

D. _____ Tissue

1. **Definition:** one of the basic tissue types that provides a _____ for the body that _____ the relative positions of the other tissue types; includes, blood, bone, cartilage, and loose and fibrous connective tissue

2. **Functions:**
- a. _____
 - 1) minerals & fibers produced establish structural framework
 - 2) protect organs
 - 3) surround and interconnect
 - b. _____ of materials by fluid C.T.
 - c. storage of _____
 - d. _____ of the body

3. **Components**

- a. _____
- b. _____ form matrix: the extracellular fibers
- c. _____ & ground substance of a connective tissue

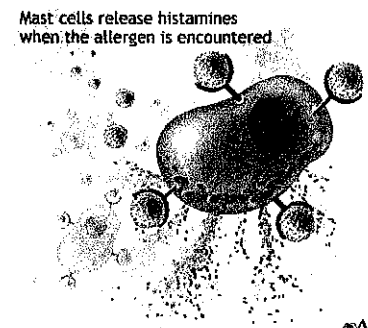
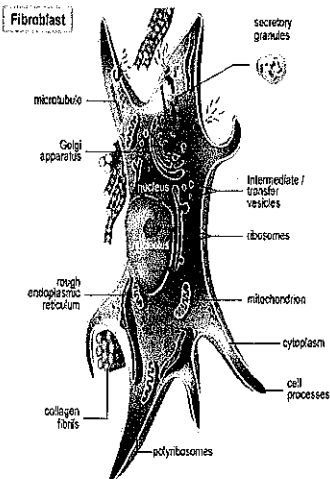
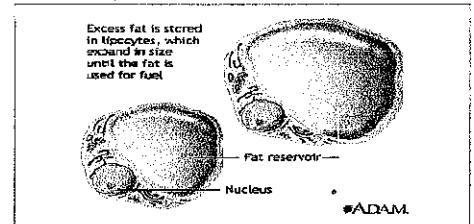
4. **Classification:** based on physical properties of matrix

- a. **C.T.** _____
 - 1) many types of cells and fibers w/i a matrix containing syrupy ground substance
 - 2) examples: fatty tissue, tendons and ligaments, and underlying skin
- b. _____ C.T.
 - 1) cells suspended in watery matrix
 - 2) examples: blood and lymph
- c. _____ C.T.
 - 1) matrix dense ground substance, closely packed fibers, less diverse cell population
 - 2) examples: cartilage and bone

5. **Component Characteristics [Figure 4-8 p 105]**

a. **Tissue Cells**

- 1) _____
 - a) most common
 - b) produce fibers for secreting proteins into surrounding matrix
- 2) **Fibrocytes:** differentiate types
- 3) _____
 - a) phagocytize damaged cells or pathogens
 - b) release chemicals that mobilize the immune system
 - c) fixed and free
- 4) _____ cells (adipocytes)
- 5) _____ cells
 - a) large and widely distributed near blood vessels
 - b) release heparin (prevents blood from clotting)
 - c) release histamine (promotes reactions associated with inflammation and allergies)
 - d) initiates inflammatory response



b. Tissue Fibers

- 1) _____ "white fibers"
 - a) thick, threads made from molecules of collagen protein
 - b) grouped in long parallel bundles
 - c) flexible and only slightly elastic for binding
 - d) great tensile _____ (resist pulling force)
- 2) _____ "yellow fibers"
 - a) composed of the protein elastin
 - b) thin fibers branch to form complex networks
 - c) weaker than collagenous but _____
- 3) _____
 - a) least common
 - b) thin, collagenous fibers branching
 - c) form delicate supporting _____

c. Ground Substance: _____ spaces btw cells; surrounds, clear, colorless

6. C.T. Proper

a. _____ fibrous connective tissue [Figure 4-9a p 107]

- 1) Description
 - a) mainly fibroblast cells
 - b) located some distance apart; _____
 - c) separated by a gel-like matrix
 - d) has _____ elastin and collagenous _____
- 2) Location
 - a) binds skin to underlying organs
 - b) forms delicate, thin membranes throughout the body
 - c) fills spaces between muscles
 - d) found beneath most epithelial tissue
 - e) many blood vessels which nourish epithelium

b. _____ tissue [Figure 4-9b p 107]

