3.6 Respiratory Emergencies

Dyspnea

Definition:

What could cause it?

Hypoxia

Definition:

Signs and Symptoms:

Respiratory Complications

- Gas exchange (oxygen and carbon dioxide) occurs in the _____
- If you were to spread out the alveoli into a flat surface, it would be _____
- The alveoli are very delicate, being held together by _____

Pulmonary Edema

Definition:

Signs and Symptoms:

Pneumonia

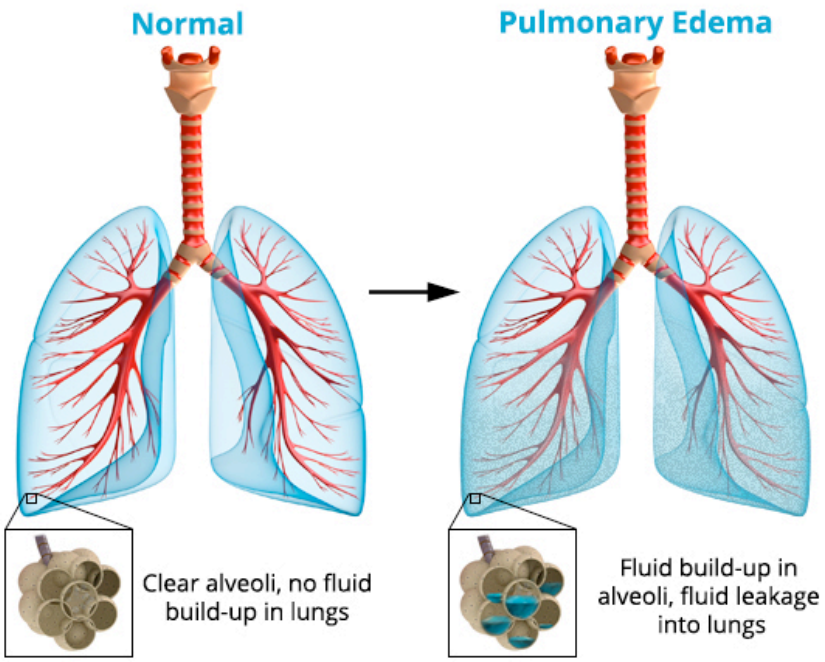
Definition:

Signs and Symptoms:

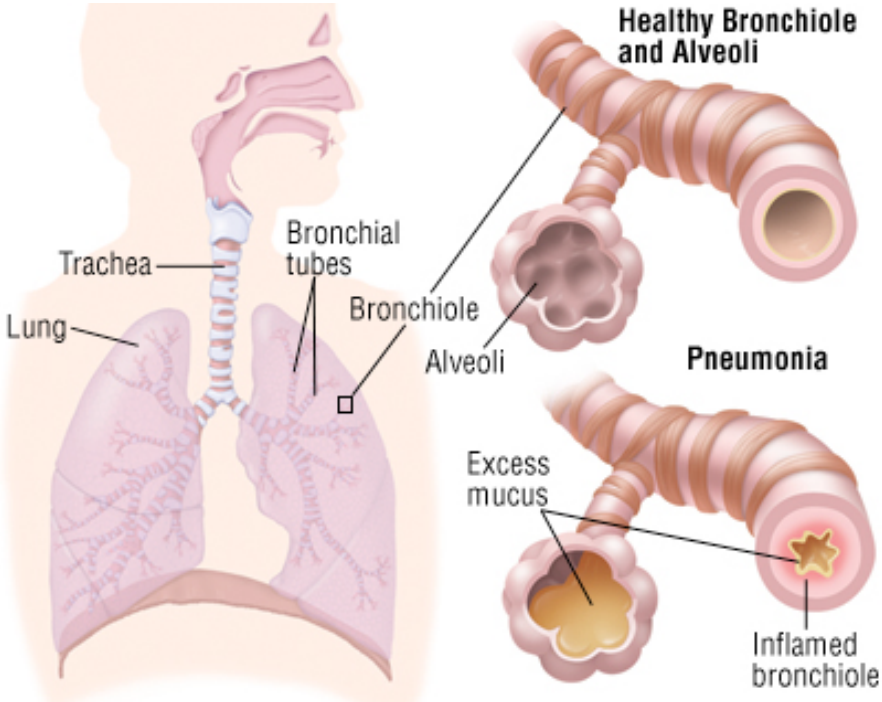
Further Complications:

