

Bio& 242: Unit 2/ Lab 3

Respiratory System Anatomy

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1. NOSE AND NASAL CAVITY:

| | | |
|---|--|----------------------|
| External nares | Frontal sinus | Hard palate |
| Internal nares | Nasal conchae (superior, middle, inferior) | |
| Nasal meatuses (superior, middle, inferior) | | Nasal septum |
| Nasopharynx | Nostrils | Olfactory epithelium |
| Orifice of Eustachian tube | Oropharynx | Palatine tonsil |
| Soft palate | Sphenoidal sinus | Uvula |
| Vestibule | Ethmoid sinus | |

2. LARYNX:

| | | |
|---------------------------------------|-----------------------|--------------------------------|
| Arytenoid cartilage | Corniculate cartilage | Cricoid cartilage |
| Epiglottis | Glottis | Laryngeal sinus |
| Laryngopharynx | Thyroid cartilage | |
| Ventricular folds (false vocal cords) | | Vocal folds (true vocal cords) |

3. TRACHEA:

| | |
|-------------------|------------------------------|
| Carina | Tracheal cartilage (hyaline) |
| Trachealis muscle | |

4. BRONCHI: (Left & Right Side)

| | | |
|-----------------|----------------------|-------------------------|
| Primary bronchi | Secondary bronchi | Tertiary bronchi |
| Bronchioles | Terminal bronchioles | Respiratory bronchioles |
| Alveolar ducts | | |

5. LUNGS: (Left & Right)

(EXTERNAL ANATOMY)

| | | |
|--------------------|--------------------|-----------------|
| Apex | Base | Hilus |
| Horizontal fissure | Inferior lobe | Middle lobe |
| Oblique fissure | Pulmonary arteries | Pulmonary veins |
| Superior lobe | Cardiac notch | |

(INTERNAL ANATOMY)

| | | |
|-------------------------|-------------------------|------------|
| Alveolar ducts | Alveolar sacs | Alveolus |
| Lobules | Respiratory bronchioles | Surfactant |
| "Type 1" Alveolar cells | "Type 2" Alveolar cells | |

RESPIRATORY MUSCLES:

Principal Muscles of Inspiration:

Diaphragm

Accessory Muscles of Inspiration:

External intercostals Pectoralis minor Scalenes
Sternocleidomastoid

Principal muscles of expiration:

No active muscles- Diaphragm relaxes

Muscles of Expiration:

External Obliques Internal Intercostals Internal Obliques
Rectus Abdominus Transversus Abdominus

Slide #66 = Tertiary bronchi

Observe under low power first. You will find lung tissue and cut tubes. The largest tube will be a Tertiary Bronchi. Space at center is the lumen. After you understand the overview of the slide you should switch to high power.

Observe Mucosa = Pseudostratified Ciliated Columnar Epithelium.

Observe submucosa = Areolar connective tissue that contains seromucous glands

Observe cartilage bands = Hyaline Cartilage

Slide #67 = Lung

Observe under low power first and then switch to high power. Most of the open spaces observed are lumen of Alveoli.

Observe Alveoli =The thin bridges of tissue seen are walls of alveoli composed of Type I Alveolar cells which are largely simple Squamous on both sides of these bridges with capillary beds sandwich between.

Observe Alveolar sacs = groups of Alveoli supplied by the same Alveolar duct.

Observe Alveolar ducts = Branches off respiratory bronchioles with a mucosa of simple squamous.

Observe Respiratory bronchiole = Branches off Terminal Bronchiole, the Mucosa makes a transition from simple Cuboidal to simple squamous.

**You may also be able to observe Terminal bronchiole, look for a mucosa lining of simple cuboidal.

Slide #68 = Trachea

Observe under low power first. If your slide contains a complete x-section of the Trachea the clear opening in center is the lumen. If your slide contains a partial x-section of the Trachea the inner curve would have lined the lumen. After you understand the overview of the slide you should switch to high power.

Observe Mucosa = Pseudostratified Ciliated Columnar Epithelium.

Observe submucosa = Areolar connective tissue that contains seromucous glands

Observe Tracheal cartilage = Hyaline Cartilage "C" rings that are incomplete on their posterior sides. The "C" rings of cartilage are connective by the Trachealis muscle (transverse smooth muscle and elastic connective tissue). The Trachealis muscle is found on the opposite side of the lumen from the hyaline cartilage

Observe the. Adventitia = Most superficial layer composed of Areolar connective tissue. Some slides may not have the adventitia attached.