Body Tissues

A. Tissues are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

B. Four primary tissues types:

1. \_\_\_\_\_\_\_\_\_\_\_\_ (covering)

2. \_\_\_\_\_\_\_\_\_\_\_\_ (support)

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (control)

4. \_\_\_\_\_\_\_\_\_\_\_\_ (movement)

Epithelium

A. Found in different areas of the body, such as\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, body linings, and glandular tissue.

B. Functions are for \_\_\_\_\_\_\_\_\_\_\_\_\_ (skin), \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (small intestine), filtration (kidneys), and \_\_\_\_\_\_\_\_\_\_\_ (glands).

C. Characteristics of epithelial tissue include:

1. Cells fit closely together

2. Tissue layer always has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (the apical surface) that is exposed to the

cavity of an internal organ or the body’s exterior.

3. The lower surface is bound by a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (these tissues have no blood supply of their own)

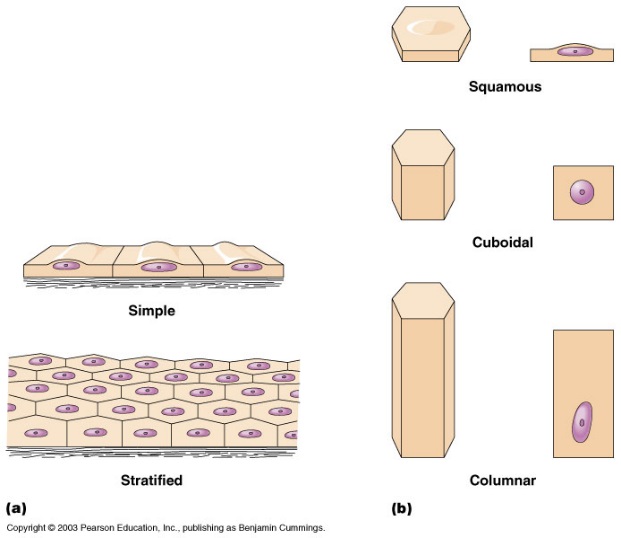
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ if nourished.

D. Classification of epithelium

1. Number of cell layers

a. \_\_\_\_\_\_\_\_\_\_\_ - one layer

b. \_\_\_\_\_\_\_\_\_\_\_- more than one layer

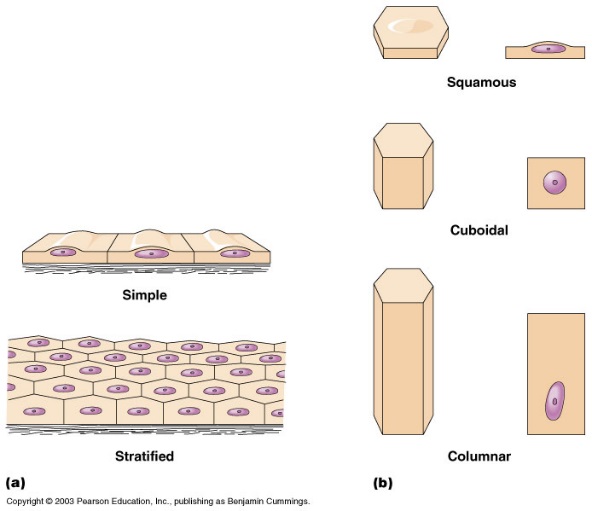


2. Shape of cells

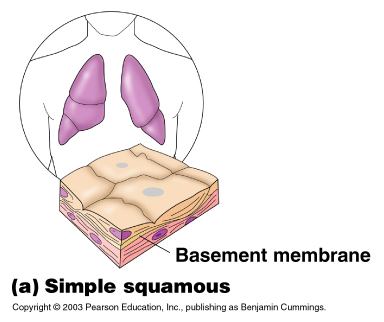
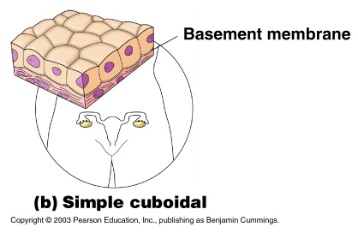
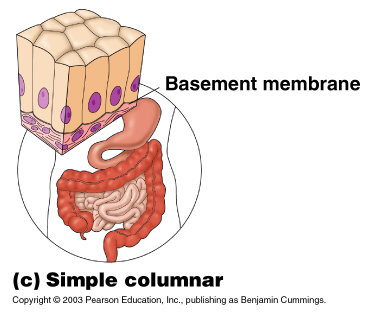
a. \_\_\_\_\_\_\_\_\_\_\_- flattened