1) **Atelectasis**
2) **Acidosis**
3) **Asphyxiation**

Pulmonary Edema



Pneumonia



Non-Traumatic Respiratory Emergencies

1) Hyperventilation

- Hyperventilation is defined as _____.
- As excess CO_2 is expired, the CO_2 level in the blood _____
- The _____level does not usually change significantly.
- The decrease in CO_2 level causes the body to _____ _____ and can result in a loss of consciousness.

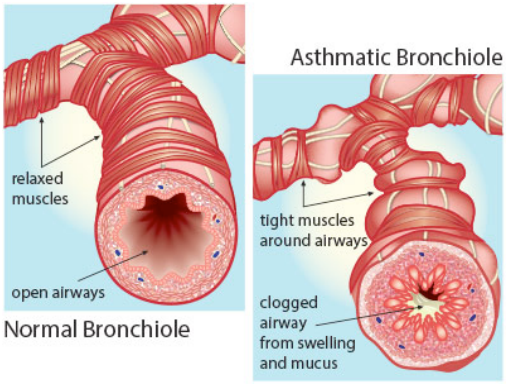
Signs & Symptoms:

Treatment:

2) Asthma

- Asthma affects about _____ of adults and _____ of children in North America.
- Some of the things that could trigger an asthma attack include…

- An asthma attack is caused by the _____ of air passageways that makes it increasingly difficult to breathe. This is called a _____



Signs & Symptoms:

Treatment:

3) Aspiration

- Aspiration means to

  _____

- Aspiration is often caused by

  _____

- Aspiration can cause your body to react with a

  _____

  to prevent liquids from entering the lungs

Signs & Symptoms:

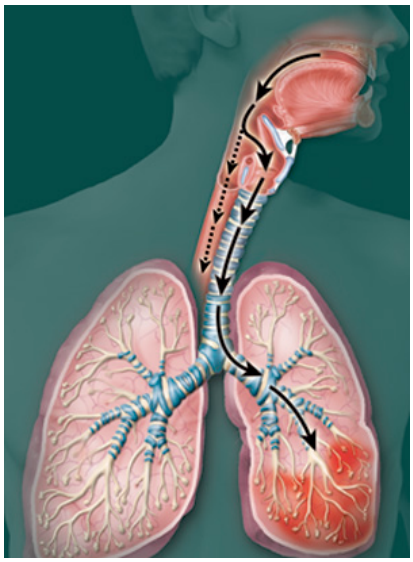
Treatment:

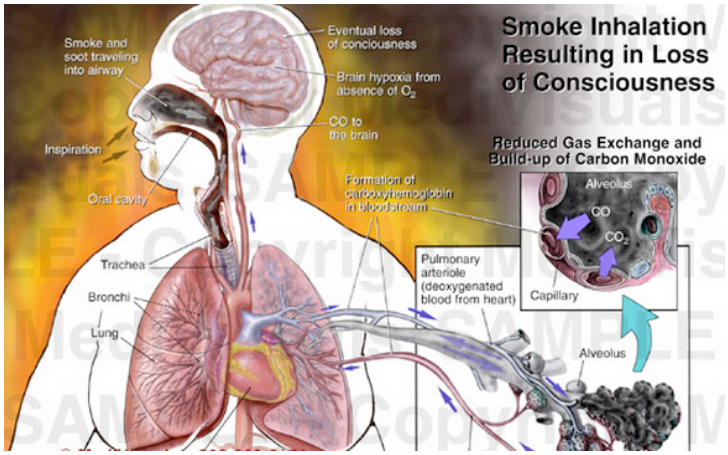
4) Smoke Inhalation

- Breathing in smoke from a fire has several risks…

Signs & Symptoms:

Treatment:

