

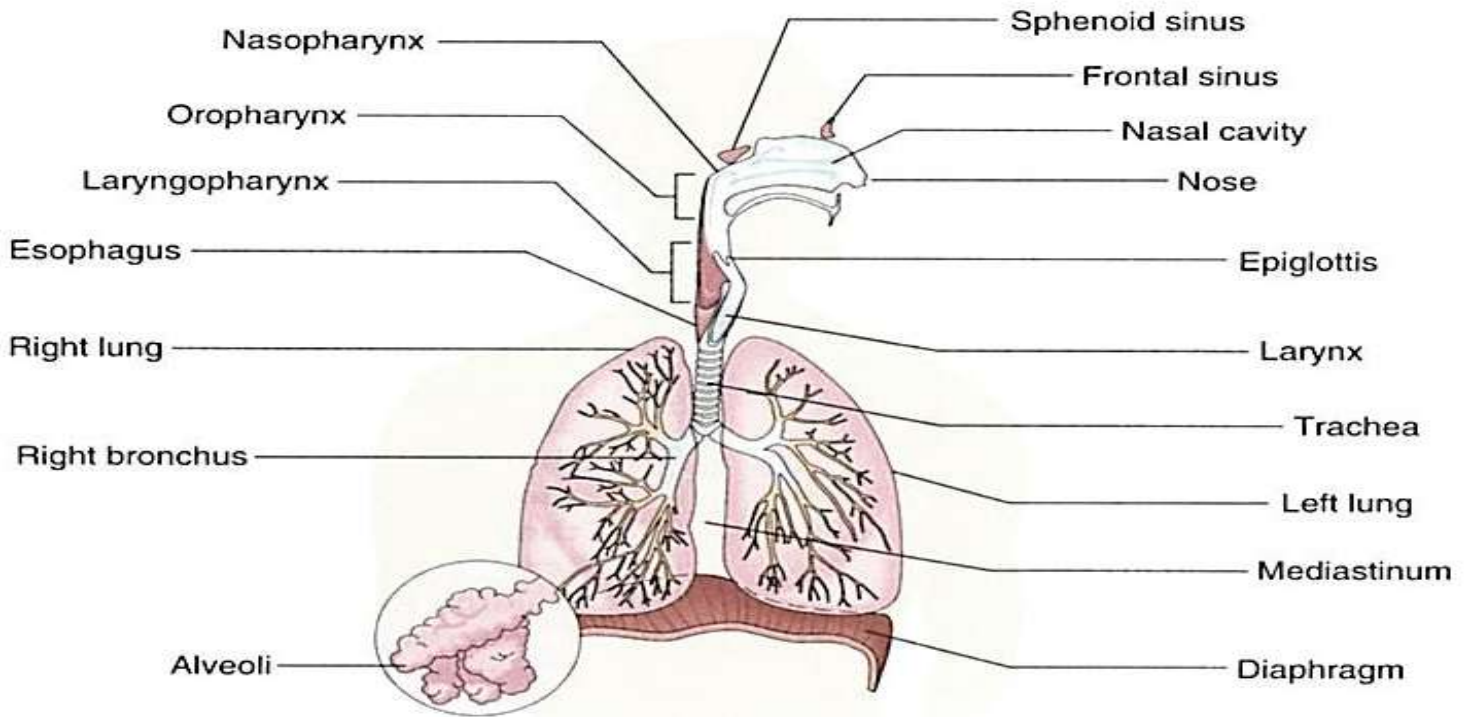
## The Respiratory System

### FUNCTIONS:

- 1.
- 2.
- 3.

### STRUCTURES

The respiratory system is categorized into 2 regions: the \_\_\_\_\_ and \_\_\_\_\_ tracts.

