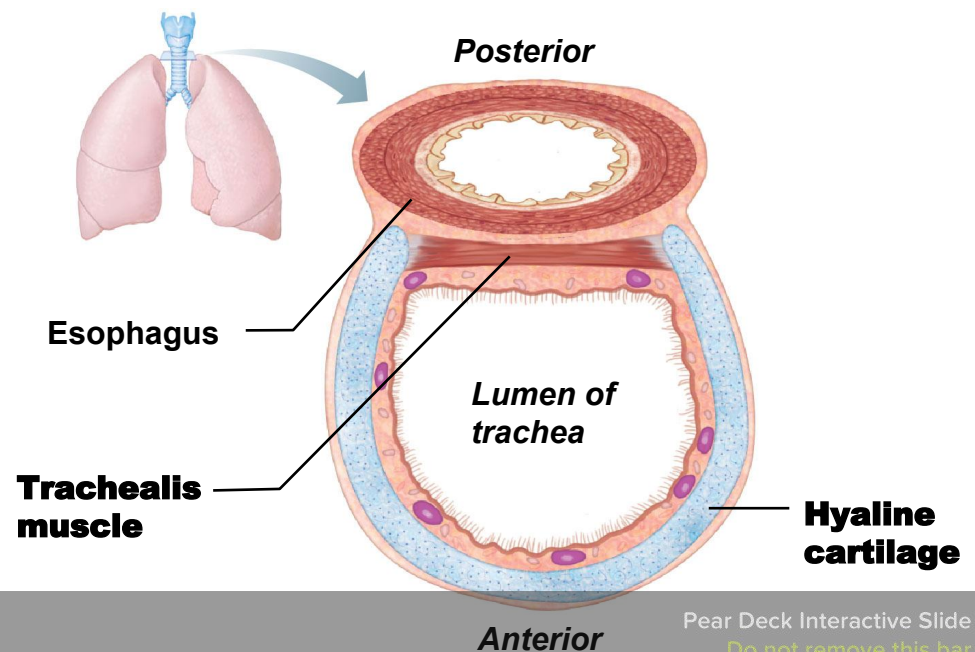
- The **trachealis muscle** is a smooth muscle that lies between the esophagus and the trachea
- What occurs when the trachealis muscle contracts, and in what activities might this action be very helpful?



Students, write your response!

