

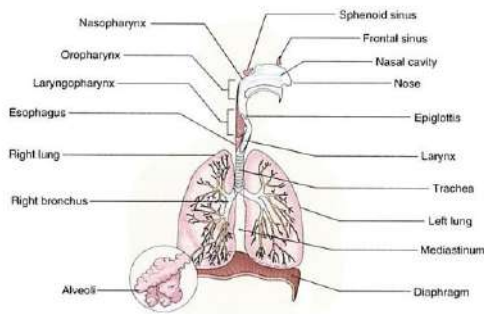
## The Respiratory System

Functions:

- 1.
- 2.
- 3.

### STRUCTURES

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



#### A. Upper Tract

##### a. Nose

- i. Nasal cavity-
- ii. Septum-
- iii. Mucous membrane- layer of thin tissue that lines the nose and entire respiratory system
- iv. Mucus-
- v. Cilia-

vi. Olfactory receptors-

##### b. Tonsils-

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

##### i. Paranasal sinuses

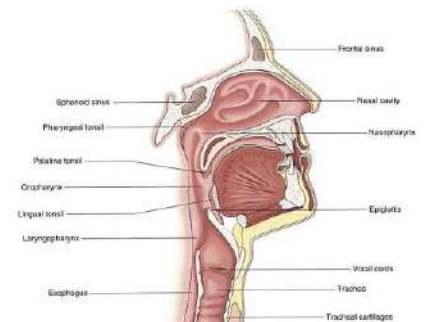


Table 7.1

#### PARANASAL SINUSES

**Maxillary sinuses (MACK-sill-lee-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.

#### al sinuses

- 1.
- 2.

3.

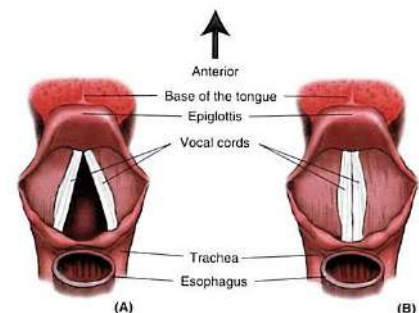
d. Pharynx= THROAT. Divided into three divisions known as:

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

e. Protective Swallowing Mechanisms:

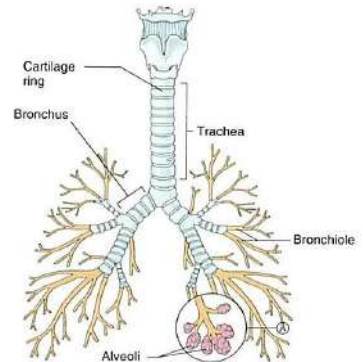
- i. Epiglottis- A flap that closes off the larynx when swallowing to prevent \_\_\_\_\_.
- ii. Soft Palate - closes off the \_\_\_\_\_ to prevent food from going up into the nose.

f. Larynx= voice box; "LA LA LA!"



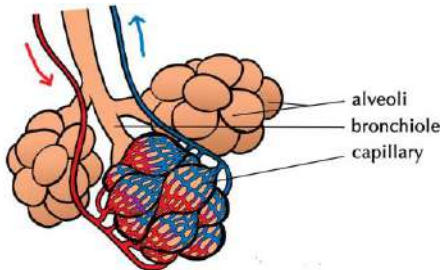
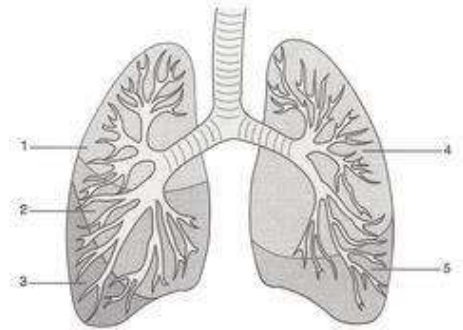
## The Respiratory System

- i. It is held open by a series of \_\_\_\_\_ (the most prominent protrusion is known as the Adam's apple)
- ii. Contains \_\_\_\_\_, which vibrate against one another to produce speech as air is \_\_\_\_\_ from the lungs.
- g. Trachea= WINDPIPE; Extends from \_\_\_\_\_ to \_\_\_\_\_
  - i. Where air passes from the URI to the LRI (lungs).
  - ii. Passes directly in front of the \_\_\_\_\_.
  - iii. Held open by rings of cartilage also.