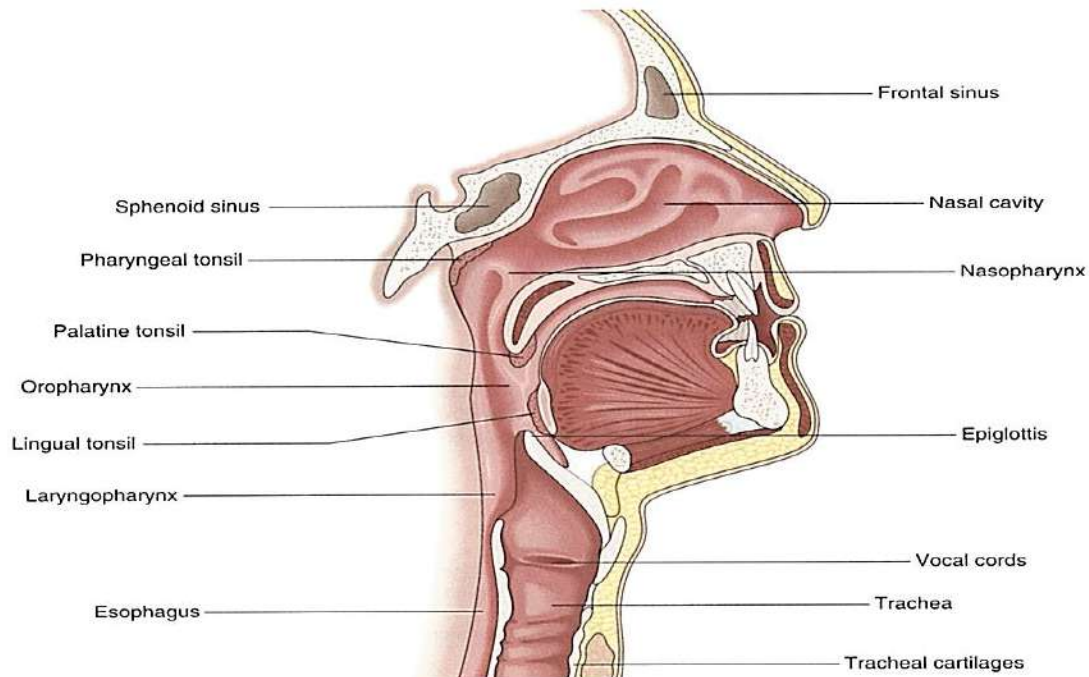


#### **A. Upper Tract**

##### **a. Nose**

- Nasal cavity-
- Septum-
- Mucous membrane- layer of thin tissue that lines the nose and entire respiratory system
- Mucus-
- Cilia-
- Olfactory receptors-

## The Respiratory System



### b. Tonsils-

c. **Sinuses-** An air-filled cavity within a bone that is lined with mucous. They affect:

#### i. Paranasal sinuses:

Table 7.1

### PARANASAL SINUSES

**Maxillary sinuses** (**MACK-sih-ler-ee**), located in the maxillary bones, are the largest of the paranasal sinuses.

The **ethmoid sinuses** (**ETH-moid**), located in the ethmoid bones, are irregularly shaped air cells that are separated from the orbital (eye) cavity only by a thin layer of bone.

**Frontal sinuses** are located in the frontal bone just above the eyebrows.

The **sphenoid sinuses** (**SFEE-noid**), located in the sphenoid bone, are close to the optic nerves. An infection here can damage vision.

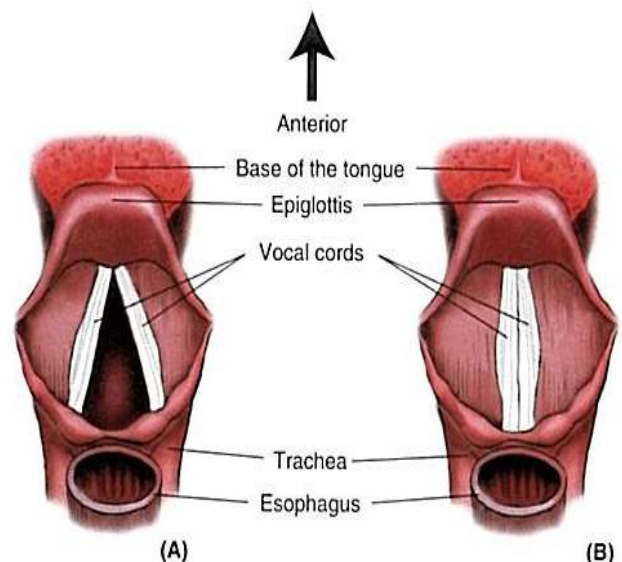
### d. Pharynx= THROAT.