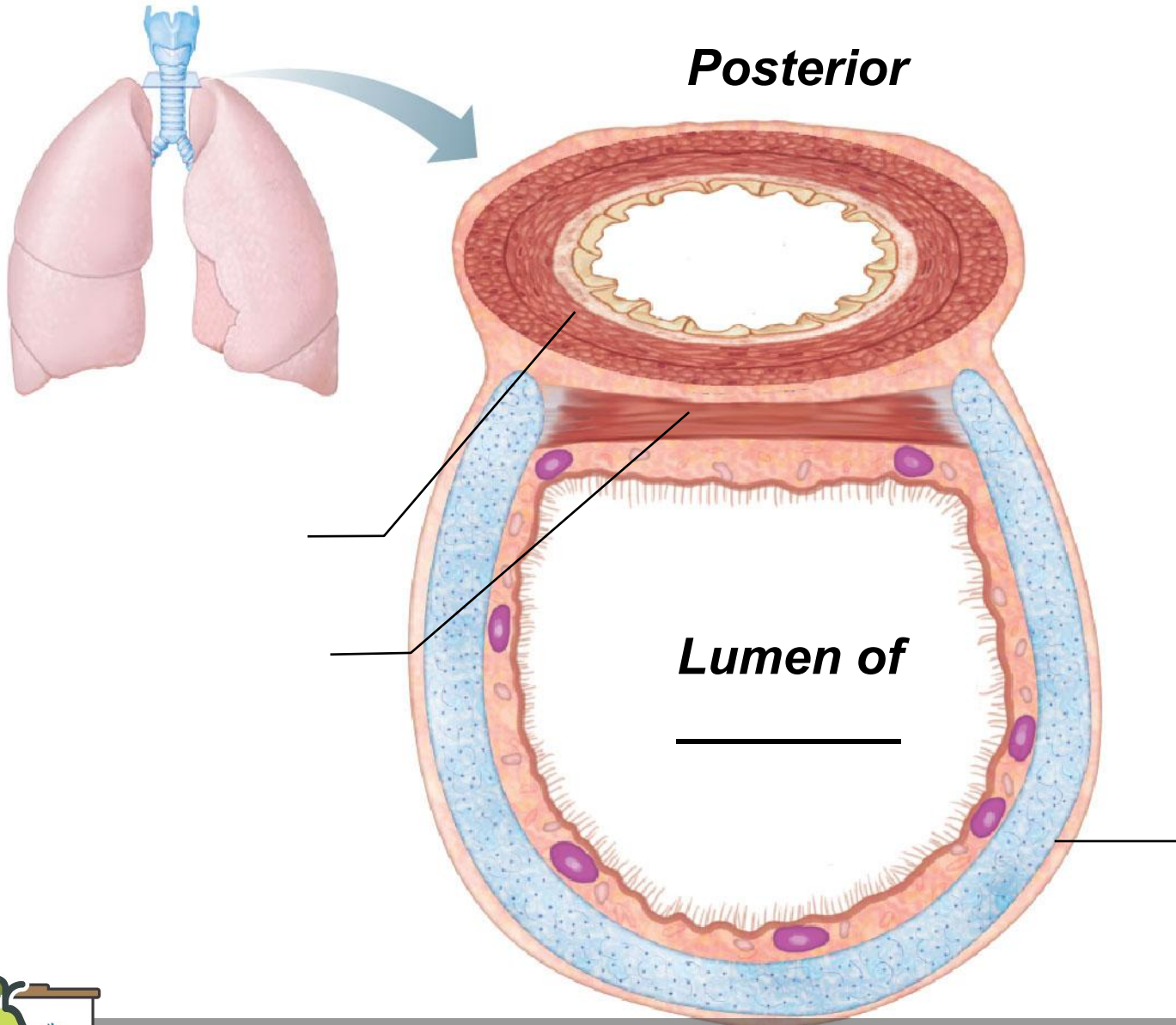
# Trachea

- The **trachealis muscle** is a smooth muscle that lies between the esophagus and the trachea
  - Function of the muscle is to **constrict the trachea, allowing air to be expelled with more force**
    - Example - **Coughing**



Students, write your response!