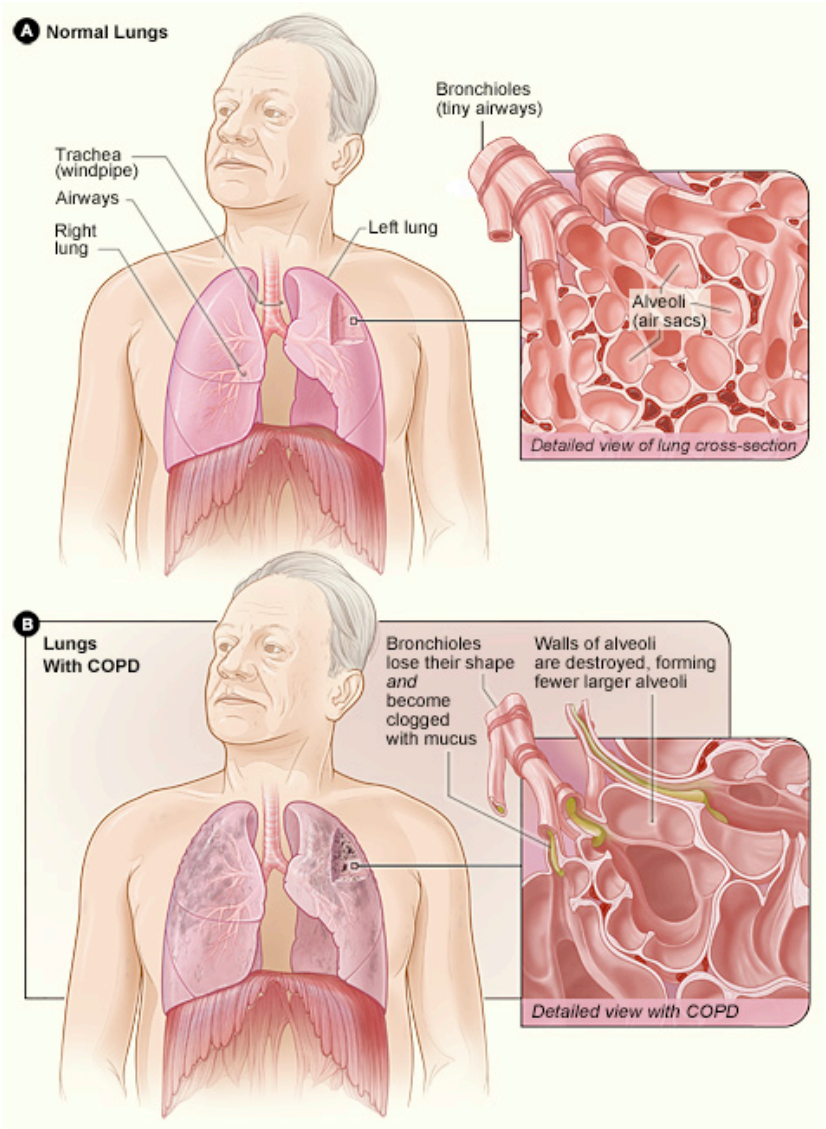




5) C.O.P.D.

- COPD stands for _____
- The most common forms of COPD are _____

  _____
- It is a condition characterized by _____
- The main cause of COPD is _____



COPD First aid Consideration

- A small percentage of patients with advanced COPD lose their sensitivity to carbon dioxide are triggered to breathe by _____.
- This rare condition may have some implications for oxygen therapy. If oxygen is applied to a patient with COPD, it should be given at the same litre flow, but
- If the patient's respiratory condition begins to worsen the litre flow should be _____ to 1-2 lpm. If ventilations are necessary, the oxygen litre flow should be maintained at 15 lpm.

**Do not withhold oxygen therapy from any patient who may benefit from its use

3.6 Respiratory Emergencies (teacher notes)

Dyspnea

Definition:
Difficulty breathing (shortness of breath, labored breathing, etc.