### 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:



### C. Additional Structures

- 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!

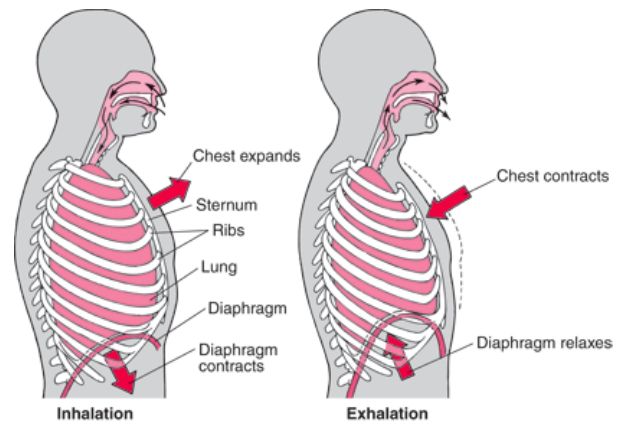
\*The **phrenic nerve** controls diaphragm contraction

- Contract 7 7 7 7
- Relax 7 7 7 7

### RESPIRATION

Respiration:

External respiration-  
VS.  
Internal respiration-



## The Respiratory System

Other Key Terms to Respiration:

- Breathing:
- Inhalation:
- Exhalation:

### PATHOLOGY

#### 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	

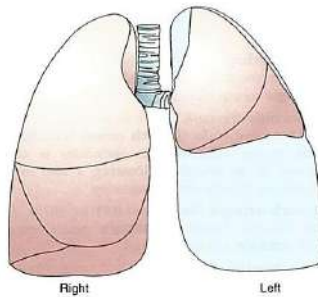
#### Pathology of the Trachea & Bronchi

## The Respiratory System

tracheitis	
tracheorrhagia	
Bronchitis	
bronchorrhagia	
bronchorrhea	

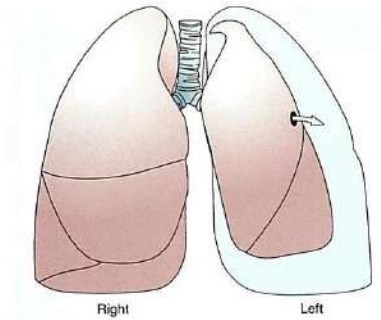
### Diseases of the Pleural Cavity

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

# The Respiratory System

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- 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	
Dyspnea	
Hyperpnoea	
Hypopnea	
hyperventilation	

## Lack of Oxygen Disorders:

- Airway obstruction -
- Anoxia -
- Asphyxia -
- asphyxiation-
- cyanosis- BLUE skin
- hypoxia-
- respiratory failure- occurs when O2 in the blood become dangerously low!

## Sudden Infant Death Syndrome (SIDS)

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## DIAGNOSTIC PROCEDURES

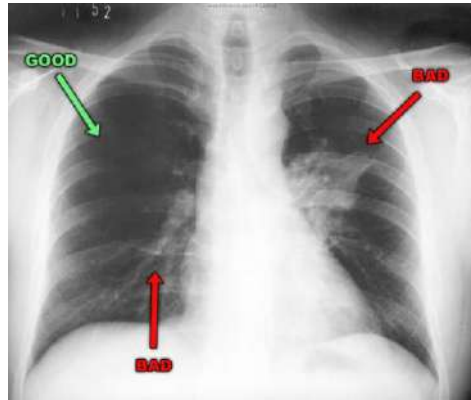
- respiratory rate (RR)- What is normal rate?=
  - pulmonary function tests (PFT's)- lung capacity tests that measure the ability of the lungs to move air in and out. Pretty neat!
  - spirometry- using a **spirometer** to record the volume of air inhaled or exhaled in PFT's
  - phlegm- thick mucus secreted 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

## The Respiratory System

a. pleural effusion



b. pneumonia



### 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



## The Respiratory System

- Postural drainage:
- ventilator
- respirator- for prolonged artificial respiration