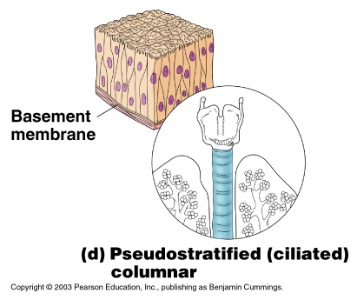
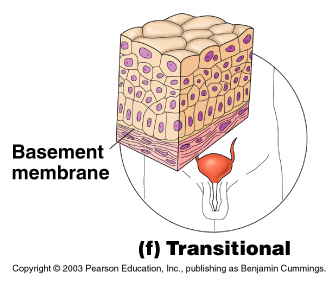
b. \_\_\_\_\_\_\_\_\_\_\_- cube shaped

c. \_\_\_\_\_\_\_\_\_\_\_\_- column- like



Types of Epithelium

Connective Tissue

A. Found everywhere in the body, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and widely distributed tissue.

B. Functions include: binding tissues together, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

C. Characteristics of connective tissue:

1. Variations in blood supply- some tissue types are well vascularized (have good blood supply),

while some have a poor blood supply (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_). Cartilage is avascular.

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- the nonliving material that surrounds the tissue. (This is what makes connective tissue so different from other tissues.)

a. Matrix is composed of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (water, protein, and other molecules) and \_\_\_\_\_\_\_\_\_ (collagen, elastic, reticular).

b. The matrix allows connective tissue to act as a soft packing tissue around organs

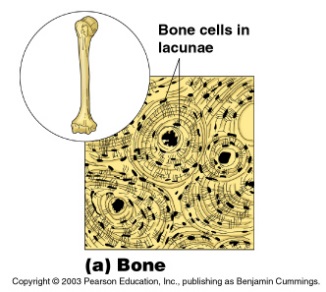
(adipose tissue), to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_ (bones, tendons and ligaments).

D. Connective tissue types:

1. Bone (osseous) - composed of \_\_\_\_\_\_\_\_\_\_\_\_\_, hard matrix, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , large numbers of collagen fibers.

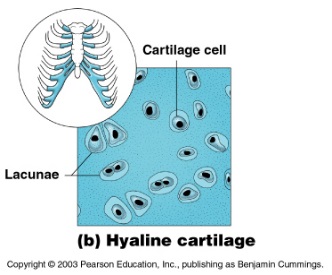
a. used to protect and support the body



2. Hyaline Cartilage- most common type of cartilage, composed of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

a. Entire \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is hyaline cartilage, but by the time of birth, most cartilage

is replaced by bone.

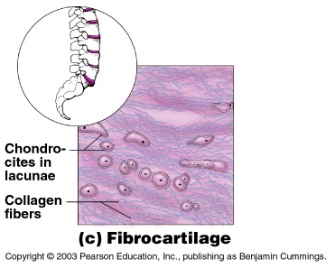


3. Elastic cartilage- provides \_\_\_\_\_\_\_\_\_\_\_\_\_

a. Example- supports the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

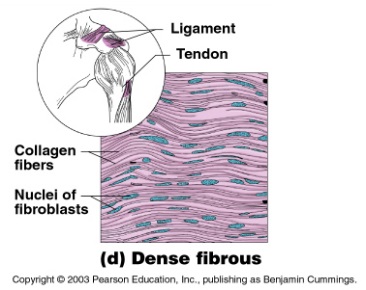
4. Fibrocartilage- highly compressible

a. Example- forms cushion-like \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



5. Dense connective tissue- main\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ fibers which form strong rope-like structures, (the collagen producing cells are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

a. Example- \_\_\_\_\_\_\_\_\_\_\_ (attach muscle to bone), \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (attach bone to bone)

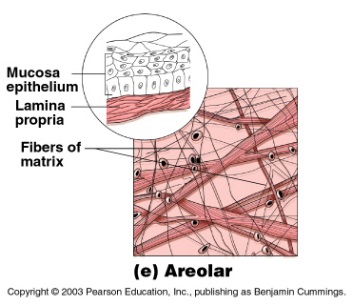


6. Areolar connective tissue-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ connective tissue that serves as a kind of universal packing material between other tissues.

a. contains all fiber types,

b. can \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (this is the tissue that swells causing edema)

c. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and “glue” that holds internal organs together

