

Module 2 - Patient Evaluation

This module will engage the learner in activities and gain knowledge in the Patient Evaluation category

Rationale

Why is it important for you to learn this material?

Registered Respiratory Therapists are primarily involved in patient care – from performing diagnostic procedures in order to help diagnose pathology to assisting in providing life support for critically ill patients.

In order to facilitate their role in these scenarios and many others, all Registered Respiratory Therapists should be familiar with the procedures of infection control, the mechanics of pathology, the skills of patient assessment and interviewing, and the diagnosis of pathology via chest radiography.

Learning Outcome

When you complete this module you will be able to

Describe the procedures of infection control, patient interviewing, obtaining a patient history, and patient assessment as they relate to Respiratory Therapy, including the background theory regarding lung diseases such as asthma and COPD.

Learning Objectives

Here is what you will be able to do when you complete each objective.

1. Describe effective hand washing techniques, use of personal protective equipment, and Standard/Universal Precautions.
2. Discuss infections control terminology.
3. Discuss the application of isolation precautions.
4. Describe the necessary components of an effective patient history.
5. Differentiate between the sympathetic and parasympathetic divisions of the autonomic nervous system.
6. Describe the structures of the terminal respiratory unit.
7. Assess the factors affecting pulmonary perfusion.
8. Assess the spectrum of ventilation to perfusion relationships.
9. Explain the physiological process of diffusion in the normal lung.
10. Describe the processes of respiration.
11. Describe the role of the pulmonary capillary bed in external respiration.
12. Identify the locations of where a pulse may be felt.
13. Describe the purpose, procedure, and interpretation of findings for respiratory inspection.
14. Discuss the purpose, procedure, and interpretation of findings for palpation.
15. Discuss the indications, techniques, and limitations of diagnostic percussion.
16. Discuss the purpose, procedure, and interpretation of findings for auscultation.
17. Describe a chest radiograph.
18. Compare factors that produce airway obstructions.
19. Describe the major characteristics of airway obstruction.
20. Compare upper and lower airway obstructions.
21. Describe the restrictive processes of the respiratory system.
22. Compare adult obstructive airway disorders.
23. Discuss intra-pulmonary parenchymal disorders.
24. Compare extra-pulmonary disorders.

Objective 1

When you complete this objective you will be able to...

Describe the rationale and procedures for effective hand washing techniques, use of personal protective equipment, and Standard/Universal Precautions.

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

1. Egan's Fundamentals of Respiratory Care, 8th Edition: Chapter 3, Principles of Infection Control.
2. Mosby's Respiratory Care Equipment, 7th Edition: Chapter 5, Principles of Infection Control.

Objective Checklist:

- Can you describe the correct procedure for hand washing?
- Can you describe the different components of personal protective equipment and the reasons for using them?
- Can you describe what 'Universal/Standard Precautions' means?

Objective 2

When you complete this objective you will be able to...

Discuss infection control terminology including:

- Communicable diseases
- Resistant bacteria
- Iatrogenic
- Super infections
- Nosocomial infections

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

1. Egan's Fundamentals of Respiratory Care, 8th Edition: Chapter 3, Principles of Infection Control.
2. Mosby's Respiratory Care Equipment, 7th Edition: Chapter 5, Principles of Infection Control.
3. Encyclopedia & Dictionary of Medicine, Nursing, & Allied Health, 7th Edition.

Objective Checklist:

- Can you identify how communicable infections are spread?
- Can you describe how nosocomial infections occur in hospital?
- Can you identify the different organisms, including resistant organisms, that can cause infections?
- Can you define 'iatrogenic'?

Objective 3

When you complete this objective you will be able to...

Discuss the application of isolation precautions in terms of:

- Airborne
- Droplet
- Contact
- Contact ARO (Antibiotic Resistant Organism)
- Immunocompromised patients

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

1. Egan's Fundamentals of Respiratory Care, 8th Edition: Chapter 3, Principles of Infection Control.
2. Mosby's Respiratory Care Equipment, 7th Edition: Chapter 5, Principles of Infection Control.

Objective Checklist:

- Can you differentiate the different methods of transmission-based isolation techniques?
- Can you define the technique of protective isolation for patients that are immunosuppressed or compromised?

Objective 4

When you complete this objective you will be able to...

Describe the necessary components of an effective patient history:

- Chief complaint
- History of present illness
- Past medical history
- Personal history
- Family history
- Medications
- Therapies

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

1. Clinical Assessment in Respiratory Care, 4th Edition: Chapter 2, Interviewing and Respiratory History.

Objective Checklist:

1. Can you describe the importance of the chief complaint in the patient history?
2. Can you identify the details of the patient's present history, specifically the description of their symptoms?
3. Can you describe the importance of knowing the patient's past medical and family history?
4. Can you identify ways to ask the patient about their current medications and therapies?

Objective 5

When you complete this objective you will be able to...

Differentiate between the sympathetic and parasympathetic divisions of the Autonomic Nervous System (ANS).

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

1. Respiratory Care Pharmacology, 6th Edition: Chapter 5, The Central and Peripheral Nervous System.

Objective Checklist:

- Can you differentiate between the sympathetic and parasympathetic divisions of the ANS?
- Can you identify the different neurotransmitters and receptors for both the sympathetic and parasympathetic divisions of the ANS?
- Can you identify the physiological effects on the body when either the parasympathetic or the sympathetic divisions are stimulated?

Objective 6

When you complete this objective you will be able to...

Describe the structures of the terminal respiratory unit:

- Alveolar-capillary network
 - Collagen – Elastic fibre network
 - Interstitial spaces
 - Capillary endothelium / alveolar epithelium relationship
- Conducting airways
- Capillary network
- Surface lining layer

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

2. Cardiopulmonary Anatomy & Physiology, 4th Edition: Chapter 1, The Anatomy and Physiology of the Respiratory System.
3. Egan's Fundamentals of Respiratory Care, 8th Edition: Chapter 7, The Respiratory System.

Objective Checklist:

- Can you identify the structures below the conducting airways (the bronchioles)?
- Can you describe the structure of the alveolar capillary membrane?

Objective 7

When you complete this objective you will be able to...

Assess the factors affecting pulmonary perfusion in terms of:

- Position
- Perfusion zones
- Gravity
- Pulmonary vascular tone
- Partial pressure of gases
- Transpulmonary pressures

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

1. Cardiopulmonary Anatomy & Physiology, 4th Edition: Chapter 2, Ventilation.
2. Cardiopulmonary Anatomy & Physiology, 4th Edition: Chapter 8, Ventilation-Perfusion.

Objective Checklist:

- Can you describe the different components of ventilation?
- Can you identify the different zones of perfusion?
- Can you describe the effects of blood pressure changes on perfusion?
- Can you identify the effects of gravity and position on perfusion?

Objective 8

When you complete this objective you will be able to...

Assess the spectrum of ventilation to perfusion relationships:

- Normal
- Shunt
- Deadspace
- V/Q mismatching

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

1. Cardiopulmonary Anatomy & Physiology, 4th Edition: Chapter 2, Ventilation.
2. Cardiopulmonary Anatomy & Physiology, 4th Edition: Chapter 5, The Anatomy and Physiology of the Circulatory System.
3. Cardiopulmonary Anatomy & Physiology, 4th Edition: Chapter 8, Ventilation-Perfusion Relationships.

Objective Checklist:

- Can you differentiate between normal and abnormal ventilation to perfusion relationships?
- Can you differentiate between the 3 types of dead space?
- Can you describe the impact of V/Q mismatching on oxygenation?

Objective 9

When you complete this objective you will be able to...

Explain the physiological process of diffusion in the normal lung.

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

1. Cardiopulmonary Anatomy & Physiology, 4th Edition: Chapter 3, The Diffusion of Pulmonary Gases.

Objective Checklist:

- Can you describe the process of diffusion?
- Can you define Fick's Law of Diffusion?
- Can you describe the barriers to diffusion?

Objective 10

When you complete this objective you will be able to...

Describe the processes of respiration:

- Anabolism
- Catabolism
- Metabolism
- Internal respiration
- External respiration

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

1. Cardiopulmonary Anatomy & Physiology, 4th Edition: Chapter 5, The Anatomy and Physiology of the Circulatory System.
2. Human Anatomy & Physiology, 6th Edition: Chapter 24, Nutrition, Metabolism, and Body Temperature Regulation (Metabolism Section pages 955 - 982).
3. Encyclopedia & Dictionary of Medicine, Nursing, & Allied Health, 7th Edition.

Objective Checklist:

- Can you differentiate between internal and external respiration?
- Can you describe the different processes of metabolism including catabolism and anabolism?

Objective 11

When you complete this objective you will be able to...

Describe the role of the pulmonary capillary bed in external respiration in terms of:

- Distribution of pulmonary blood flow
- Gravity, cardiac output, pulmonary vascular resistance
- Respiratory exchange ratio

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

1. Cardiopulmonary Anatomy & Physiology, 4th Edition: Chapter 5, The Anatomy and Physiology of the Circulatory System.
2. Cardiopulmonary Anatomy & Physiology, 4th Edition: Chapter 8, Ventilation-Perfusion Relationships.

Objective Checklist:

- Can you describe the distribution of pulmonary blood flow?
- Can you describe how pulmonary blood flow can be affected by cardiac output changes?
- Can you define the respiratory exchange ratio and what it indicates?

Objective 12

When you complete this objective you will be able to...

Identify the locations of arteries where a pulse may be felt: apical, pedal dorsalis, brachial, radial, carotid, ulnar, femoral.

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

1. Clinical Assessment in Respiratory Care, 4th Edition: Chapter 3, Vital Signs.

Objective Checklist:

- Can you describe the locations for palpating a pulse?
- Can you describe the technique for palpating a pulse?
- Can you identify the important clinical observations in palpating a pulse?
- Can you describe the techniques for measuring the other vital signs: blood pressure, temperature, and respiratory rate?
- Can you identify the important clinical observations in measuring the other vital signs: blood pressure, temperature, and respiratory rate?

Objective 13

When you complete this objective you will be able to...

Describe the purpose, procedure, and interpretation of findings for respiratory inspection including:

- Rate, rhythm, I:E
- Increased work of breathing, diaphoresis
- Clubbing
- Splinting, body position
- Colour
- Thoracic deformities, scars
- Jugular venous distention

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

1. Clinical Assessment in Respiratory Care, 4th Edition: Chapter 3, Vital Signs.
2. Clinical Assessment in Respiratory Care, 4th Edition: Chapter 4, Physical Examination of the Patient with Cardiopulmonary Disease.

Objective Checklist:

- Can you describe how to assess the rate, rhythm, and patterns of breathing?
- Can you describe the signs of an increased work of breathing: diaphoresis, accessory muscle use, splinting, and tripod position?
- Can you describe the various findings that would be observed via inspection, such as jugular venous distension, cyanosis, scars, and/or clubbing?
- Can you differentiate between the thoracic abnormalities: pectus carinatum, pectus excavatum, kyphosis, scoliosis, kyphoscoliosis, and flail chest?

Objective 14

When you complete this objective you will be able to...

Discuss the purpose, procedure, and interpretation of findings for palpation in terms of:

- Capillary refill
- Tactile fremitus
- Pain on palpation
- Thoracic expansion
- Pedal edema
- Tracheal position
- Subcutaneous emphysema

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

1. Clinical Assessment in Respiratory Care, 4th Edition: Chapter 4, Physical Examination of the Patient with Cardiopulmonary Disease.

Objective Checklist:

- Can you describe how to assess capillary refill and pedal edema?
- Can you describe the technique of palpation for the purposes of assessing pain, fremitus, thoracic expansion, tracheal position, and subcutaneous emphysema?
- Can you identify the normal and abnormal findings that would be observed during palpation?

Objective 15

When you complete this objective you will be able to...

Discuss the indications, techniques, and limitations of diagnostic percussion in terms of:

- Hyper / hypo resonance
- Diaphragmatic excursion

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

2. Clinical Assessment in Respiratory Care, 4th Edition: Chapter 4, Physical Examination of the Patient with Cardiopulmonary Disease.

Objective Checklist:

- Can you list the indications for performing percussion?
- Can you describe the technique of percussion in order to assess for resonance and for diaphragmatic excursion?
- Can you describe the normal and abnormal findings that would be obtained via percussion?

What are the limitations of percussion as a diagnostic tool, specifically for diaphragmatic excursion?

Objective 16

When you complete this objective you will be able to...

Discuss the purpose, procedure, and interpretation of findings for auscultation in terms of etiology, pitch, location, intensity, and relation to breathing cycle:

- Breath sounds: bronchial, bronchovesicular, vesicular
- Adventitious sounds: wheezes, crackles, rubs
- Voice sounds: bronchophony, pectoriloquy, egophony

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

3. Clinical Assessment in Respiratory Care, 4th Edition: Chapter 4, Physical Examination of the Patient with Cardiopulmonary Disease.

Objective Checklist:

- Can you define the purpose of auscultation?
- Can you describe the technique of auscultation?
- Can you describe normal breath sounds in terms of pitch, location, intensity, and relation to breathing cycle?
- Can you describe abnormal breath sounds in terms of pitch, location, intensity, and relation to breathing cycle?
- Can you differentiate between bronchophony, pectoriloquy, and egophony in terms of etiology, location, and technique?

Objective 17

When you complete this objective you will be able to...

Describe a chest radiograph in terms of:

- Densities
- Abnormalities
- Quality
- Anatomical landmarks
- Tubes and lines
- Pathology:
 - Atelectasis
 - Pneumonia
 - Respiratory distress syndrome
 - Pleural effusions
 - Pneumothorax
 - Pulmonary edema
 - Foreign body aspiration
 - Hyperinflation

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

4. Clinical Assessment in Respiratory Care, 4th Edition: Chapter 8, Clinical Application of the Chest Radiograph.
5. Egan's Fundamentals of Respiratory Care, 8th Edition: Chapter 18, A Synopsis of Thoracic Imaging.

Objective Checklist:

- Can you identify the techniques used to assess the quality of a chest radiograph?
- Can you describe the normal landmarks of a chest radiograph?
- Can you identify the techniques for assessing tube and line positions?
- Can you differentiate between the above pathologies in their clinical findings on chest radiographs?

Objective 18

When you complete this objective you will be able to...

Compare factors that produce airway obstructions such as dynamic compression, inflammation, foreign bodies, secretions, hypertrophy, and spasm.

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

1. Cardiopulmonary Anatomy & Physiology, 4th Edition: Chapter 4, Pulmonary Function Measurements.
2. Pulmonary Pathophysiology, The Essentials, 5th Edition: Chapter 4, Obstructive Diseases.

Objective Checklist:

- Can you identify and describe dynamic compression and its implications?
- Can you identify the mechanisms of airway obstruction?

Objective 19

When you complete this objective you will be able to...

Describe the major characteristics of airway obstruction including changes in lung volumes or flows, and gas exchange abnormalities.

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

1. Egan's Fundamentals of Respiratory Care, 8th Edition: Chapter 17, Pulmonary Function Testing.
2. Cardiopulmonary Anatomy & Physiology, 4th Edition: Chapter 4, Pulmonary Function Measurements.

Objective Checklist:

- Can you describe obstructive disease in terms of pulmonary function findings?
- Can you identify the findings for diffusing capacity that would be characteristic of obstructive disease?

Objective 20

When you complete this objective you will be able to...

Compare upper and lower airway obstructions.

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

1. Egan's Fundamentals of Respiratory Care, 8th Edition: Chapter 17, Pulmonary Function Testing.
2. Pulmonary Pathophysiology, The Essentials, 5th Edition: Chapter 4, Obstructive Diseases.

Objective Checklist:

- Can you differentiate between upper and lower airway obstruction?

Objective 21

When you complete this objective you will be able to...

Describe the restrictive processes of the respiratory system in terms of origins (intrapulmonary/extrapulmonary) and major effects such as:

- Decreased compliance
- Decreased lung capacities
- Diffusion impairment
- Small airway disease
- Gas exchange abnormalities
- Pulmonary hypertension

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

1. Egan's Fundamentals of Respiratory Care, 8th Edition: Chapter 17, Pulmonary Function Testing.
2. Pulmonary Pathophysiology, The Essentials, 5th Edition: Chapter 5, Restrictive Diseases.
3. Pulmonary Pathophysiology, The Essentials, 5th Edition: Chapter 6, Vascular Diseases (Pulmonary Hypertension pages 111-112).

Objective Checklist:

- Can you describe restrictive disease in terms of pulmonary function findings?
- Can you identify the findings for diffusing capacity that would be characteristic of restrictive disease?
- Can you describe pulmonary hypertension and its implications on the function of the lung?

Objective 22

When you complete this objective you will be able to...

Compare adult obstructive airway disorders in terms of definition, incidence, etiology, differential diagnosis, pathophysiology, clinical manifestations, laboratory findings, management, prognosis, and prevention:

- Asthma
- Cystic fibrosis
- Bronchiectasis
- Emphysema
- Chronic bronchitis
- Bronchogenic carcinoma
- Vocal cord dysfunction

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

1. Egan's Fundamentals of Respiratory Care, 8th Edition: Chapter 20, Obstructive Lung Disease: COPD, Asthma, and Related Diseases.
2. Egan's Fundamentals of Respiratory Care, 8th Edition: Chapter 28, Neonatal and Pediatric Respiratory Disorders (Cystic Fibrosis, pages 620 - 621).
3. Pulmonary Pathophysiology, The Essentials, 5th Edition: Chapter 4, Obstructive Diseases.
4. Pulmonary Pathophysiology, The Essentials, 5th Edition: Chapter 7, Environmental and Other Diseases (Bronchogenic carcinoma & Cystic fibrosis).
5. <http://www.emedicine.com/med/topic3563.htm> for vocal cord dysfunction.

Objective Checklist:

- Can you describe asthma in terms of definition, incidence, etiology, differential diagnosis, pathophysiology, clinical manifestations, laboratory findings, management, prognosis, and prevention?
- Can you describe cystic fibrosis in terms of definition, incidence, etiology, differential diagnosis, pathophysiology, clinical manifestations, laboratory findings, management, prognosis, and prevention?
- Can you describe bronchiectasis in terms of definition, incidence, etiology, differential diagnosis, pathophysiology, clinical manifestations, laboratory findings, management, prognosis, and prevention?

- Can you describe COPD (Emphysema, chronic bronchitis) in terms of definition, incidence, etiology, differential diagnosis, pathophysiology, clinical manifestations, laboratory findings, management, prognosis, and prevention?
- Can you describe bronchogenic carcinoma in terms of definition, incidence, etiology, differential diagnosis, pathophysiology, clinical manifestations, laboratory findings, management, prognosis, and prevention?
- Can you describe vocal cord dysfunction in terms of definition, incidence, etiology, differential diagnosis, pathophysiology, clinical manifestations, laboratory findings, management, prognosis, and prevention?

Objective 23

When you complete this objective you will be able to...

Discuss intra-pulmonary parenchymal disorders in terms of definition, incidence, etiology, differential diagnosis, pathophysiology, clinical manifestations, laboratory findings, management, prognosis, and prevention:

- Acute respiratory distress syndrome
- Aspergillosis
- Aspiration (near drowning, gastric)
- Collagen disorders (sclerosis, lupus)
- Hypersensitivity pneumonitis
- Idiopathic pulmonary fibrosis
- Inhalation of tobacco smoke / pollution / toxic gases
- Malignant neoplasms
- Oxygen toxicity
- Pharmacological toxicity
- Pneumoconiosis
- Pneumonia
- Pulmonary contusion / hemorrhage / edema
- Sarcoidosis
- Tuberculosis

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

1. Egan's Fundamentals of Respiratory Care, 8th Edition: Chapter 24, Acute Lung Injury, Pulmonary Edema, and Multiple System Organ Failure for ARDS, pulmonary contusion/hemorrhage/edema.
2. <http://www.emedicine.com/radio/topic55.htm> for Aspergillosis.
3. <http://www.emedicine.com/ped/topic2570.htm> for Near Drowning.
4. Egan's Fundamentals of Respiratory Care, 8th Edition: Chapter 21, Interstitial Lung Disease for Collagen Disorders, Hypersensitivity Pneumonitis, Idiopathic Pulmonary Fibrosis, Oxygen and Pharmacological Toxicity, Pneumoconiosis, Sarcoidosis, Inhalation of Toxic Gases and Pollution.
5. Egan's Fundamentals of Respiratory Care, 8th Edition: Chapter 25, Lung Neoplasms for Inhalation of Tobacco Smoke and Malignant Neoplasms.
6. Egan's Fundamentals of Respiratory Care, 8th Edition: Chapter 19, Pulmonary Infections for Pneumonia and Gastric Aspiration.
7. Encyclopedia & Dictionary of Medicine, Nursing, & Allied Health, 7th Edition pages 1828 - 1831 for Tuberculosis.

Objective Checklist:

- Can you describe Acute Respiratory Distress Syndrome and acute lung injury in terms of definition, incidence, etiology, differential diagnosis, pathophysiology, clinical manifestations, laboratory findings, management, prognosis, and prevention?
- Can you describe Aspergillosis in terms of definition, incidence, etiology, differential diagnosis, pathophysiology, clinical manifestations, laboratory findings, management, prognosis, and prevention?
- Can you describe Near Drowning in terms of definition, incidence, etiology, differential diagnosis, pathophysiology, clinical manifestations, laboratory findings, management, prognosis, and prevention?
- Can you describe all the disorders of Interstitial Lung Disease in terms of definition, incidence, etiology, differential diagnosis, pathophysiology, clinical manifestations, laboratory findings, management, prognosis, and prevention?
- Can you describe the effects of Smoking in association with Malignant Neoplasms in terms of definition, incidence, etiology, differential diagnosis, pathophysiology, clinical manifestations, laboratory findings, management, prognosis, and prevention?
- Can you describe Pneumonia in terms of definition, incidence, etiology, differential diagnosis, pathophysiology, clinical manifestations, laboratory findings, management, prognosis, and prevention?
- Can you describe Tuberculosis in terms of definition, incidence, etiology, differential diagnosis, pathophysiology, clinical manifestations, laboratory findings, management, prognosis, and prevention?

Objective 24

When you complete this objective you will be able to...

Compare extra-pulmonary disorders in terms of definition, incidence, etiology, differential diagnosis, pathophysiology, clinical manifestations, laboratory findings, management, prognosis, and prevention:

- Chylothorax
- Fibrothorax
- Obesity
- Pleural effusion
- Pneumothorax
- Traumatic chest wall injuries
- Thoracic cage deformities
 - Kyphosis, scoliosis
 - Pectus excavatum, pectus carinatum
 - Ankylosing spondylitis

Learning Activity

Complete each of the Learning Activities listed below.

Please read and review the following:

- Egan's Fundamentals of Respiratory Care, 8th Edition: Chapter 22, Pleural Diseases for Chylothorax, Pleural Effusion, Pneumothorax, Traumatic Chest Injury.
- Encyclopedia & Dictionary of Medicine, Nursing, & Allied Health, 7th Edition, Saunders Publishing for Fibrothorax, Pectus Excavatum, Pectus Carinatum.
- Egan's Fundamentals of Respiratory Care, 8th Edition: Chapter 26, Neuromuscular and Other Diseases of the Chest Wall for Kyphosis, Scoliosis, Kyphoscoliosis, Flail Chest, and Ankylosing Spondylitis.
- <http://www.emedicine.com/ped/topic1627.htm> for Obesity.

Objective Checklist:

- Can you describe Pneumothorax, Chylothorax, and Pleural Effusions in terms of definition, incidence, etiology, differential diagnosis, pathophysiology, clinical manifestations, laboratory findings, management, prognosis, and prevention?
- Can you define Fibrothorax?
- Can you differentiate between the thoracic cage deformities in terms of definition, incidence, etiology, differential diagnosis, pathophysiology, clinical manifestations, laboratory findings, management, prognosis, and prevention?

- Can you differentiate between the traumatic chest injuries in terms of definition, incidence, etiology, differential diagnosis, pathophysiology, clinical manifestations, laboratory findings, management, prognosis, and prevention?