

- Anatomy – study of the structure and shape of the body and its parts
- Physiology – study of how the body and its parts work or function
- Gross Anatomy
 - Large structures
 - Easily observable
- Microscopic Anatomy
 - Very small structures
 - Can only be viewed with

Integumentary

- Forms the external body covering
- Protects deeper tissue from injury
- Synthesizes vitamin D
- Location of cutaneous nerve receptors
- a microscope

- Skeletal
 - Protects and supports body organs
 - Provides muscle attachment for movement
 - Site of blood cell formation
 - Stores minerals
- Muscular
 - Allows locomotion
 - Maintains posture
 - Produces heat
- Nervous
 - Fast-acting control system
 - Responds to internal and external change
 - Activates muscles and glands
- Endocrine
 - Secretes regulatory hormones
 - Growth
 - Reproduction
 - Metabolism
- Cardiovascular
 - Transports materials in body via blood pumped by heart
 - Oxygen
 - Carbon dioxide
 - Nutrients
 - Wastes
- Lymphatic
 - Returns fluids to blood vessels
 - Disposes of debris
 - Involved in immunity

- Respiratory
 - Keeps blood supplied with oxygen
 - Removes carbon dioxide
- Digestive
 - Breaks down food
 - Allows for nutrient absorption into blood
 - Eliminates indigestible material
- Urinary
 - Eliminates nitrogenous wastes
 - Maintains acid – base balance
 - Regulation of materials
 - Water
 - Electrolytes
- Reproductive
 - Production of offspring

Necessary Life Functions

- Maintain Boundaries
- Movement
 - Locomotion
 - Movement of substances
- Responsiveness
 - Ability to sense changes and react
- Digestion
 - Break-down and delivery of nutrients
- Metabolism – chemical reactions within the body
 - Production of energy
 - Making body structures
- Excretion
 - Elimination of waste from metabolic reactions
- Reproduction
 - Production of future generation
- Growth
 - Increasing of cell size and number

Survival Needs

- Nutrients
 - Chemicals for energy and cell building
 - Includes carbohydrates, proteins, lipids, vitamins, and minerals
- Oxygen
 - Required for chemical reactions
- Water
 - 60–80% of body weight
 - Provides for metabolic reaction
- Stable body temperature
- Atmospheric pressure must be appropriate

Homeostasis

- Maintenance of a stable internal environment = a dynamic state of equilibrium
- Homeostasis must be maintained for normal body functioning and to sustain life
- Homeostatic imbalance – a disturbance in homeostasis resulting in disease
- The body communicates through neural and hormonal control systems
 - Receptor
 - Responds to changes in the environment (stimuli)
 - Sends information to control center
 - Control center
 - Determines set point
 - Analyzes information
 - Determines appropriate response
 - Effector
 - Provides a means for response to the stimulus

Language of Anatomy

- Special terminology is used to prevent misunderstanding
- Exact terms are used for:
 - Position
 - Direction
 - Regions
 - Structures