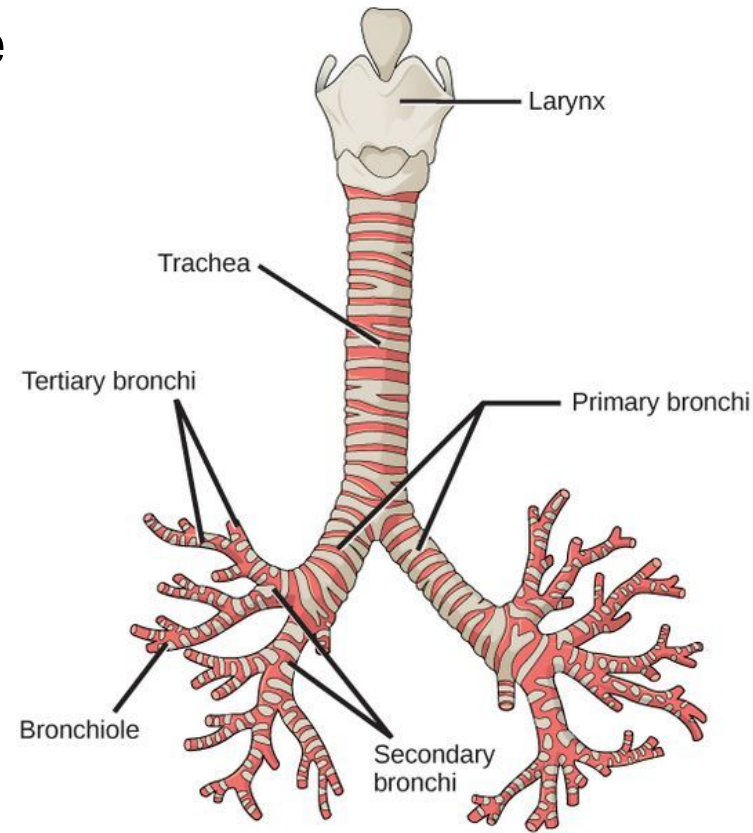
# Label the Structures



Students, draw anywhere on this slide! **Anterior**

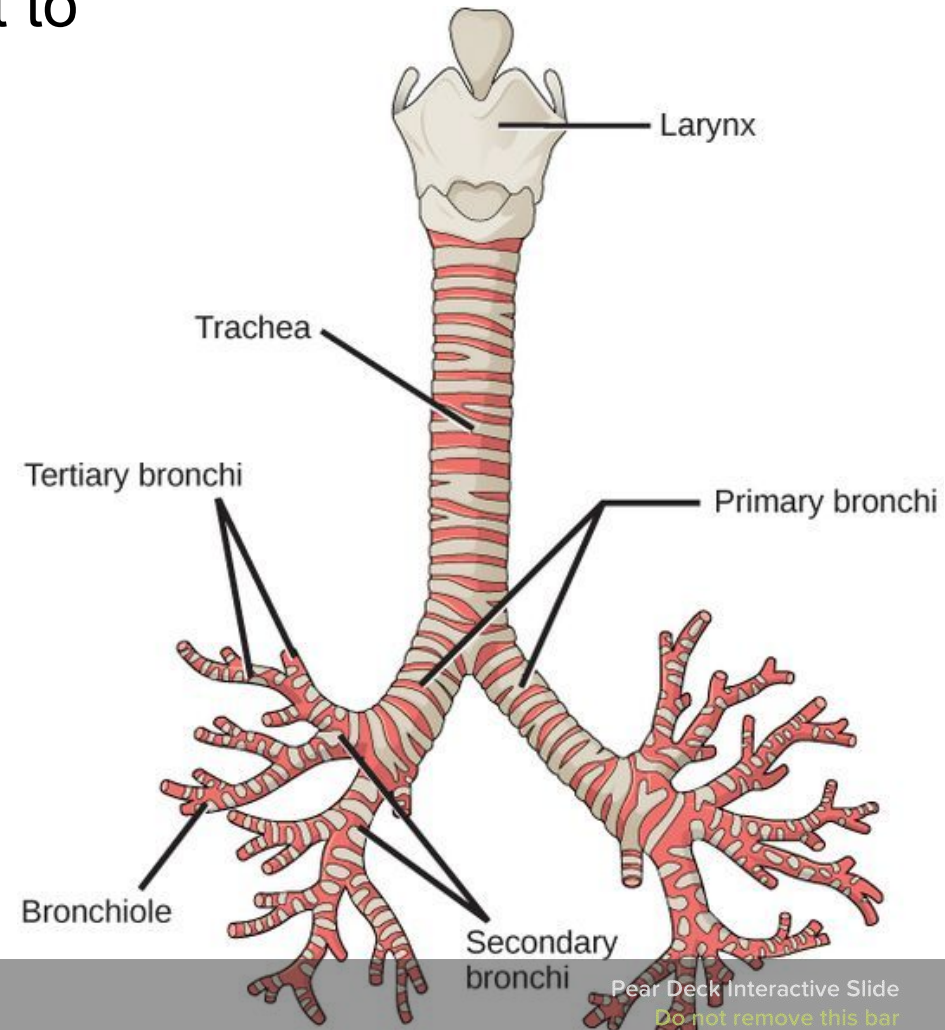
# Bronchi

- Bronchi are formed by the division of the **trachea**
- The primary right **bronchus** enters the right **lung**
- The primary left **bronchus** enters the left **lung**
  - Right bronchus is **wider, shorter, and straighter** than the left bronchus



# Bronchi

- Which primary bronchus is the most likely site for an inhaled object to become lodged? Why?



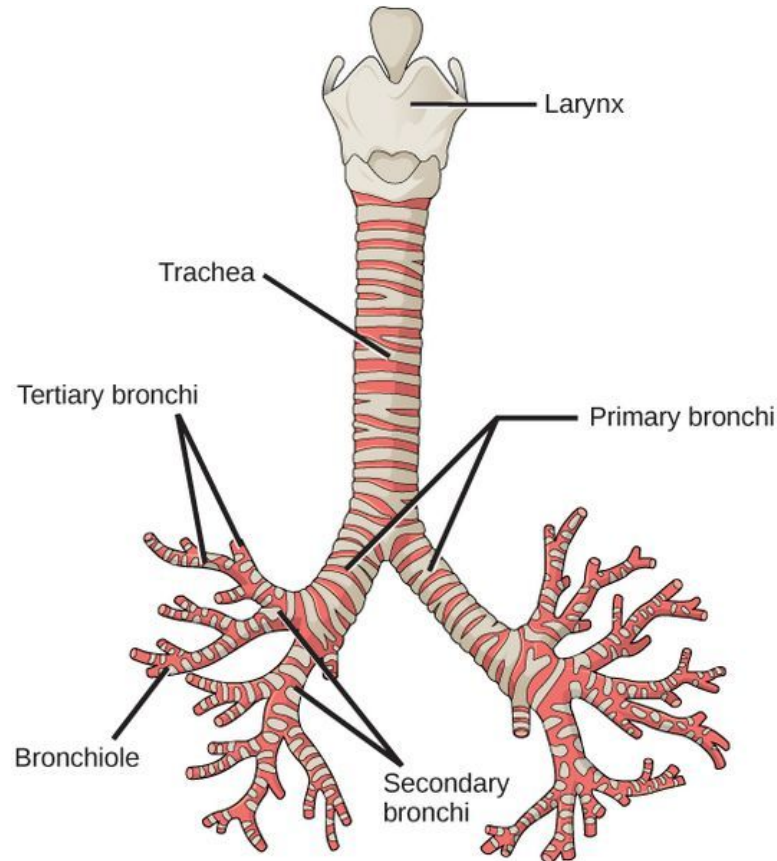
Students, write your response!