e. Divided into three divisions known as:

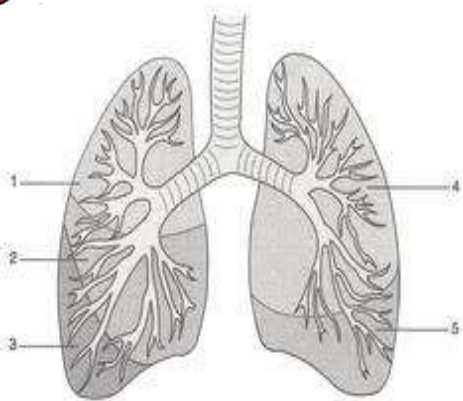
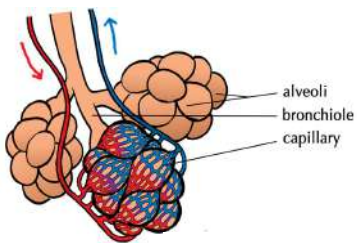
- i. Nasopharynx:
- ii. Oropharynx:
- iii. Laryngopharynx:

### f. Protective Swallowing Mechanisms:

**Epiglottis-** A flap that closes off the larynx when

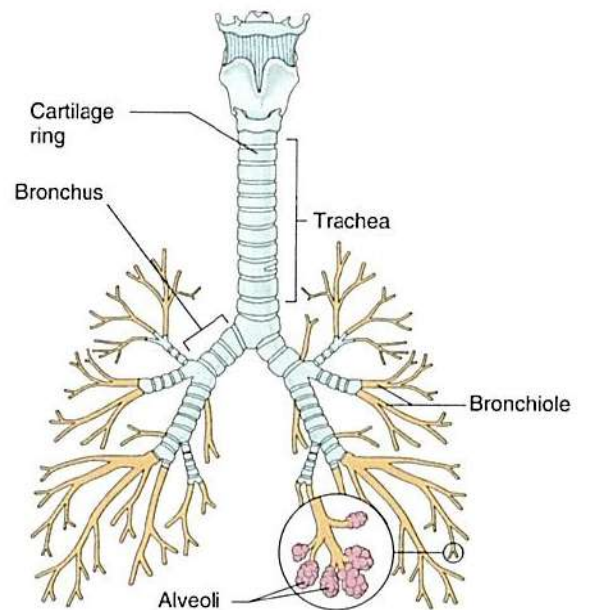


# The Respiratory System



C.

Ac



## B. Lower Tract

a. Bronchial Trees - the lower, two divisions of the \_\_\_\_\_.

i. Insert into the:

ii. Bronchioles-

b. Alveoli:

c. Lungs: Consists of **2 divided lobes** (R/L). Label sections:

## The Respiratory System

a. Mediastinum/Interpleural space-

b. Pleura- A \_\_\_\_\_ that surrounds each lung with blood vessels. 3 layers:

