Respiratory System
Diseases & Disorders

Berryhill & Cashion
HS1, DHO8, 7.10, pg 206
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Objectives

• Discuss the diseases and disorders of the respiratory system and related signs, symptoms, and treatment methods

• Identify diseases and disorders that affect the respiratory system, including the following:

asthma, pleurisy, bronchitis, pneumonia, COPD, rhinitis, emphysema, sinusitis, epistaxis, sleep apnea, influenza, TB, laryngitis, URI, and lung cancer
Upper Respiratory Tract

The major passages and structures of the upper respiratory tract include the nose, nasal cavity, pharynx, and larynx.
Asthma

Bronchospasms with ________ in mucous, and ___________ in mucosal lining

- Caused by sensitivity to allergen such as ______, ______, _______, ________________, or ______.
- ________, ________________, and ____________ can cause asthma attack
- Prevent asthma attacks by eliminating or desensitizing to allergens
- Symptoms: _____________, wheezing, ____________, and ________________
- Treatment: ________________, ___-________________ med, epinephrine, and ________________ therapy
Pathology of Asthma

Normal airway

Asthmatic airway

Asthmatic airway during attack

Relaxed smooth muscles

Wall inflamed and thickened

Air trapped in alveoli

Tightened smooth muscles
Test Your Knowledge

Barbara has asthma and uses an inhaler when she starts to wheeze. The purpose of the device is to:

a) Dissolve mucus
b) Contract blood vessels
c) Liquefy secretions in the lungs
d) Enlarge the bronchioles

Correct answer:
<table>
<thead>
<tr>
<th>Acute Bronchitis</th>
<th>Chronic Bronchitis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Caused by</strong></td>
<td><strong>Caused by frequent attacks of</strong></td>
</tr>
<tr>
<td>____________________</td>
<td>____________________ or long-term exposure to ____________________</td>
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<tr>
<td><strong>S/S:</strong> ____________________</td>
<td><strong>Has chronic inflammation,</strong></td>
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<tr>
<td>cough, dyspnea,</td>
<td>____________________ cilia, &amp; enlarged</td>
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<tr>
<td>____________________ (bubbly</td>
<td>mucous glands</td>
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<tr>
<td>breath sounds), chest</td>
<td></td>
</tr>
<tr>
<td>pain, and fever</td>
<td></td>
</tr>
<tr>
<td><strong>Treatment:</strong> abx,</td>
<td><strong>S/S:</strong> productive cough, wheezing,</td>
</tr>
<tr>
<td>____________________, (to remove</td>
<td>dyspnea, chest pain, &amp;</td>
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<tr>
<td>excess mucous), rest, &amp;</td>
<td>____________________ air expiration</td>
</tr>
<tr>
<td>drinking ____________________</td>
<td></td>
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<tr>
<td></td>
<td><strong>Treatment: NO CURE-abx,</strong></td>
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<tr>
<td></td>
<td>bronchodilators, and</td>
</tr>
<tr>
<td></td>
<td>____________________ therapy</td>
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</tbody>
</table>
Acute vs Chronic Bronchitis

Chronic Bronchitis
- Irritated airway
- Excess mucus
- Damaged cilia
Chronic Obstructive Pulmonary Disease (COPD)

__________ lung dx with obstruction of airway

• Primary cause: ______________________
• Chronic asthma, chronic bronchitis, emphysema, and TB lead to COPD
• Trx: bronchodilators,______________________(loosen mucous secretions), & cough meds
• Prognosis: ____________ d/t damaged lungs causing ___________________ in pulmonary function, leading to ________________, and then ___________________
Chronic Obstructive Pulmonary Disease (COPD)

Chronic Bronchitis
- Healthy
- Inflammation & excess mucus

Emphysema
- Healthy
- Alveolar membranes break down
Emphysema
______________ chronic condition that occurs when
the ______ of the alveoli deteriorate & loss of ________

• ___________ remains trapped in alveoli and poor
________________________occurs
• Causes: heavy __________________ & prolonged
exposure to pollutants
• S/S: dyspnea, feeling of _________________, pain,
________________________, chronic cough, cyanosis,
increased RR with ____________________,
respiratory failure, and death
• NO CURE
• Trx: bronchodilators, _________________ exercises,
_____ therapy, ____________________________ therapy,
avoid smoking, and prompt treatment of
________________________________________.
**Emphysema**