Pear Deck Interactive Slide  
Do not remove this bar



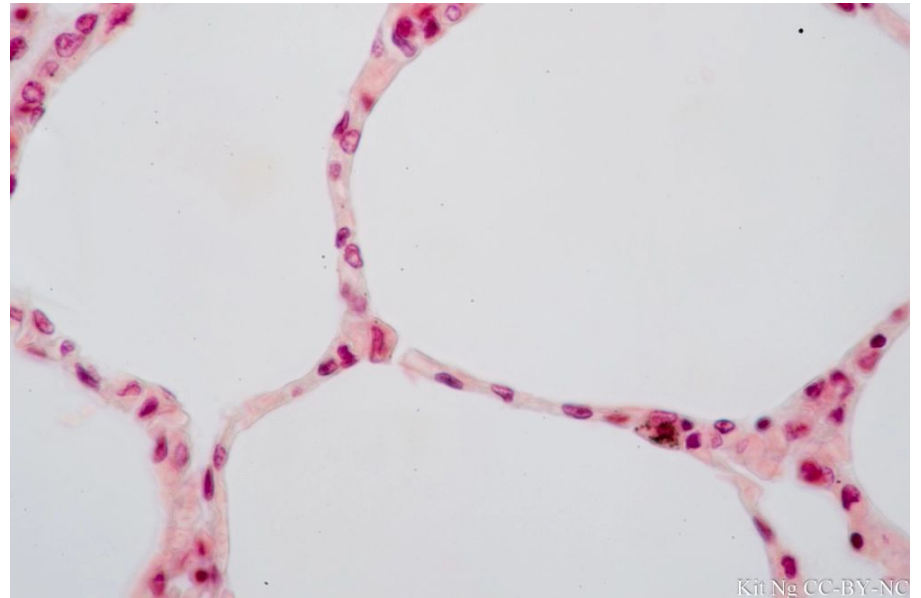
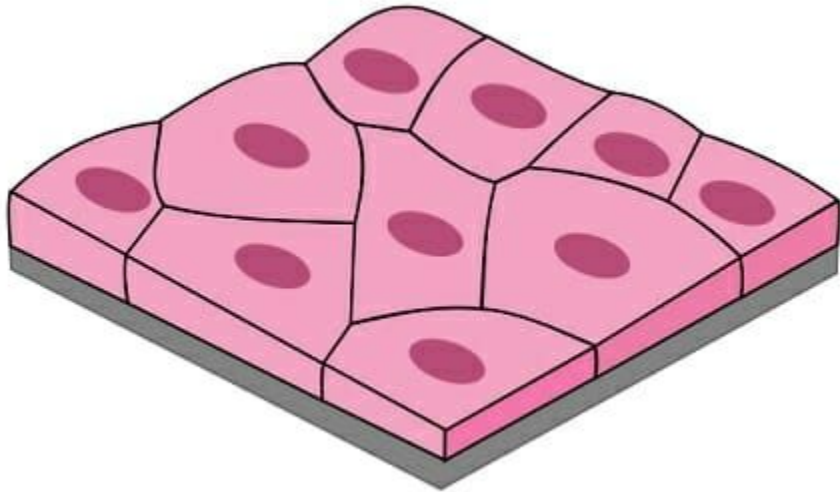
# Bronchi

- Bronchi subdivide into smaller and smaller branches (**secondary and tertiary bronchi**), finally ending in the smallest of the conducting passageways, the **bronchioles**



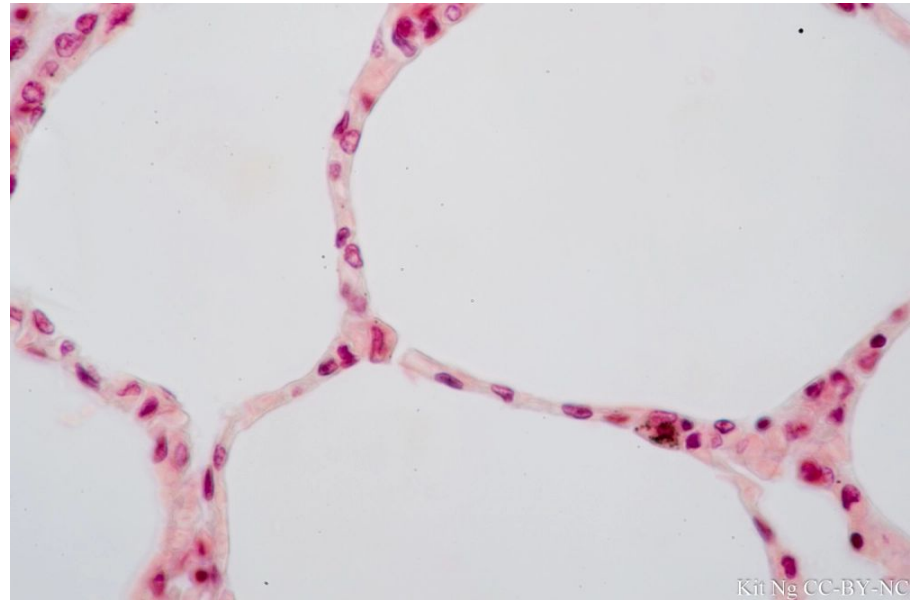
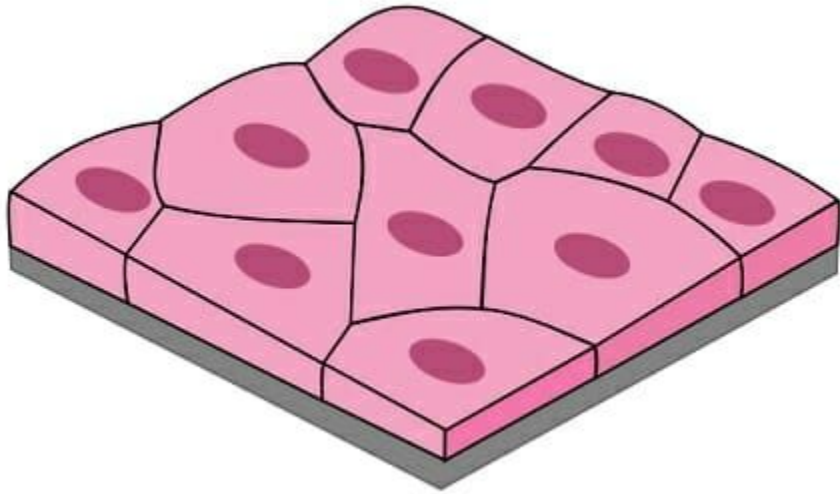
# Alveoli