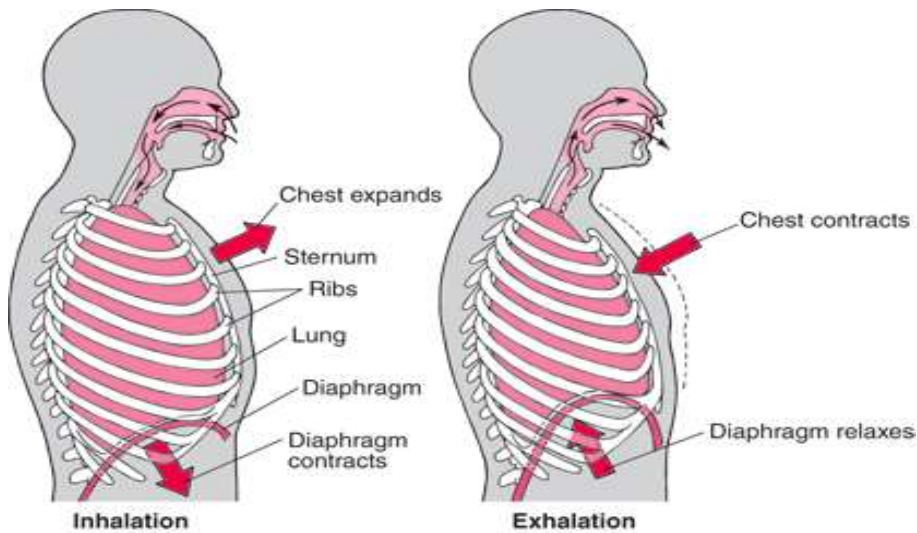
i. Parietal pleura-

ii. visceral pleura-

iii. pleural space/pleural cavity-

c. Diaphragm- A MUSCLE that makes \_\_\_\_\_ possible!

*\*The **phrenic nerve** controls diaphragm contraction*



## RESPIRATION

Respiration:

External respiration-

VS.

Internal respiration-

**Other Key Terms to Respiration:**

## The Respiratory System

- Breathing:
- Inhalation:
- Exhalation:

## The Respiratory System

### General Pathology

COPD (Cardiopulmonary disease)	<b>Chronic.</b> Bronchitis + emphysema= extreme difficulty breathing
Asthma	
Bronchiectasis	
Emphysema	
Smokers' respiratory syndrome (SRS)	

### Pathology of the URT

Allergic rhinitis	AKA-
Acute Respiratory Syndrome of Children and Infants	
croup	
diphtheria	
Epistaxis	
Pertussis ("whooping cough")	
rhinorrhea	
Sinusitis	Inflamed sinuses; sinus infection
Upper Respiratory Infection (URI)	AKA-

### Pathology of the Pharynx/Larynx

Pharyngitis	
pharyngorrhagia	
pharyngorrhea	
laryngoplegia	
laryngospasm	

### Pathology of the Pharynx/Larynx

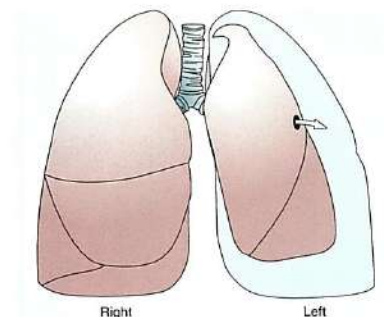
aphonia	
dysphonia	
laryngitis	

### Pathology of the Trachea & Bronchi

tracheitis	
tracheorrhagia	
Bronchitis	
bronchorrhagia	
bronchorrhea	

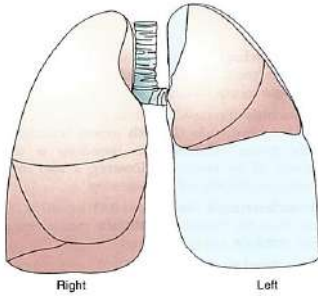
### Diseases of the Pleural Cavity

- Pleurisy-
- Pleuralgia- pain in the pleura or side
- pneumothorax-



## The Respiratory System

- pleural effusion- escape of fluid into the pleural cavity that prevents the lung from fully expanding.



- empyema/pyothorax-
- hemothorax- blood in the pleural cavity
- hemoptysis-

### Diseases of the Lungs

- pulmonary edema-
- Acute Respiratory Distress Syndrome (ARDS)- lung failure resulting from pulmonary edema
- atelectasis ( collapsed lung)-
- pneumorrhagia-
- tuberculosis-
  - Multidrug resistant TB (MDR-TB)-
- Pneumonia-

Main causes of pneumonias are bacteria, viruses, fungi, or inhaled substances like chemicals or vomit.

