

I. Epithelial Tissue

● A. General Characteristics

- 1. Epithelial tissue is commonly called epithelium.
 -
 - One surface is free (may have cilia) and the other adheres to a noncellular basement membrane.
 - *Simple epithelium* consists of a single layer of cells (squamous, cuboidal, columnar);
 - *Stratified epithelium* consists of two or more layers of cells; example: skin

B. Cell-to-Cell Contacts

- 1. Epithelial cells adhere tightly to one another by means of special attachment sites; this prevents leakage

C. Glandular Epithelium

- 1. Glands are single cells or multicelled secretory structures.
- 2. _____ glands often secrete through ducts to free surfaces; they secrete mucus, saliva, wax, milk, and so on.
- 3. _____ glands secrete hormones directly into intercellular fluid for distribution by the blood.

II. Connective Tissue

- A. Most connective tissue contains cells and fibers (collagen and/ or elastin) secreted by fibroblasts, all scattered in a ground substance.

B. Connective Tissues

- 1. _____ – supports epithelia and organs and surrounds blood vessels and nerves
- 2. _____ contains a dense array of cells (chondrocytes) in a jellylike ground substance.
 - a. It _____ and _____ the shape of body parts; it resists compression and is resilient.
 - b. Locations include the

- 3. _____ stores mineral salts, _____, and provides spaces for its own living osteocytes.
 - a. Organized as _____ plates and cylinders, bones support and protect body tissues and organs; some have sites for blood cell production.
 - b. Bones work with _____ to perform movement.
- 4. _____ cells are specialized for the storage of fat, which can be used as an energy reserve and as cushions to pad organs.
- 5. _____ transports _____, wastes, hormones, and enzymes; it also contains clotting factors to protect against bleeding and components to protect against disease-causing agents.

III. Muscle Tissue

- A. Muscle tissue contracts in response to stimulation, then passively lengthens.
- B. There are three varieties of muscle:
 - 1. _____ *muscle* tissue attaches to bones for voluntary movement; it contains striated, multinucleated, long cells.
 - 2. _____ muscle tissue contains spindle-shaped cells; it lines the gut, blood vessels, and glands; its operation is involuntary.
 - 3. _____ (heart) muscle is composed of short, striated cells that can function in units.

IV. Nervous Tissue

- A. Nervous tissue exerts the greatest control over the body's responsiveness to changing conditions.
 - 1. _____ are excitable cells, organized as lines of communication throughout the body.
 - 2. _____ are diverse cells that protect and metabolically support the neurons.

V. Organ Systems

- A. Overview of the Major Organ Systems
 - A. Eleven organ systems in vertebrates contribute to the survival of the living cells of the body.