



Respiratory System

Diseases and Disorders

Asthma

- Usually caused by sensitivity to an allergen such as dust, pollen, animals, medications, and foods
- Stress, overexertion, and infections can cause an asthma attack
- Symptoms: Occur when bronchospasms narrow openings of bronchioles, mucus production increases, and edema develops in the mucous lining

Asthma

- Symptoms:
- Dyspnea and wheezing
- Coughing and expectoration of sputum
- Tightness in chest
- Treatment: Bronchodilators to enlarge bronchioles
- Epinephrine and anti-inflammatory drugs
- Oxygen therapy
- Id the cause of attacks

Bronchitis

- Inflammation of the bronchi and bronchiole tubes
- Acute Bronchitis: Usually caused by infection
- Symptoms:
 - Productive cough
 - Dyspnea
 - Rales: bubbly or noisy breath sounds
 - Chest pain & fever

Bronchitis

- Treatment of Acute Bronchitis:
- Antibiotics
- Expectorants to remove excess mucus
- Rest & fluids
- Chronic Bronchitis:

Occurs after frequent attacks of acute bronchitis and long term exposure to pollutants or smoking

Bronchitis

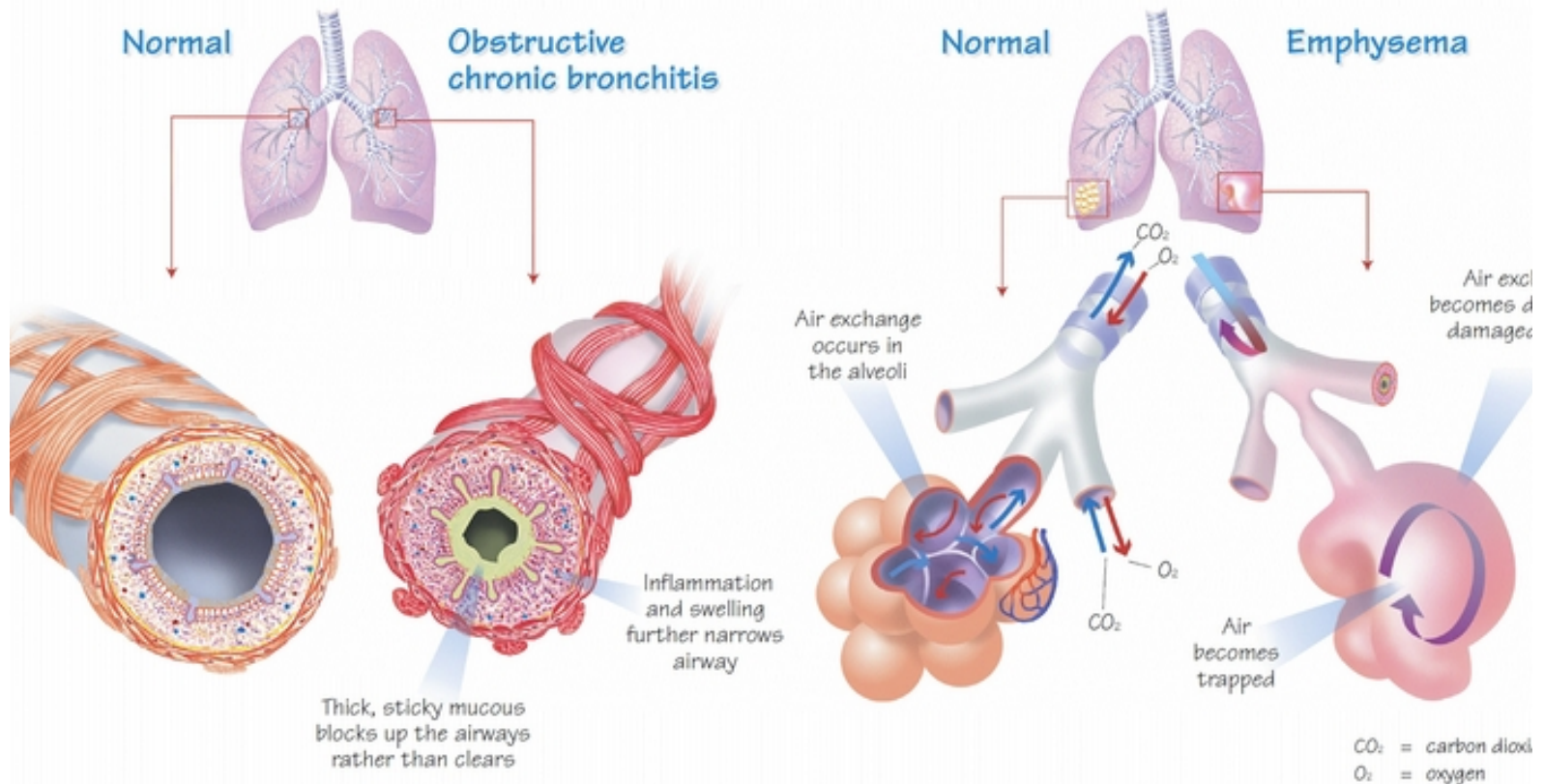
- Characterized by: chronic inflammation, damaged cilia, and enlarged mucus glands
- Symptoms of chronic bronchitis:
- Excessive mucus resulting in a productive cough
- Wheezing and dyspnea
- Chest pain
- Prolonged expiration of air
- Treatment: No cure
- Antibiotics and bronchodilators
- Respiratory therapy