MANY different kinds:

*bacterial pneumonia      viral pneumonia      lobar pneumonia      bronchopneumonia*  
*double pneumonia      aspiration pneumonia      mycoplasma pneumonia*  
*Pneumocystis carinii pneumonia*

### Environmental or Occupational Lung Diseases

Disease	AKA	Caused by:
pneumoconiosis	N/A	
anthracosis		
asbestosis		
byssinosis		
silicosis		

- Pulmonary fibrosis- formation of scar tissue that replaces the alveolar walls and makes them stiff.
- Idiopathic Pulmonary Fibrosis (IPF)
- Cystic fibrosis-

### Breathing Disorders:

Eupnoea	
tachypnea	
bradypnea	
apnea	
Cheyne-stokes	

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Dyspnea	
Hyperpnoea	
Hypopnea	
hyperventilation	

### Lack of Oxygen Disorders:

- Airway obstruction -
- Anoxia -
- Asphyxia -
- asphyxiation-
- cyanosis- BLUE skin
- hypoxia-
- respiratory failure- occurs when O<sub>2</sub> in the blood become dangerously low!

### Sudden Infant Death Syndrome (SIDS)

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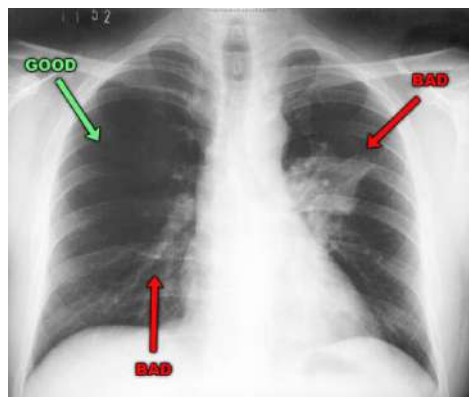
### DIAGNOSTIC PROCEDURES

- respiratory rate (RR)- What is normal rate?=  
What is normal rate? = 12-20 breaths per minute
- pulmonary function tests (PFT's)- lung capacity tests that measure the ability of the lungs to move air in and out. Pretty neat!
- spirometry- using a **spirometer** to record the volume of air inhaled or exhaled in PFT's
- phlegm- thick mucus secreted by respiratory passages. it is called **sputum** when it is ejected.
- bronchoscopy
- laryngoscopy
- TB test (tuberculin skin test)
- Chest x-rays- can show pneumonia, lung tumors, pneumothorax, pleural effusion, tuberculosis, and emphysema

a. pleural effusion



b. pneumonia



# The Respiratory System

## TREATMENTS

### Medications:

- bronchodilator- used in asthma attacks to:
- Bronchoconstrictor- what do you think?

### Nose and Throat:

- septoplasty- surgical reconstruction of the septum
- sinusotomy- incision into the sinus, to treat chronic sinusitis.
- Functional endoscopic sinus surgery (FSS):
- pharyngoplasty
- pharyngostomy
- pharyngotomy
- laryngectomy
- laryngoplasty
- endotracheal intubation (intubating)- passage of a tube through the nose or mouth into the trachea to establish an airway.

### Trachea and Bronchi:

- tracheoplasty
- tracheorrhaphy
- tracheotomy
- tracheostomy- placing a tube into the trachea below a blockage to create an airway. It may be temporary or permanent. Resulting in an opening called a **stoma**. →



### Lungs, Pleura and Thorax:

- pneumonectomy
- lobectomy
- pleurectomy
- thoracentesis- puncture of chest wall with needle to obtain fluid from pleural cavity for diagnostic purposes, to drain pleural effusions, or to re-expand a collapsed lung.
- Thoracotomy -
- Thoracostomy -

### Respiratory Therapy:

- supplemental oxygen- i.e. nasal canula, or nonrebreather
- Postural drainage:
- ventilator
- respirator- for prolonged artificial respiration

