

# 1 Organization of the Body

## *Chapter Summary*

Chapter one serves as a basic introduction to the study of anatomy and physiology. Anatomy is the study of the structure of the body parts while physiology is the study of the function of these parts. The levels of organization in the body are discussed. These levels progress from atoms to molecules, cells, tissues, organs, body systems, and, finally, the human organism. When the human body is in the anatomical position, standing erect, arms at side, and face, hands, and toes forward, various terms can be used to describe the location of body parts and organs. These terms are explained, as are terms used to describe body sectioning, body regions, and major cavities in the body. The major functions of the organ systems are also summarized and the concept of homeostasis is explained. Homeostasis is the relative constancy of the internal environment, which consists of blood and tissue fluid. All of the body systems contribute to homeostasis.

## *Chapter Outline*

- I. The Human Body
  - A. Organization of Body Parts
- II. Anatomical Terms
  - A. Directional Terms
  - B. Regions of the Body
  - C. Planes and Sections of the Body
- III. Body Cavities and Membranes
  - A. Posterior (Dorsal) Cavity
  - B. Anterior (Ventral) Cavity
    1. Thoracic Cavity
    2. Abdominopelvic Cavity
- IV. Organ Systems
  - A. Support, Movement, and Protection
    1. Integumentary System
    2. Skeletal System
    3. Muscular System
  - B. Integration and Coordination
    1. Nervous System
    2. Endocrine System
  - C. Maintenance of the Body
    1. Circulatory System
    2. Lymphatic System
    3. Respiratory System
    4. Digestive System
    5. Urinary System
  - D. Reproduction and Development
    1. Male Reproductive System
    2. Female Reproductive System

- V. Homeostasis
  - A. Negative Feedback
  - B. Positive Feedback
  - C. Homeostasis and Body Systems
  - D. Disease

*Suggested Student Activities*

1. Identify organs on a dissectable mannequin and match them to their organ system and its functions.
2. Practice using anatomical terms and demonstrate their proper usage on a mannequin or a fellow student.
3. With the help of the instructor discuss how various common diseases affect homeostasis.
4. Discuss how the household thermostat and negative feedback work alike.
5. Identify body cavities and body cavity regions on a dissectable mannequin and list the organs found within each cavity and region.

*Answers to Objective Questions*

- I. 1 c, 2 f, 3 g, 4 a, 5 b, d
- II. 6 c, 7 e, 8 b, 9 a, 10 d, 11 g, 12 f
- III. 13 d, 14 c, 15 e, 16 a, 17 d, 18 b
- IV. 19 g, 20 c, 21 d, 22 e, 23 f, 24 a, 25 b
- V. 26. organ
- 27. midsagittal
- 28. homeostasis

*Answers to Medical Terminology Reinforcement Exercise*

- |            |           |                           |
|------------|-----------|---------------------------|
| 1. above   | 6. chest  | 11. a                     |
| 2. beneath | 7. sides  | 12. a                     |
| 3. stomach | 8. eye    | 13. blood                 |
| 4. abdomen | 9. back   | 14. inflammation, kidneys |
| 5. head    | 10. study | 15. a                     |

*Audiovisual Materials*

1. Dissectable mannequin
2. Anatomical charts and models
3. Transparencies on an overhead projector