Chronic Obstructed Pulmonary Disease (COPD)

- Any chronic lung disease that results in obstruction of the airways
- Disorders such as chronic asthma, chronic bronchitis, emphysema, and tuberculosis leads to COPD
- Smoking is the primary cause, but allergies, and chronic respiratory diseases are also factors

COPD

OBSTRUCTIVE CHRONIC BRONCHITIS AND/OR EMPHYSEMA



COPD

- Treatment methods include bronchodilators, mucolytics (loosen mucus secretions)
- Prognosis is poor because damage to the lungs causes a deterioration or pulmonary function leading to respiratory failure and death

Emphysema

- Noninfectious chronic respiratory condition
- Occurs when walls of the alveoli deteriorate and lose their elasticity
 - CO₂ remains trapped in the alveoli
 - Poor exchange of gas
- Most common cause is heavy smoking and prolonged exposure to air pollutants

Emphysema

- Symptoms:
- Dyspnea and feeling of suffocation
- Pain and a barrel chest
- Chronic cough
- Cyanosis
- Rapid respirations with prolonged expiration
- Eventual respiratory failure and death

Emphysema

- Treatment: no cure
- Avoiding smoking
- Bronchodilators
- Breathing exercises
- Prompt treatment of respiratory infections
- Oxygen therapy and respiratory therapy

Epistaxis

- Occurs when capillaries in nose become congested and bleed
- Causes:
 - Injury or blow to the nose
 - Hypertension
 - Chronic Infections
 - Anticoagulants drugs
 - Blood decreases such as hemophilia or leukemia

Epistaxis

- Treatment:
- Compress nostrils toward the septum, elevate the head and tilt it slightly forward, and apply cold compresses
- Nose plugs

Influenza or flu

- Highly contagious viral infections of the upper respiratory system with a sudden onset
- Symptoms:
 - Chills, and fever
 - Cough, sore throat, and runny nose
 - Muscle pain and fatigue

Influenza

- Treatment:
- Bed rest and fluids
- Analgesics for pain and antipyretics for fever
- Antibiotics are not effective against viruses, but they are given at times to avoid secondary infections such as pneumonia

Influenza Vaccinations

- Recommended for the elderly, individuals with chronic diseases, pregnant women, and health care workers
- Many different viruses cause influenza, so vaccines are developed each year to immunize against the most common viruses identified

Laryngitis

- Inflammation of the larynx and vocal cords
- Frequently occurs with other respiratory infections
- Symptoms:
- Hoarseness or loss of voice
- Sore throat
- Dysphagia, or difficulty swallowing