- Terminal bronchioles lead into **alveoli**
- Alveoli
  - Sacs composed of \_\_\_\_\_ epithelial cells



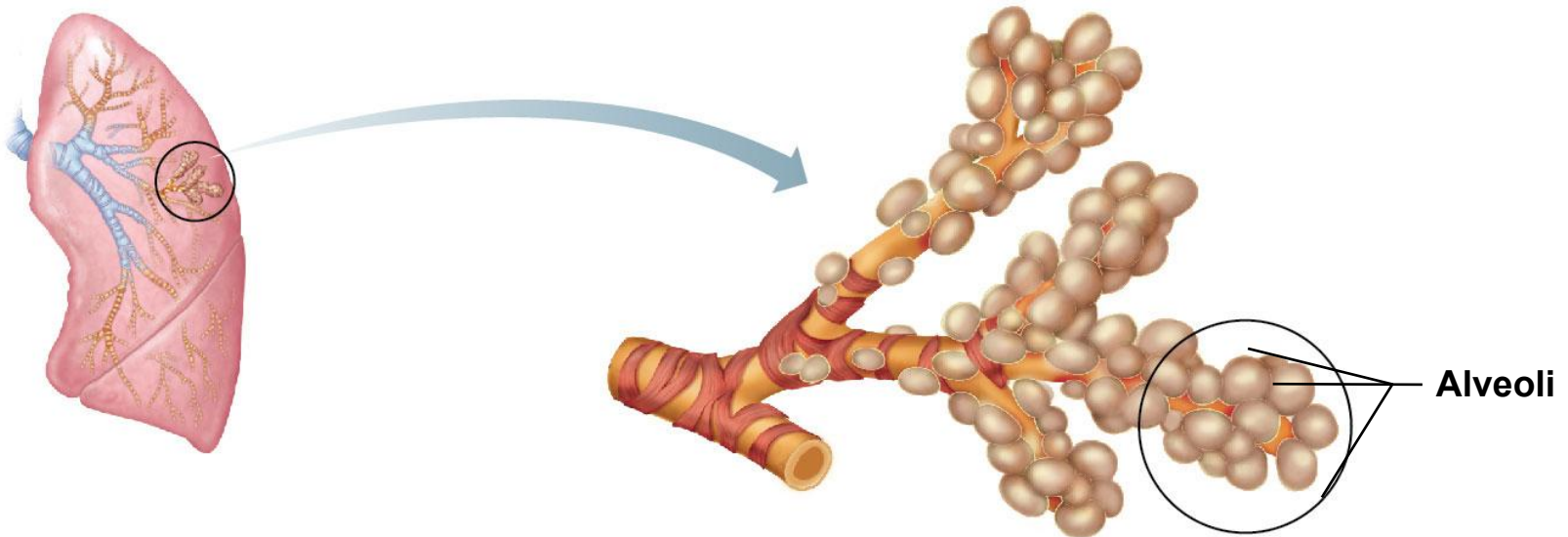
# Alveoli

- Terminal bronchioles lead into **alveoli**
- Alveoli
  - Sacs composed of **simple squamous** epithelial cells