- Mucus in bronchiole
- Enlarged alveoli
- Fewer capillaries

**Lungs**

**Normal bronchiole and alveoli**
Mr. Arnot is a heavy smoker with a chronic cough, bluish tint to his skin, and a barrel chest. He most likely suffers from:

a) Emphysema
b) Epistaxis
c) TB
d) Pleurisy

Correct answer:
Test Your Knowledge

What diagnostic test provides physicians with a direct look at the lining of the respiratory tract?

a) CPAP  

c) Pulmonary function tests  

d) Chest x-ray

Correct answer:
Epistaxis
Nose bleeds

• Occurs when ________________ in the nose become _______________ and _______________.
• Caused by injury, blow to nose, ________________, chronic infection, anticoagulant drugs, & blood dx ie. _______________ & _______________.
• Prevent: Treatment of underlying cause such as HTN
• Control: press ________________ septum, ______________ the head and tilt slightly ________________, & applying _________________.
• May need ________________ or ________________ (burn and destroy) the bleeding vessels
How to Stop a Nosebleed

Lean forward...

Nasal bone

Pinch soft part of nose here

Stop A Bloody Nose
Test Your Knowledge

• What is the best treatment for mild epistaxis caused by a bump in the nose?
  a) Pack the nose with gauze
  b) Compress the nostrils, elevate & tilt the head slightly forward
  c) Cauterize the bleeder
  d) Lay flat on the back, head back, and pack the nose with tissue

Correct answer:
Influenza aka flu

____________ contagious ________________ infection
of upper respiratory system

• Sudden ________________
• S/S: ____________, ____________, cough, sore throat, runny nose, _____________ pain, & ____________
• Trx: bedrest, fluids, ________________ (for pain), & ________________ (for fever reduction)
• Abx not effective against virus, but given ________________ like pneumonia
• ______ immunizations for ________________, pregnant women, people with chronic ____________, and ___________________
Symptoms of Influenza

Central
- Headache

Systemic
- Fever
  (usually high)

Muscular
- (Extreme) tiredness

Joints
- Aches

Nasopharynx
- Runny or stuffy nose
- Sore throat
- Aches

Respiratory
- Coughing

Gastric
- Vomiting
COLD SYMPTOMS

- Low or no fever
- Occasional Headache
- Stuffy, runny Nose
- Sneezing
- Mild, Hacking cough
- Slight aches and pains
- Mild fatigue
- Sore throat
- Normal energy level

FLU SYMPTOMS

- High fever
- Constant Headache
- Clear nose
- Occasional Sneezing
- Cough, often becoming severe
- Often severe aches and pains
- Several weeks of fatigue
- Occasional sore throat
- Extreme exhaustion
Laryngitis
Inflammation of ______________ & vocal ____________

- Occurs with other respiratory infections
- S/S: _______________ or loss of voice, sore throat, & _______________
- Trx: rest, ______________ voice use, fluids, and meds if infection present
Epiglottis

Vocal cords

Normal larynx

Inflamed larynx
Lung Cancer

________mae of cancer death in both men & women

- Caused by exposure to ______________ in tobacco, either as ______________ or __________ hand exposure
- PREVENTABLE
- S/S: early stage: ______________
- S/S: later stage: chronic cough, ______________ (coughing up blood), ______________, fatigue, weight ____________, & chest pain
- Trx: sx removal, radiation, and chemotherapy
- Prognosis: ______________ d/t late diagnosis r/t S/S
LUNGS OF NON SMOKER

LUNGS OF SMOKER

LUNGS OF NON SMOKER WITH LUNG CANCER

LUNGS OF SMOKER WITH LUNG CANCER

80% OF PEOPLE DIAGNOSED WITH LUNG CANCER ARE NON SMOKERS
Wedge Resection of the Lung

Cancer

Lymph nodes

Lung tissue removed
Test Your Knowledge

• What statement is true about lung cancer?
  a) The prognosis is good
  b) Trx includes hormone therapy and blood transfusions
  c) It is the leading cause of cancer death in men & women
  d) Second hand smoke rarely contributes to the development of lung cancer

Correct answer:
Pleurisy
Inflammation of _______________ or membranes of lungs

- Occurs with pneumonia or other lung infections
- S/S: sharp, _______________ while breathing, _______________ (grating sounds in lungs), dyspnea, & fever
- Trx: rest, meds to treat __________ & ________________

_______________: if fluid collects in the pleural space, fluid is removed with a needle to prevent _______________ of the lungs
Pneumonia
Inflammation or ______________ of the lungs with ___________________________ in alveoli

- Caused by ____________, ________________, ____________, or ________________
- S/S: chills, fever, chest pain, ________________ cough, dyspnea, and fatigue
- Trx: bed rest, ________________ therapy, fluids, ________________ if needed, ________________ therapy, & pain meds
Rhinitis
Inflammation of ____________ mucous membrane