What could cause it?
All sorts of things: obstruction, hit to the chest, asthma attack, etc. Today's lesson is all non-traumatic causes (not caused by a hit)

Hypoxia

(this is review from previous lesson on 'shock')

Definition:
lack of oxygen

Signs and Symptoms:
Pale
Cool
Clammy
Cyanosis
Dyspnea
Weakness
Confusion

Respiratory Complications

- Gas exchange (oxygen and carbon dioxide) occurs in the *alveoli*
- If you were to spread out the alveoli into a flat surface, it would be *a tennis court*
- The alveoli are very delicate, being held together by *surfactant*

Pulmonary Edema

Definition:
Water in the lungs

Signs and Symptoms:
- *Difficulty Breathing*
- *Wheezing*
- *Cough – white/pink spit*
- *Shock*

Pneumonia

Definition:
Infection in the lungs

Signs and Symptoms:
- *Fever*
- *Difficulty Breathing*
- *Cough – green/yellow spit*
- *Shock*

Further Complications:

1) **Atelectasis = *Collapsing Lung***
2) **Acidosis = *Build up of carbon dioxide lowers pH in body***
3) **Asphyxiation = *Death by Suffocation***

Non-Traumatic Respiratory Emergencies

1) Hyperventilation

- Hyperventilation is defined as *over-breathing*
- As excess CO_2 is expired, the CO_2 level in the blood *decreases*
- The *oxygen* level does not usually change significantly.

The decrease in CO_2 level causes the body to *suppress the medulla oblongata* and can result in a loss of consciousness.

Signs & Symptoms:
- Rapid, shallow breathing
- Anxiety, Emotional stress
- Lightheadedness, headache
- Numbness and Tingling

Treatment:
- Rest & Relaxation
- Coaching breaths ("Breathe with me")
- "Pursed-lip" breathing
- NO paper bags!
- EMS if necessary

2) Asthma

http://www.youtube.com/watch?v=S04dci7NTPk (informational)

- Asthma affects about *5%* of adults and *10%* of children in North America.
- Some of the things that could trigger an asthma attack include…
    - *allergic reaction,*
    - *respiratory infection,*
    - *cold environment,*
    - *emotional distress,*
    - *heavy exercise,*
    - *etc*
- An asthma attack is caused by the *restriction* of air passageways that makes it increasingly difficult to breathe. This is called a *bronchospasm*

Signs & Symptoms:
• Medical history
• Difficulty breathing
• Wheezing or gasping
• Whistling noises while breathing *(stridor)*
• More difficult breathing OUT
• Anxiety
• (Thick white/yellow mucus)

Treatment:
• Medication (broncodilator): Ventolin
• Rest & Reassurance
• Position of comfort
• Pursed-lip breathing
• EMS if no immediate recovery

3) Aspiration

- Aspiration means to *breathe in liquid*
- Aspiration is often caused by *near-drowning*
- Aspiration can cause your body to react with a *laryngospasm* to prevent liquids from entering the lungs

Signs & Symptoms:

May be delayed by up to 72 hours
Pulmonary Edema & Pneumonia

Treatment:

Position of Comfort
Oxygen
EMS if necessary
Monitor for 72 hours

4) Smoke Inhalation

http://www.youtube.com/watch?v=0Hw308nZrLY (firefighters on marijuana – hilarious)

- Breathing in smoke from a fire has several risks…

  Burning throat

  Particles in lungs

  Dangerous gas in lungs

  Infection in lungs

Signs & Symptoms:

May be delayed by up to 72 hours
Pulmonary Edema & Pneumonia

Treatment:

Position of Comfort
Oxygen
EMS if necessary
Monitor for 72 hours

5) **C.O.P.D.**
http://www.youtube.com/watch?v=aktIMBQSXMo (informational)

- COPD stands for *Chronic Obstructed Pulmonary Disease*
- The most common forms of COPD are *Chronic Emphysema, Chronic Bronchitis*
- It is a condition characterized by *Difficulty Breathing*
- The main cause of COPD is *smoking*

First aid Consideration

- A small percentage of patients with advanced COPD lose their sensitivity to carbon dioxide are triggered to breathe by Oxygen
- This rare condition may have some implications for oxygen therapy. If oxygen is applied to a patient with COPD, it should be given at the same litre flow, but
- If the patient's respiratory condition begins to worsen the litre flow should be *turned down* to 1-2 lpm. If ventilations are necessary, the oxygen litre flow should be maintained at 15 lpm.

**Do not withhold oxygen therapy from any patient who may benefit from its use