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|---|----------------------------------|
| الصيدلة                                     | الكلية                           |
| العلوم المخبرية السريرية                    | القسم                            |
| Histology                                   | المادة باللغة الانجليزية         |
| علم الانسجة                                 | المادة باللغة العربية            |
| الاولى                                      | المرحلة الدراسية                 |
| م.م عذراء بشير راضي                         | اسم التدريسي                     |
| Respiratory System                          | عنوان المحاضرة باللغة الانجليزية |
| جهاز التنفسي                                | عنوان المحاضرة باللغة العربية    |
| الخامسة                                     | رقم المحاضرة                     |
| Junqueira's Basic Histology: Text and Atlas | المصادر والمراجع                 |

#### محتوى المحاضر

##### ❖ Upper respiratory system

Nose, pharynx and associated structures

##### ❖ Lower respiratory system

Larynx, trachea, bronchi and lungs

##### ❖ Conducting portion

Nose, pharynx, larynx, trachea, bronchi, bronchioles and terminal bronchioles

##### ❖ Respiratory portion

main site of gas exchange Respiratory bronchioles, alveolar ducts, alveolar sacs, and alveoli

## The Nasal Cavities

The nasal cavities are lined by a **ciliated pseudostratified columnar epithelium** containing the cell bodies of bipolar nerve (olfactory) cells. these olfactory cells contain proteins that act as odorant receptors.

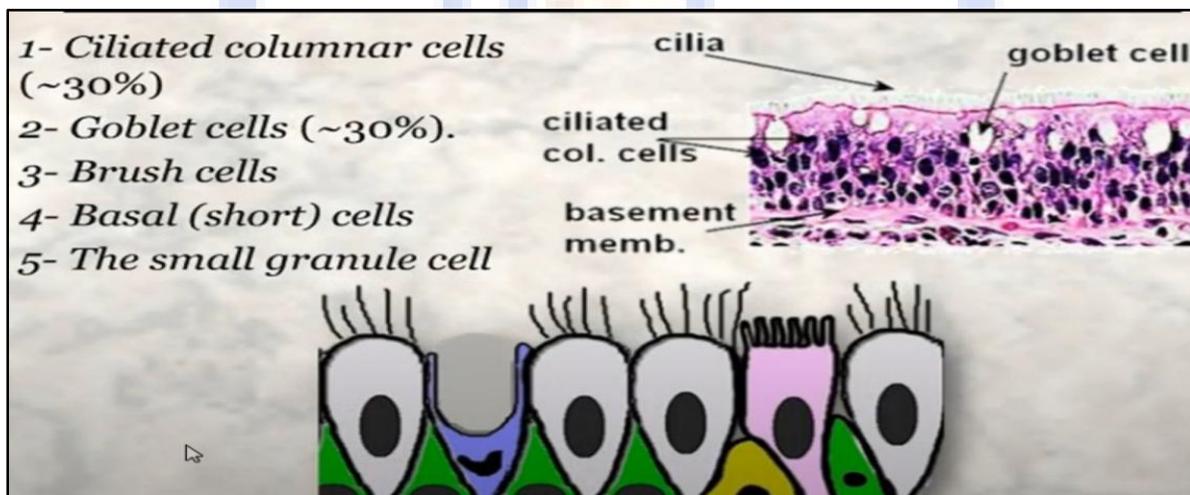
### Mucosa of The Nasal Cavities

The mucosa of the nasal cavities has:

- **Olfactory Nerves**
- **Olfactory Glands** that secrete onto the epithelial surface a proteinaceous substance, that keeps the surface moist and provides a trap for aromatic substances.

### Trachea

- ▶ Trachea: connects larynx to primary bronchi
- ❖ Mucosa: respiratory epithelium ciliated pseudostratified columnar epithelium and lamina propria
- ❖ **Ciliated cells, goblet cells, basal cells, and neuroendocrine cells**



- ❖ Submucosa: dense connective tissue and seromucous glands
- ❖ Hyaline cartilage: C-shaped; some smooth muscle (trachealis) to stabilize opening

- ❖ Adventitia: connective tissue that covers cartilage

### **Primary Bronchi (Extra Pulmonary Bronchi)**

- Similar structure to trachea except the cartilaginous ring completely encircle the lumen
- Right is wider and more vertical than the left

### **Secondary Tertiary ( Intra Pulmonary Bronchi )**

- **Mucosa:** respiratory epithelium as seen in trachea and primary bronchi
- **Smooth muscle** band between submucosa and mucosa
- **Submucosa:** seromucous glands
- **Hyaline cartilage:** plates discontinues
- **Adventitia:**

### **Respiratory**

- **Respiratory bronchioles:** tubes between alveoli
- The bronchioles are lined by simple cuboidal ciliated epithelium, have no hyaline cartilage or submucosal glands, Clara cells are also present.

### **Respiratory Portion: Alveolar ducts and alveoli**

- Ducts are lined by squamous alveolar cells (type I pneumocytes) with knobs of cuboidal cells
- Each duct functions as a corridor to connect several alveoli