# Alveoli

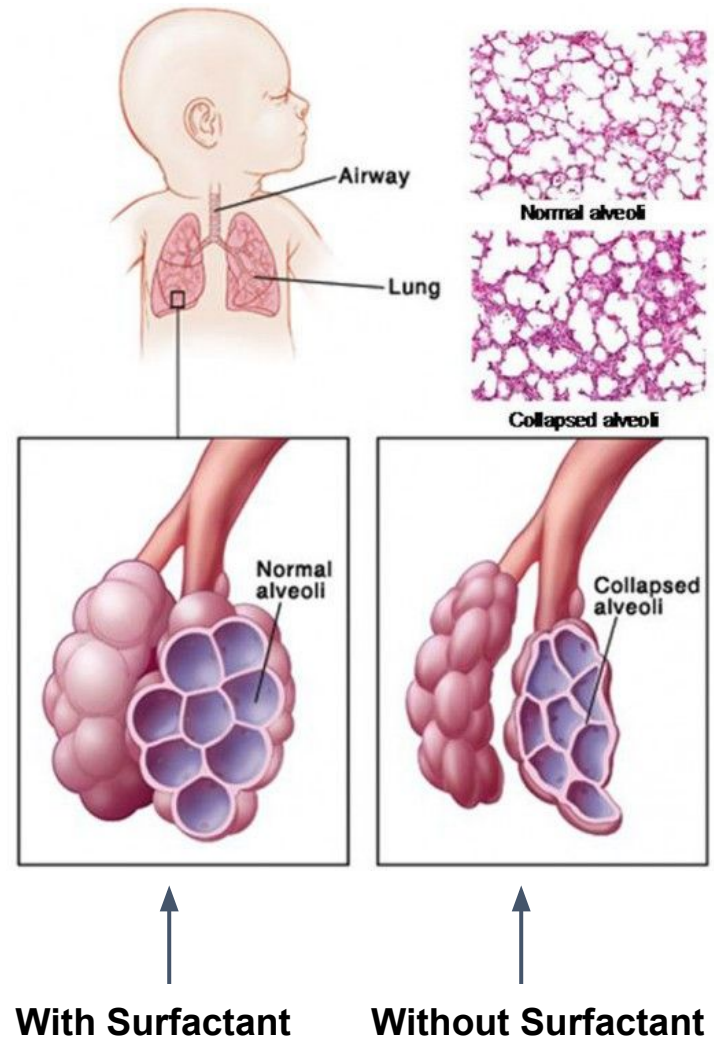
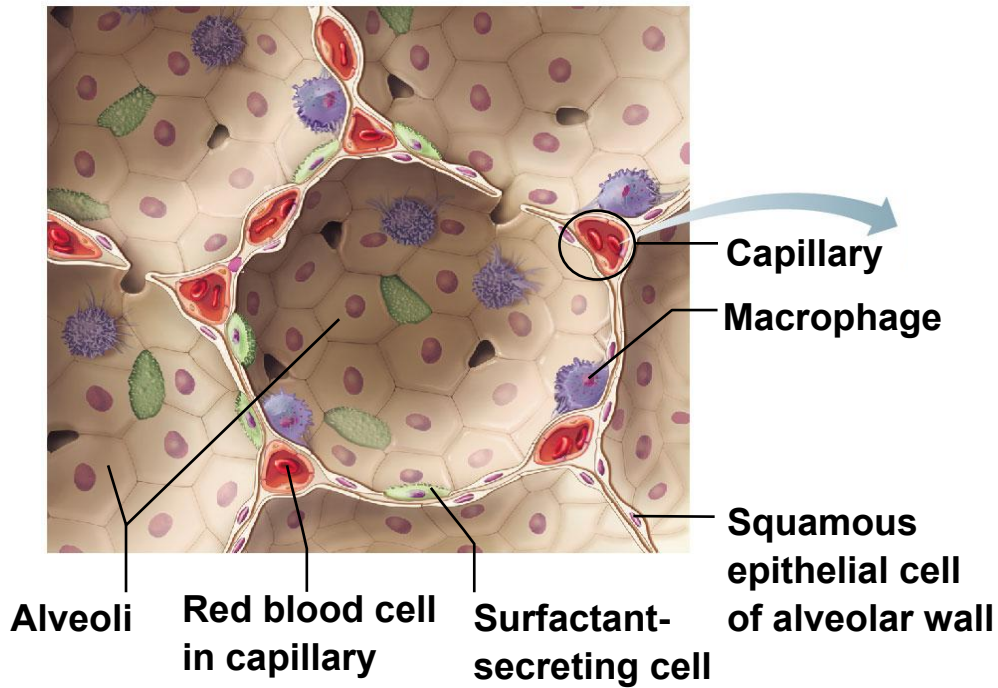
- Terminal bronchioles lead into **alveoli**
- Alveoli
  - Sacs composed of **simple squamous** epithelial cells
  - Site of **gas exchange with the blood**
- Pulmonary capillaries cover **external surfaces of alveoli**



