

CHAPTER 1 : INTRODUCTION TO THE HUMAN BODY:

ANATOMY = Study of the structures that make up the body and their relationships to one another. (parts)

PHYSIOLOGY = Study of the functions of those structures.

SUBDIVISIONS OF ANATOMY AND PHYSIOLOGY:

1. **GROSS ANATOMY** - Study of large, easily observable structures.
2. **MICROSCOPIC ANATOMY** - Study of very small structures with the use of a microscope. (cannot be seen by the naked eye)
3. **NEUROPHYSIOLOGY** - Study of the workings of the nervous system. (Brain - master gland)
4. **CARDIAC PHYSIOLOGY** - study of the function of the heart.

LEVELS OF STRUCTURAL ORGANIZATION:

1. **CHEMICAL LEVEL** - composed of atoms and molecules necessary to maintain life. *building blocks of life*
2. **CELLULAR LEVEL** - consists of **CELLS**, the functional units of the body. *should always be even functional units*
3. **TISSUE LEVEL** - groups of similarly specialized cells. *(same color, same shape & size)*
4. **ORGAN LEVEL** - structures of definite form and function which are composed of two or more different tissues. ** phagocytosis - immune system fighting off infections*
5. **SYSTEM LEVEL** - associations of organs that have a common function. The systems together constitute an **ORGANISM**. *(Integumentary system - skin (external protection of the body))*
** excretory organs regulate body temperature*

SYSTEMS OF THE BODY:

1. **INTEGUMENTARY SYSTEM** - the external covering of the body, which consist of the skin and hair covering.

FUNCTIONS:

- a. Cushions and protects the deeper tissues from injury.
- b. Acts as a minor excretory organ by eliminating salts and urea in perspiration.
- c. Regulates body temperature.

2. **SKELETAL SYSTEM** - consists of bones, cartilage, ligaments and joints.

FUNCTIONS: (framework of the body)

- a. Supports the body.
- b. Serves as a framework for the attachment of skeletal muscle.
- c. Provides protection to some body parts (skull encloses the brain).

3. **MUSCULAR SYSTEM** - function for movement due to contraction of muscles.

eg. Heart muscle move fluids (blood); food is moved along the tubes. *voluntary muscles - move w/ the instruction of the brain.*

4. **NERVOUS SYSTEM** - consist of the brain, spinal cord, nerves and sensory receptors. ** Peripheral Nervous System*

FUNCTIONS: (ability to see what happens around us)

- a. Irritability and conductivity.

5. **ENDOCRINE SYSTEM** - consists of endocrine glands that secretes hormones, which control bodily activities.

- glands include pituitary, thyroid, parathyroids, adrenals, thymus, pancreas, pineal, ovaries and testes. *responsible for growth*

6. **CARDIOVASCULAR SYSTEM** - includes the heart, blood vessels, and blood.

FUNCTIONS:

- a. Blood transports oxygen, nutrients and hormones to and from the tissues where exchanges are made *blood transporting agents*
- b. White blood cells in the blood protects the body from foreign invaders such as bacteria and toxins.
- c. The heart pumps blood through blood vessels to all body tissues.

7. **LYMPHATIC SYSTEM** - includes the lymphatic vessels, lymph nodes and other lymphoid organs such as the spleen and tonsils. *- immune system*

FUNCTIONS:

- a. Help cleanse the blood.
- b. House the cells involved in immunity.