Lesson 10.1 Objective

- Discuss anatomic structures and physiologic processes related to the respiratory system.

Respiratory System

- Functions:
  - Exchange of gases
  - Regulates blood pH
  - Provides sense of smell
  - Filters incoming air
  - Produces sounds
  -Eliminates some water and heat

Respiratory System (cont’d.)

- Lungs
  - Separate organs
  - Rests on the diaphragm
  - Right lung has 3 lobes; left lung has 2 lobes

Respiratory System (cont’d.)

- Oxygen diffuses from alveoli into blood
- Carbon dioxide diffuses from blood to alveoli
Respiratory System (cont’d.)

- Pulmonary ventilation – Air movement into and out of lungs
  - consists of inspiration and expiration

Upper Respiratory Tract Infections

- Common cold
- Sinusitis
- Pharyngitis
- Laryngitis
- Influenza
- Infectious mononucleosis

Lesson 10.2 Objectives

- Define upper respiratory tract infections and list appropriate massage considerations.
- Discuss lower respiratory tract infections and list appropriate massage considerations.

Common Cold

- Acute inflammation of the upper respiratory tract mucosa
  - Usually confined to the nose and throat
- Massage is contraindicated

Sinusitis

- Inflammation of the paranasal sinus mucosae
- Massage is contraindicated during acute episodes; otherwise, avoid prone position if pressure of face rest causes pain or in cases of breathing difficulty

Pharyngitis

- Inflammation of the pharynx
  - Also called sore throat
  - Strep throat: pharyngitis due to Streptococcus bacteria
- Massage is contraindicated if caused by infectious agent

From Salvo S: Massage therapy; principles and practice, ed 3, St. Louis, 2007, Saunders.
Laryngitis

- Inflammation of the larynx often resulting in loss of voice
- Massage is contraindicated if due to infectious disease

Influenza

- Viral upper respiratory tract infection
  - Can extend into the lower respiratory tract
- Massage is contraindicated

Infectious Mononucleosis

- Viral respiratory infection caused by EBV; can also be caused by CMV
- Massage is contraindicated

Lower Respiratory Tract Infections

- Pleurisy
- Pneumonia
- Tuberculosis

Pleurisy

- Inflammation of pleural membranes; usually from a secondary disease
- Massage is contraindicated

Pneumonia

- Lung infection; usually bacterial
- Massage is contraindicated; in some instances, client's physician may approve postural drainage while client is recovering
Postural Drainage

- Obtain medical clearance
- Percuss and vibrate back and rib cage for up to 5 mins.
  > Use intervals of 30-45 seconds, pausing 5 seconds between intervals

Tuberculosis

- Bacterial lung infection transmitted by inhalation of infected droplets
- Postpone massage until 4th wk from start of treatment; massage is contraindicated during secondary TB

Lesson 10.3 Objectives

- List chronic obstructive pulmonary diseases along with appropriate massage considerations.
- Identify types and causes of pneumoconioses.
- Discuss the vascular disorders and include appropriate massage considerations.
- Define the expansion disorder and appropriate massage considerations.

Lesson 10.3 Objectives (cont'd.)

- Discuss the immune disorder featured in this chapter and include appropriate massage considerations.
- Contrast and compare a common cold to hay fever.
- Delineate the muscles of respiration.

Chronic Obstructive Pulmonary Diseases
Chronic Obstructive Pulmonary Diseases (cont'd.)

Pink Puffers | Blue Bloaters

Chronic Obstructive Pulmonary Diseases (cont'd.)

- Asthma
- Bronchitis
- Emphysema
- Pneumoconiosis
- Bronchiectasis
- Cystic fibrosis
- Obstructive sleep apnea

Asthma

- Chronic, inflammatory disorder characterized by bronchial obstruction in susceptible persons
- Avoid allergens and triggers; have medications handy if needed

Bronchitis

- Inflammation of bronchial mucosa with resultant swelling and mucous hypersecretion
- Massage is contraindicated in acute cases

Emphysema

- Permanent enlargement of lower airways affecting elasticity in alveolar walls
- Major cause is cigarette smoke

Emphysema (cont'd.)

- Client might need semireclining position if breathing is difficult; in later stages, reduce treatment time and pressure
Pneumoconiosis

- Lung disease from long-term dust inhalation, usually occurring in the workplace
- Reduce treatment time and pressure if client is overly fatigued

Pneumoconiosis, Types (cont’d.)

- Asbestosis – From asbestos
- Allergic alveolitis – From fungal spores
- Chalicosis – From stone dust
- Anthracosis – From carbon particles
- Siderosis – From iron oxide
- Silicosis – From silica or quartz

Bronchiectasis

- Irreversible dilation of bronchi caused by airway infection or inflammation
- Massage is contraindicated if due to infectious agent

Cystic Fibrosis

- Genetic disorder causing hypersecretion of cells that produce mucus, saliva, and digestive juice; poor nutrition and small stature common
- Obtain medical clearance

Obstructive Sleep Apnea

- Temporary cessation of breathing or absence of spontaneous breathing
- Favor client’s preferred position for majority of massage

Vascular Disorders

- Pulmonary edema
- Pulmonary embolism
**Pulmonary Edema**
- Excessive amounts of fluid in lungs which interferes with its ability to expand; this limits gas exchange
- Massage is contraindicated

**Pulmonary Embolism**
- Partial or complete closure of pulmonary artery or one of its branches by an embolus
- Massage is contraindicated

**Expansion Disorders**
- Acute respiratory distress syndrome

**Acute Respiratory Distress Syndrome**
- Severe condition causing fluid build-up in lungs
- Massage is contraindicated

**Immune Disorders**
- Hay fever

**Hay Fever**
- Hypersensitivity of nasal mucosa to allergens
  - Also called allergic rhinitis
- Massage is contraindicated if acute allergic attack; otherwise, avoid allergens and scents that may be a trigger and have medications handy if they are needed
**Common Cold vs. Hay Fever**

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**Muscles of Respiration**

- **Muscles of inspiration:**
  - Primary – diaphragm, external intercostals
  - Secondary (Accessory) – scalenes, sternocleidomastoid, pectoralis minor, serratus anterior, serratus posterior superior

**Muscles of Respiration (cont’d.)**

- **Muscles of expiration**
  - Primary: none (passive process)
  - Secondary: internal intercostals, serratus posterior inferior, abdominals