# Alveolar Accessory Structures

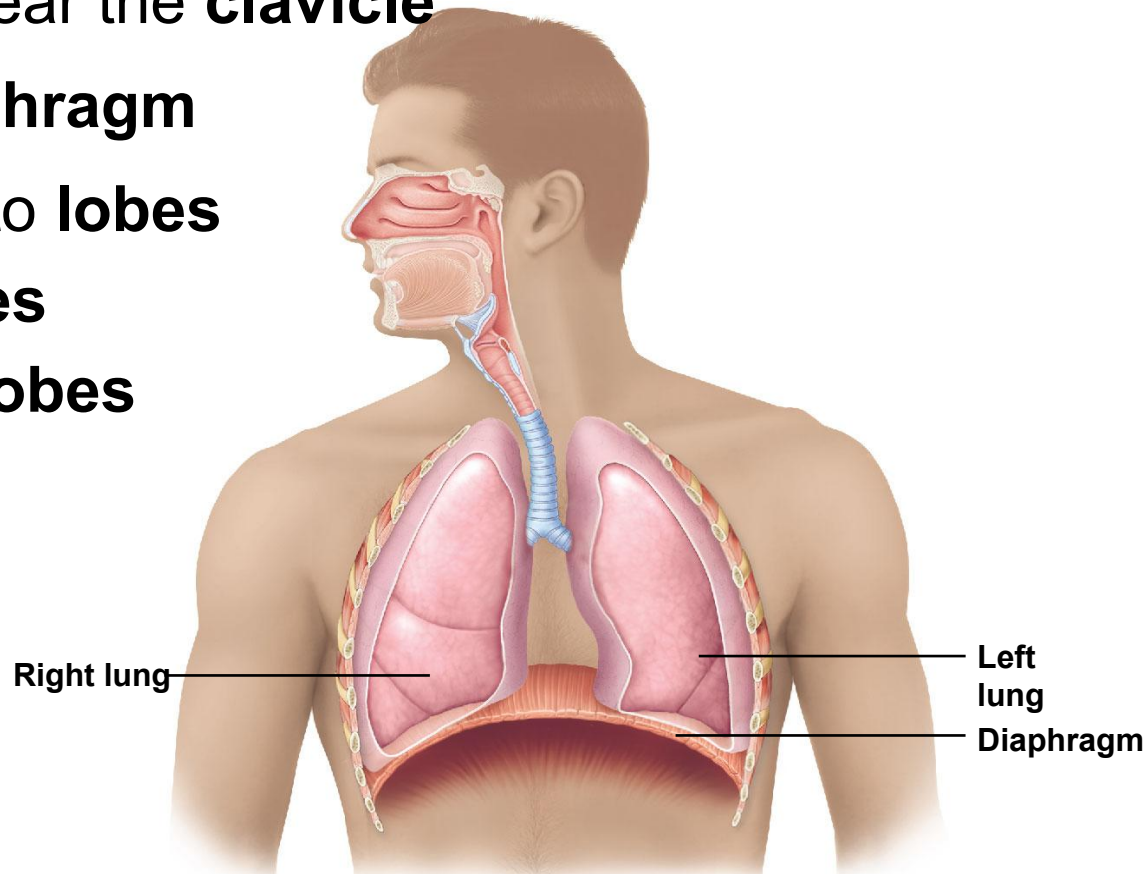
- **Alveolar macrophages**
  - “Dust cells”
  - **Add protection by picking up bacteria, carbon particles, and other debris**
- **Surfactant**
  - **Lipid** molecule
  - Secreted by **cuboidal epithelial** cells
  - **Lowers the surface tension** of the film of water lining each alveolar sac so that the alveoli do NOT collapse between each breath

# Alveolar Accessory Structures



# The Lungs

- Transport **oxygen** to the **blood supply**
- Occupy the entire **thoracic cavity** except for the central mediastinum
- **Apex** of each lung is near the **clavicle**
- **Base** rests on the **diaphragm**
- Each lung is divided into **lobes**
  - Left lung—**two lobes**
  - Right lung—**three lobes**