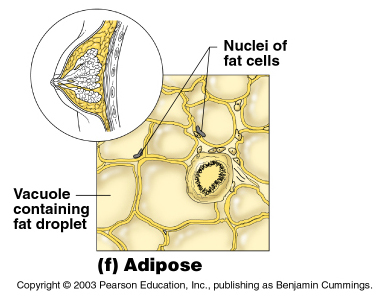


7. Adipose tissue- commonly \_\_\_\_\_\_\_\_\_\_\_\_\_\_

a. matrix is Areolar tissue in which fat globules are predominate

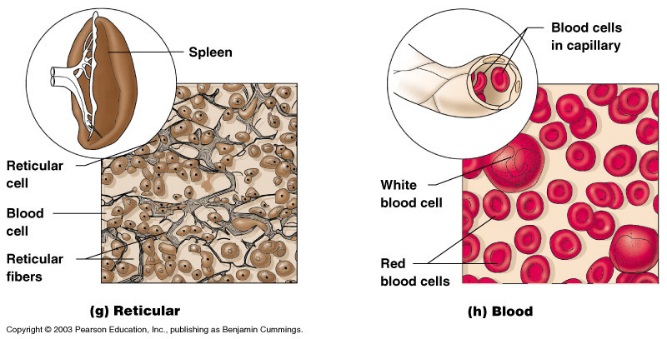
b. these cells contain large \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c. functions to \_\_\_\_\_\_\_\_\_\_\_ the body, \_\_\_\_\_\_\_\_\_\_\_\_ organs, and serves as a site of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



8. Reticular connective tissue-delicate network of interwoven fibers

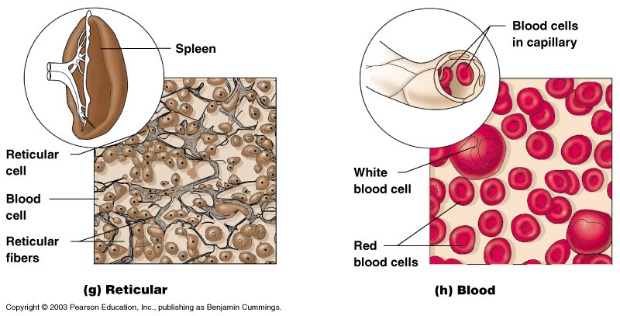
a. forms internal network of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (lymph nodes, spleen, and bone marrow)



9. Blood- blood cells surrounded by a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

a. fibers are visible during \_\_\_\_\_\_\_\_\_\_\_

b. functions as the transport vehicle for materials



VI. Muscle Tissue

A. Functions to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

B. Three types are:

1. Skeletal muscle- voluntary, \_\_\_\_\_\_\_\_\_\_

2. Smooth muscle – involuntary, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

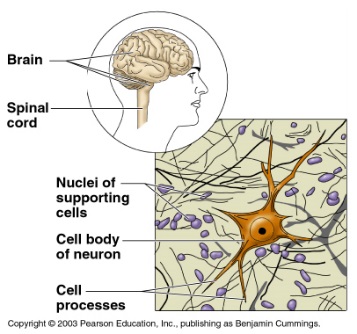
3. Cardiac muscle- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, only in heart, striated

i. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are the junctions that allow heart cells to rapidly conduct electrical impulses through the heart.

VII. Nervous Tissue-

A. Neurons and nerve support cells

B. Functions to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to other areas of body



C. Located in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ such as the brain, spinal cord and nerves

VIII. Tissue Repair (Wound Healing)

A. Two types of tissue repair:

1. Tissue regeneration is the\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by the same kind of cells

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ occurs when repair by dense fibrous connective tissue called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ forms. Fibrosis occurs in cardiac and nervous tissues of the body.

B. The type of tissue repair depends on the\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

C. Steps in Tissue repair

1. Capillaries become very \_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and other substances seep into the injured area.

3. A clot is constructed to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (when the clot dries and hardens this forms the scab)

4. Formation of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (delicate tissue that is made of new capillaries that grow into the damaged area)

a. this tissue also contains \_\_\_\_\_\_\_\_\_\_\_\_\_\_ that synthesize \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that bride the gap

5.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; this covers an underlying layer of fibrosis (the scar)

D. The regeneration of tissue

1. Tissues that regenerate easily: \_\_\_\_\_\_\_\_\_\_\_\_\_, fibrous connective, and bone

2. Tissues that regenerate poorly: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Tissues that are replaced largely with\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: cardiac and nervous tissue within the brain and spinal cord. Scar tissue lacks the normal flexibility of tissues which hinders the functioning.

E. As we age there is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of most tissues. The epithelia thin, the amount of collagen in the body declines which makes tissue repair less efficient, and nervous tissues begins to atrophy.