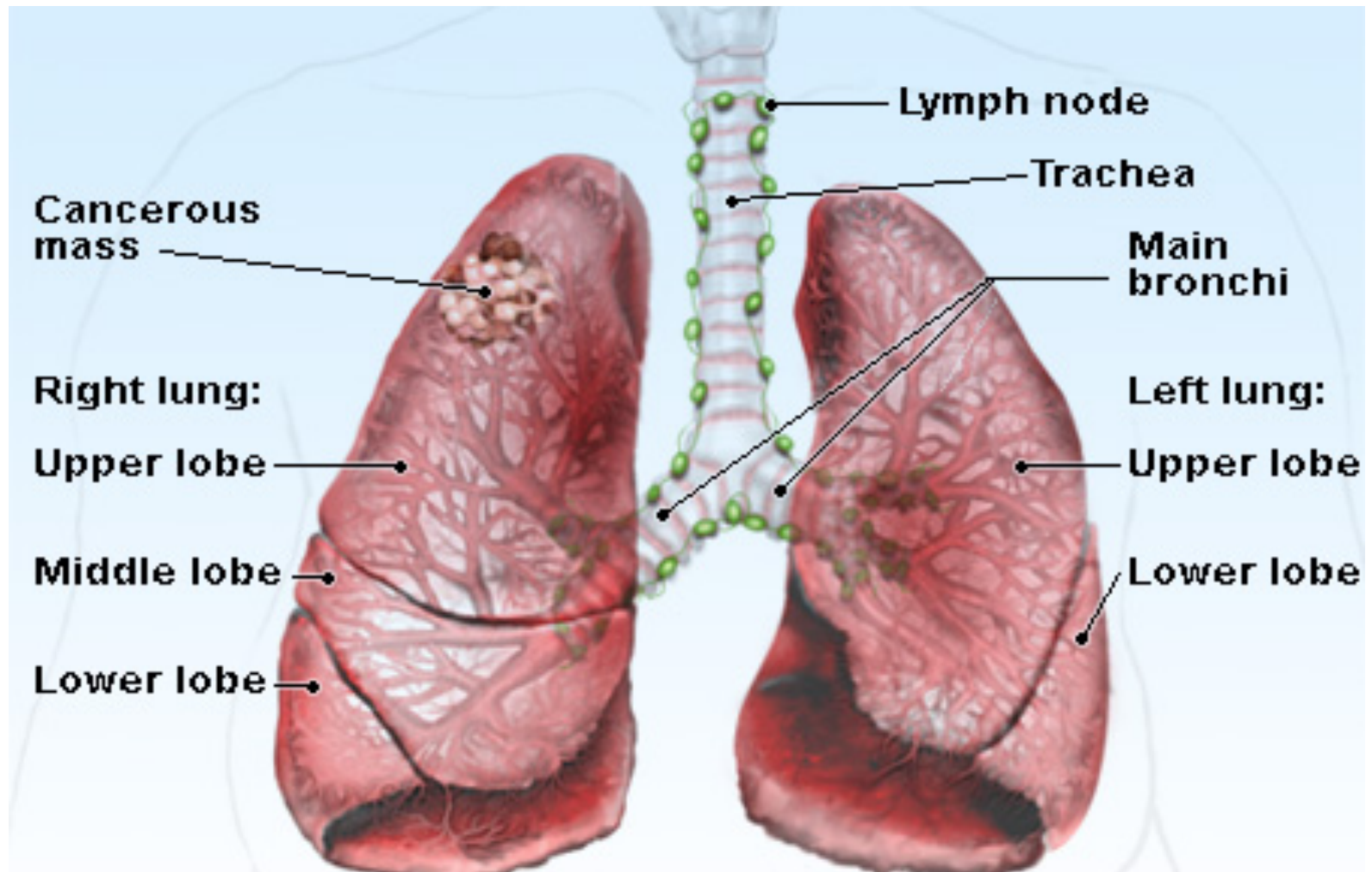
Laryngitis

- Treatment:
- Rest and fluids
- Limited use of the voice
- Medications if an infection is present

Lung Cancer

- Leading cause of cancer death in men and women
- A preventable disease because the main cause is exposure to carcinogens in tobacco through smoking or through exposure to secondhand smoke
- Three common types:
 - Small cell
 - Squamous Cell
 - Adenocarcinoma

Lung Cancer



Lung Cancer

- Symptoms:
- None in the early stages
- Chronic cough
- Hemoptysis: coughing up blood-tinged sputum
- Dyspnea and chest pain
- Fatigue and chest pain
- Prognosis is poor since the disease is usually advanced before it is diagnosed

Lung Cancer

- Treatment:
- Surgical removal of the cancerous sections of the lung, radiation, and or chemotherapy

Pleurisy

- Inflammation of pleura, or membranes of the lungs
- Usually occurs with pneumonia or other infections
- Symptoms:
 - Sharp stabbing pain while breathing
 - Crepitation, or grating sounds in the lungs
 - Dyspnea and fever

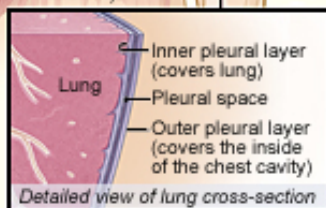
Normal Lungs

Normal airways in right lung

Left lung (in cross-section)

Two pleural layers surround lungs

Diaphragm (partial cross-section)

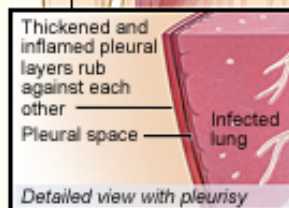


B Lungs With Pleurisy and Pneumothorax

Collapse lung

Pneumothorax (air leaks from lungs into surrounding pleural space)

Pleurisy (inflammation of pleura)



