Chapter 1 - Introduction to the Structure and Function of the Body
**Anatomy** – the study of the structure of an organism and the relationships of its parts.

**Physiology** – the study of the functions of living organisms and their parts.

**Dissection** – cutting technique used to separate body parts for study.

All parts of the body have a particular size, shape, form, or position in the body related to its function.
6 Levels of structural organization:

1.) **Chemical level** – are the atoms and molecules that make up cells

2.) **Cells** – the smallest living units of structure and functions in our body

3.) **Tissues** – many similar cells that act together to perform a specific function
4.) **Organs** – group of several different kinds of tissues arranged so that they can together act as a unit to perform a special function

5.) **Organ Systems** – an organization of varying numbers and kinds of organs arranged so that they can together perform complex functions for the body

6.) **Body as a whole** – everything above working together to ensure a healthy body
Anatomical position – the body standing with the arms at the sides and the palms facing forward, the head and feet are also facing forward

Supine  – when the body is lying face up

Prone  – when the body is lying face down
Directional Terms:

1) **superior** – towards the head  
   **inferior** – towards the feet

2) **anterior** – in front of  
   **posterior** – in back of

3) **medial** – toward the midline of the body  
   **lateral** – toward the sides of the body or away from the midline
4) **proximal** – towards or nearest the trunk of the body or nearest the point of origin of one of its parts

**distal** – away from or farthest from the trunk or the point of origin of a body part

5) **superficial** – nearer to the surface

**deep** – farther away from the body surface
Planes of the body

1) **sagittal** – a lengthwise plane running from front to back, cuts into right and left halves

2) **frontal** – lengthwise plane running from side to side, cuts into front and back halves

3) **transverse** – a horizontal or crosswise plane, cuts into upper and lower halves
There are two main cavities in the body:

1) **Dorsal body cavity** – head and spinal region

2) **Ventral body cavity** – chest and abdominal regions
Ventral body cavity includes:

1) **thoracic cavity** – chest space

- **mediastinum** – mid-portion of the thoracic cavity

- right and left **pleural cavities** – outside portions of the thoracic cavity

2) **abdominopelvic cavity** – contains both the abdominal cavity and the pelvic cavity
The body as a whole can be divided into two major portions.

1) **axial** – consists of the head, neck, and torso or trunk

2) **appendicular** – consists of the upper and lower extremities
The body grows until a certain age and then **atrophy** – the wasting away of tissue occurs.

**Homeostasis** – is constant internal body conditions. This is key for survival.
In each cell conditions must remain relatively similar for it to survive. These include temperature, salt content, acid level, fluid volume and pressure, oxygen concentration, and others.

The body works very hard to maintain ideal internal conditions. The control system of the body is called a **feedback loop**.