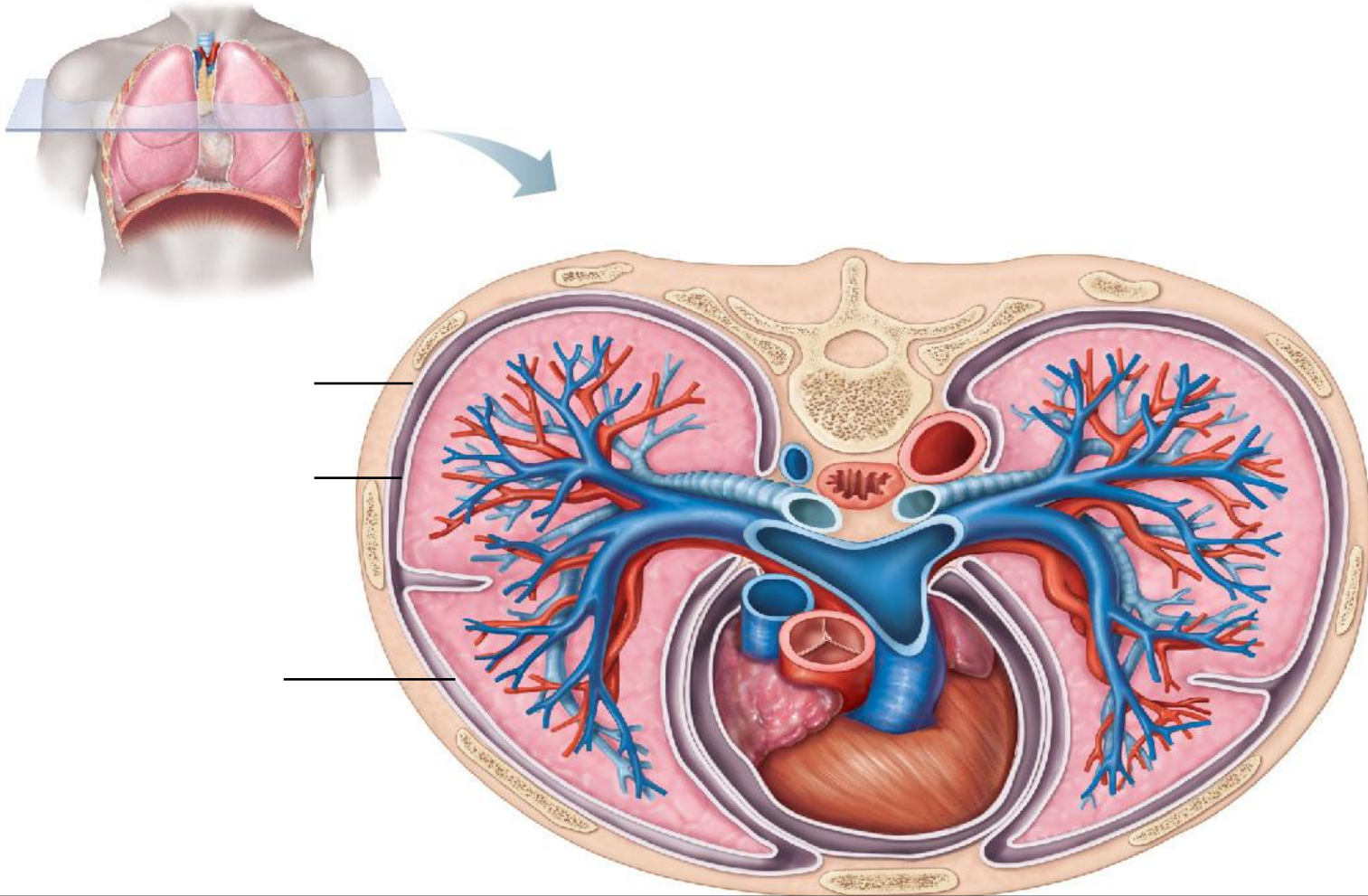


# Coverings of the Lungs

- **Serosa** covers the outer surface of the lungs
  - **Pulmonary (visceral) pleura** covers the lung surface
  - **Parietal pleura** lines the walls of the thoracic cavity
- **Pleural fluid** fills the area between layers
  - **Decreases friction during breathing**

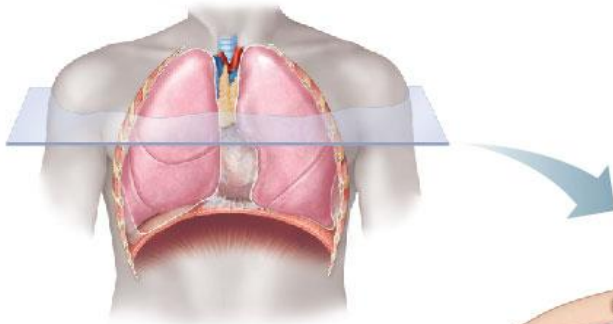


# Label the Visceral Pleura, Parietal Pleura, and Pleural Cavity



Students, draw anywhere on this slide!

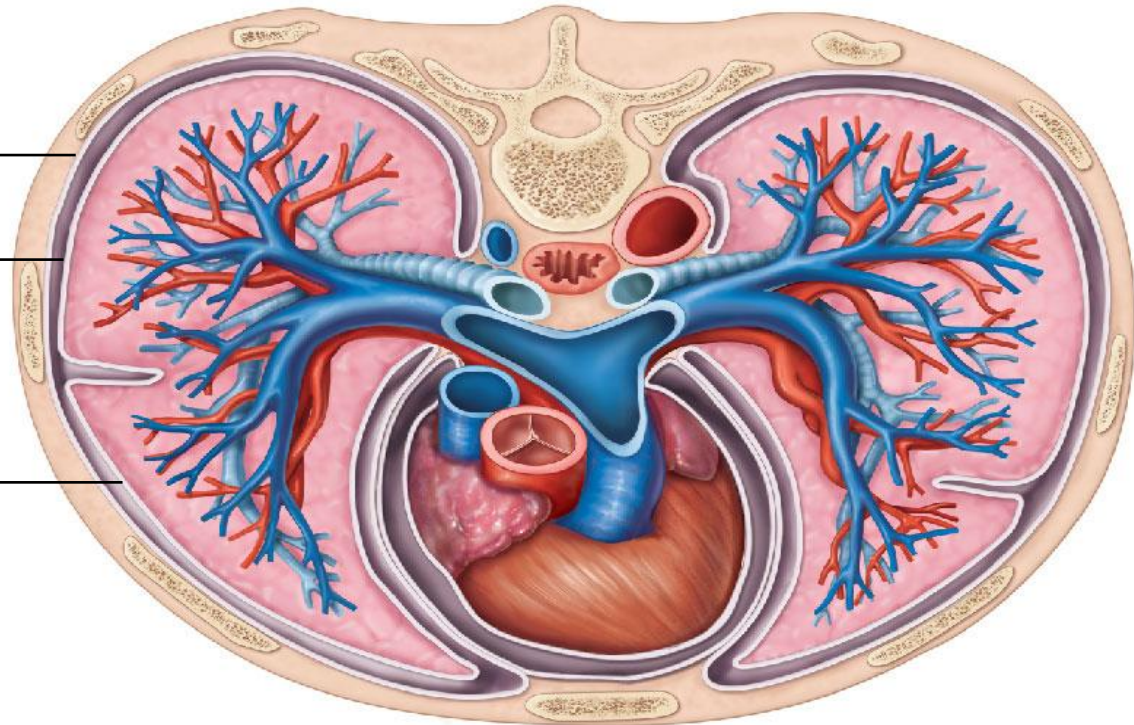
# Label the Visceral Pleura, Parietal Pleura, and Pleural Cavity



Parietal pleura

Visceral pleura

Pleural cavity



# Diaphragm

- **Muscle** that functions in **respiration**
- Separates the **abdominal cavity** from the **thoracic cavity**