Treatment

Pleurisy:
Treatment:
Rest
Medications to relieve pain and inflammation

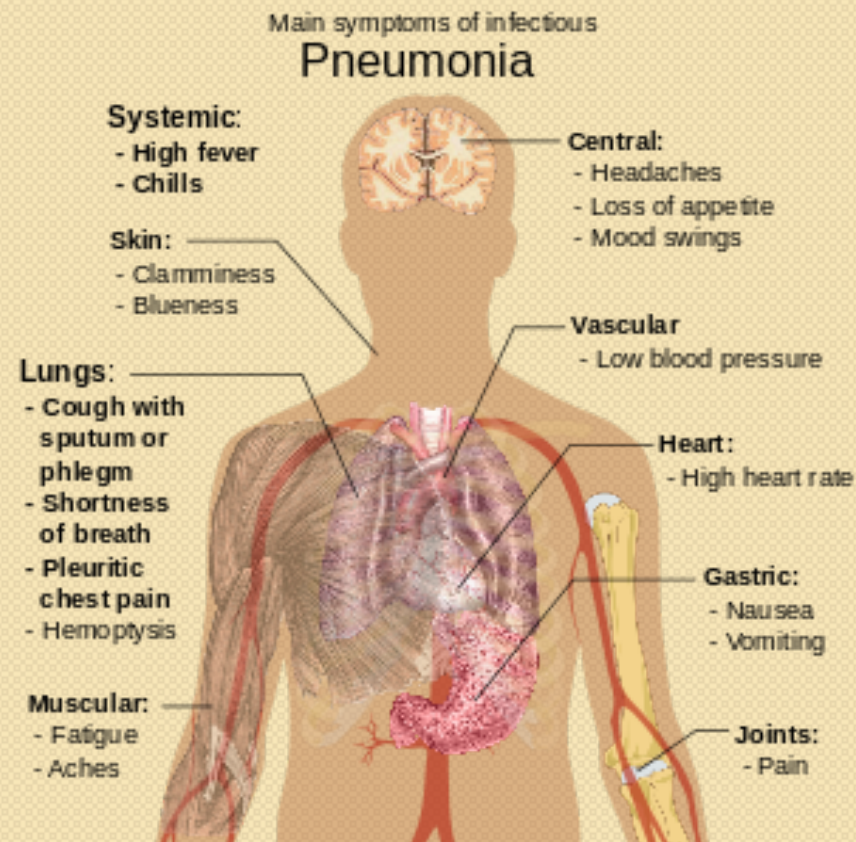
If there is a fluid build up in the cavity: fluid should be drawn off of the lung to prevent pneumothorax

Pneumonia

- Inflammation or infection of the lungs with a buildup of fluid or exudate in the alveoli
- Usually caused by a bacteria, a virus, protozoa, or chemicals

PNEUMONIA

Symptoms



Pneumonia

- Treatment:
- Rest
- Oxygen therapy
- Fluids
- Antibiotics if indicated
- Respiratory therapy
- Pain medication

Rhinitis

- Inflammation of the nasal mucous membrane resulting in a runny nose, watery eyes, sneezing, soreness, and congestion
- Common cause is infection or allergies
- Treatment: Fluids and medications to relieve congestion

Sinusitis

- Inflammation of mucous membrane lining the sinuses
- Usually caused by a bacteria or virus
- Symptoms: headache, pressure, and dizziness
- Thick nasal discharge and congestion
- Loss of resonance in voice
- Treatment:
- Antibiotics if indicated, analgesics for pain, decongestants for mucus, moist inhalations, surgery for chronic sinusitis to open the cavities

Sleep Apnea

- Condition in which an individual stops breathing while asleep, causing a measurable decrease in blood oxygen levels
- 2 kinds:
 - Obstructive: caused by blocked air passages that occurs when the muscles that keep the airway open relax and allow the tongue and palate to block the airway

Sleep Apnea

- Central Sleep Apnea:
- Happens in the brain's respiratory control center
- Common in men
- Factors: obesity, hypertension, smoking, alcohol ingestion, and or the use of sedatives
- Diagnosed when more than 5 periods fo apnea lasting at least 10 seconds each occur during and hour of sleep
- Treatment involves losing weight, abstaining from smoking, and the use of alcohol and sedatives, sleeping on side or stomach

Sleep Apnea

- Treatment may also include a CPAP machine: provides continuous positive airway pressure which opens the airway during sleep
- Treatment of central sleep apnea requires medication to stimulate breathing

Tuberculosis: TB

- Infectious disease of the lungs caused by the bacterium *Mycobacterium tuberculosis*
- Occasionally WBC's will wall off the TB organisms and create a nodule called a tubercle
- The organisms then remain dormant
- Can cause an active case later if immune system is suppressed

Tuberculosis: TB

- Symptoms of an active case:
- Fatigue and chest pain
- Fever and night sweats
- Weight loss
- Hemoptysis or coughing up blood tinged sputum
- Treatment:
- Administration of drugs for one or more years to destroy the bacteria
- Good nutrition and rest

Upper Respiratory Infection

- Inflammation of mucous membrane lining the upper respiratory tract
- Caused by viruses and is highly contagious
- Symptoms:
- Fever, runny nose, watery eyes, congestion, sore throat, and hacking cough
- No cure and minimal treatment
- Analgesics and antipyretics
- Rest and fluids
- Antihistamines to relieve congestion