7.3 Respiratory Health

In this section, you will:

• **Identify** specific diseases that are associated with the respiratory system
• **Identify** technologies that may be used to treat these respiratory diseases
• **Summarize** the physiological effects of smoking and the limitation of technologies to address these effects

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**Upper Respiratory Tract Infections**

- **Tonsillitis** is an infection of the tonsils, which are located in the pharynx. A viral infection, rather than a bacterial infection, is the more common cause of tonsillitis. The tonsils can be removed surgically if the infections are frequent and breathing is impaired. In the past, many children had their tonsils removed as a precaution, but this surgery is no longer as common. The tonsils help to prevent bacteria and other foreign pathogens from entering the body, so removing them can increase the number of infections later in life.

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**Upper Respiratory Tract Infections**

- **Laryngitis** is an inflammation of the larynx. Recall that the larynx contains the vocal cords. The most common cause of laryngitis is a viral infection; allergies and overstraining of the voice can also lead to laryngitis. When the larynx is inflamed, the vocal cords are not able to vibrate as they normally do. This reduces the ability to speak in a normal voice or even to speak at all. Symptoms of laryngitis include a sore throat and hoarseness.

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**Lower Respiratory Tract Infections**

- **Bronchitis** is a disorder that causes the bronchi to become inflamed and filled with mucus, which is expelled by coughing.
- **Pneumonia** is a disease that occurs when the alveoli in the lungs become inflamed and fill with liquids. This interferes with gas exchange, and the body becomes starved for oxygen.
Lower Respiratory Tract Infections

- **Pleurisy** is a lung disorder that is caused by the swelling and irritation of the pleura, the membranes that surround the lungs.
- **Emphysema** is an obstructive respiratory disorder in which the walls of the alveoli break down and lose their elasticity. This reduces the surface area for gas exchange and causes oxygen shortages in the tissues.
- **Cystic fibrosis** is a serious genetic condition that affects the lungs. Cystic fibrosis is caused by an abnormal gene that disrupts the function of the cells lining the passageways of the lungs.

Lower Respiratory Tract Infections

- **Asthma** is a chronic obstructive lung disease that affects the bronchi and bronchioles, making breathing difficult or impossible because of reduced air flow.
- **Lung cancer** is the uncontrolled and invasive growth of abnormal cells in the lungs. It is the leading cause of cancer deaths for men and women in Canada.

Normal Lungs vs. Diseased Lungs

(A) These normal lungs have healthy red tissue. (The heart is visible near the lower center.) (B) These diseased lungs have black tissue caused by heavy smoking. The white areas are tumors, or carcinomas.
Carcinoma of the Lung

The large ball of cells in the center of the image is a carcinoma that has developed from the interior surface cells of the human lung. The carcinoma continues to grow and invade surrounding tissues, including the lymphatic and blood vessels in the lung. The lymphatic and blood vessels circulate through the body and carry the cancerous cells, or metastatic cells, to new locations where they can grow and invade new tissues.

Assignment

• Smoking and the Respiratory System
  — Pg. 260- Thought Lab

Homework

• Assignment
• Chapter 7 Review
• Pg. 264 # 1-12