- Causes: _______________ & _______________
- S/S: ___________ nose, _______________ eyes, sneezing, _______________, & _______________
- Trx: fluids & meds for congestion
- It is usually ____________________________
Nasal cavity: allergic rhinitis
Sinusitis
Inflammation of mucous membrane lining the
_________________________

- Caused by ________________ or ______________
- S/S: ________________ or pressure, dizziness, ________________ discharge, congestion, & loss of voice ________________
- Trx: ________________ for pain, ________________ if needed, ________________ to loosen secretions, & ________________ inhalations
- ________________ for chronic sinusitis to open the ________________ and encourage ________________
Healthy Sinus:
- Frontal Sinus
- Sphenoid Sinus
- Ethmoid Sinus
- Septum
- Maxillary Sinus

Sinusitis:
- Inflamed Sinus Lining
- Excess Mucus/Sinus Infection
Sleep Apnea
Condition when you stop breathing while asleep, causing ________________ in blood O2 levels

- Two kinds: ______________ and ______________ 
- More common in ______________ 
- Factors: ______________, ______________, ______________, alcohol, & sedatives 
- Dx: 5 periods (at least 10 sec. ea.) in 1 hr. 
- Apnea reduces ________________ levels, then brain awakens pt, who then ______________ and ______________. 
- Apnea leads to ________________ sleep cycles and ________________ tiredness or drowsiness during day
Normal airflow

Obstructive sleep apnea

Tongue
Soft palate
Uvula
Blocked airway
<table>
<thead>
<tr>
<th>Obstructive Sleep Apnea</th>
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<tbody>
<tr>
<td>• Blockage in the ________ when the airway muscles relax &amp; allow the ___________ and ____________ to block the airway</td>
</tr>
<tr>
<td>• Trx: ____________ weight, no ____________, ____________, or sedatives, &amp; sleeping on your ______ or __________</td>
</tr>
<tr>
<td>• Severe cases may need _______ - machine that delivers air pressure to the airway to keep it open while pt sleeps</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Central Sleep Apnea</th>
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<tbody>
<tr>
<td>• Disorder in the respiratory __________ of the ________</td>
</tr>
<tr>
<td>• Trx: meds to ________________ breathing</td>
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</tbody>
</table>

**Sleep Apnea**

Condition when you stop breathing while asleep, causing decrease in blood O2 levels
Tuberculosis
Infectious lung disease

- Caused by ________________
- WBC can wall off TB organisms & create ________________ or *tubercles* in the lungs
- TB ________________ in tubercles but can become active case of TB later (if body resistance is low)
- S/S: fatigue, __________, ________________, weight loss, _________________, & chest pain
- Trx: drugs for ____ year to destroy bacteria, ________________ and rest
- New strain of TB __________________ to drug therapy=widespread infectious disease
Main symptoms of Pulmonary tuberculosis

**Central**
- appetite loss
- fatigue

**Lungs**
- chest pain
- coughing up blood
- productive, prolonged cough

**Skin**
- night sweats,
- pallor
Mantoux Skin Test
Test Your Knowledge

- Sarah has a chest x-ray that shows she has tubercles in her lungs. What does that mean?
  a) She had TB in the past but has recovered
  b) she has a dormant form of TB that could become active if her resistance is lowered
  c) She has an active case of TB & is being treated with abx
  d) She has a hx of an infx that is similar to TB & is immune to TB

Correct answer:
Upper Respiratory Infection

Inflammation of __________________________ lining the __________________________ tract

- AKA __________________________
- Caused by ______________________
- __________________________ contagious
- S/S: ______, ______ nose, watery eyes, congestion, sore throat, & ________________ cough
- No cure and lasts for ______________ week
- Trx: analgesics, antipyretics, rest, increased fluids, ________________ (for congestion)
Symptoms of common cold

- runny nose
- blocked nose
- sneezing
- sore throat
- cough
- sinus pain
- ear ache
- headache
- fever
- anorexia
- tiredness
- muscle aches and pains
COLD SYMPTOMS
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- Extreme exhaustion
Test Your Knowledge

- Most respiratory disorders are caused by:
  a) Infection  
  b) Lack of exercise  
  c) Heredity  
  d) Poor circulation

Correct answer:
Test Your Knowledge

- What respiratory disorders are highly contagious?
  a) Laryngitis and pleurisy
  b) Influenza and URI
  c) Sinusitis and epistaxis
  d) Emphysema and asthma

Correct answer: