**OEC Chapter 6: Anatomy and Physiology**

**Overview:** This chapter contains basic information about the body’s organs and systems. This is one of the most important chapters in the textbook, but there’s also a lot of material to cover. Plan to spend more time on this chapter than most.

**Major points:**

* Anatomy is the study of the *structure* of the body; physiology is the study of its *function*.
* OEC technicians need basic understanding of anatomy and physiology.
* EMS personnel use specialized directional and anatomic vocabulary to describe locations on the body, body direction, and body movement.
* Body systems consist of groups of organs working together to perform a specific function. There are 11 body systems which interact to make the body function and maintain homeostasis:
  + Respiratory system
  + Cardiovascular system
  + Nervous system
  + Digestive system
  + Urinary system
  + Endocrine system
  + Integumentary (skin) system
  + Skeletal system
  + Muscular system
  + Reproductive
  + Lymphatic system
* Understanding normal human anatomy and physiology is necessary to determine illness or trauma in patients.
* Injury or illness in one system will often affect other systems.

**Must Study**:

* Figure 6-1: know the terms for body planes and directions.
* Figure 6-2 and 6-3: know what adduction and abduction are.
* Figures 6-4 through 6-9: know basic body positions and why you might place a patient in them, e.g. lateral recumbent if they may vomit, High-Fowler for respiratory distress.
* Table 6-1: don’t have to memorize this verbatim; just know what each system does.
* Figure 6-10: familiarize yourself with this image and know most of the terms.
* Figure 6-11 through 6-13, 6-15: know the path blood takes through the heart and lungs to/from the rest of the body. Ideally you will also memorize each of the anatomic terms presented.
  + Veins → Vena Cava (sup. & inf.) → Right Atrium → Right Ventricle → Pulmonary Arteries → Lungs → Pulmonary Veins → Left Atrium → Left Ventricle → Aorta → Arteries
* Figure 6-16 & 6-17: you don’t need to memorize the name of every major vein & artery, but you should be familiar with the names and have a good understanding of their positions in the body. You should memorize the pulse-taking arteries (those in Fig. 6-17).
* Figures 6-19 & 6-19: know the difference between the central and peripheral nervous systems and the 3 major divisions of the brain.
* Figures 6-22 & 6-23: you should have a good understanding of which digestive organs reside in which of the four quadrants.
* Figure 6-26: understand the two layers of skin and the subcutaneous fat layer.
* Figure 6-27: **this is an important figure**. Memorize most of these bones, as well as the sections of the spine (cervical, thoracic, etc.).
* Figure 6-28: memorize the major muscles.
  + Know the difference between a tendon and a ligament.

**Key terms:** *Abduction, Adduction, Artery, Blood pressure, Body system, Brain, Capillaries, Cardiovascular system, Cells, Central nervous system, Diaphragm, Digestive system, Endocrine system, Extension, Flexion, Human anatomy, Human physiology, Immune response, Immunity, Integumentary system, Ligaments, Lymphatic system, Muscular system, Nervous system, Neuron, Organs, Peripheral nervous system, Reproductive system, Respiratory system, Skeletal system, Tendon, Tissue, Urinary system, Vein*