- 1) Description
 - a) specialized loose, fibrous connective tissue w/ adipocytes
 - b) develops when certain cells _____ w/in cytoplasm and enlarge
- 2) Location
 - a) in spaces between muscles
 - b) around certain joints and some organs (ie. kidney, heart, eye,..)
 - c) skin of sides, buttocks, breasts
- 3) Other--overeating and lack of exercise can cause them to become larger they shrink when fasting and become more like fibroblasts
- 4) Functions
 - a) insulation
 - b) stores energy
 - c) protective padding

c. _____ fibrous connective tissue (_____)

[Figure 4-9c p 107]

- 1) Description
 - a) mostly thick collagenous fibers, closely packed
 - b) fine network of elastic fibers
 - c) few cells, most are fibroblasts

2) Location

- a) deep skin layers
- b) protective layers of eyeball
- c) component of tendons and ligaments

3) Function

- a) _____ body parts together
- b) slow or incomplete in tissue repair due to poor blood supply

7. Fluid C.T.

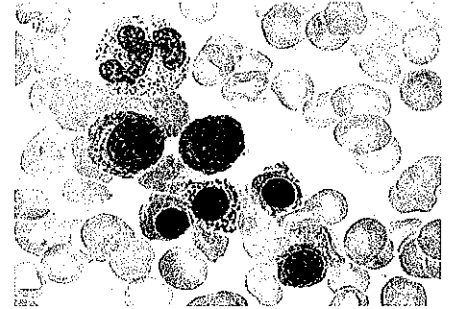
a. _____

1) Functions

- a) maintains stable internal environment
- b) transports substances

2) Composition

- a) _____
- b) _____
- c) _____
- d) _____



3) Formed by special tissues in the hollow parts of certain bones.

b. _____ : formed from interstitial fluid entering lymph vessels eventually returning to CVS

8. Supporting C.T.

a. _____

1) Definition: type of connective tissue in which cells (_____) are w/in _____ (pockets) and separated by a semisolid matrix

2) Function

- a) support; frameworks and attachments
- b) protects underlying tissues
- c) forms structural models for many developing bones

3) Description

- a) intercellular material abundant
- b) composed of collagenous fibers embedded in gel-like ground substance
- c) _____
- d) enclosed in perichondrium
- e) lacks direct blood supply → _____ !

4) Types

a) _____ cartilage [Fig. 4-10a p 109]

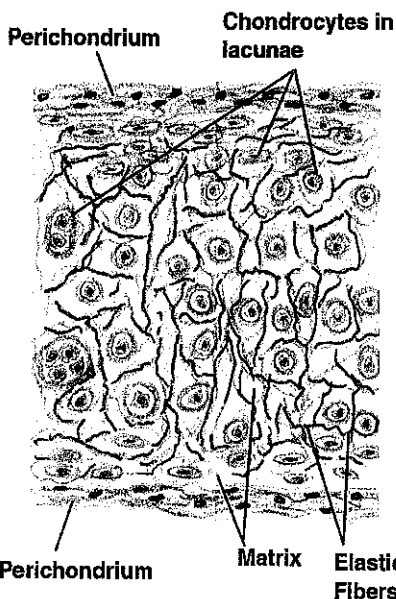
- (1) _____
- (2) has fine, loose collagenous fibers (resembles white plastic)
- (3) located on ends of bones, soft part of nose, supports rings of respiratory passages
- (4) important in the development of most bones

b) _____ cartilage [Fig. 4-10b p 109]

- (1) contains dense network of elastic fibers
- (2) _____ than hyaline
- (3) located in frames of ears, parts of larynx, and auditory tube

c) _____ cartilage [Fig. 4-10c p 109]

- (1) tough with many collagen fibers
- (2) functions as shock absorber
- (3) located between parts of backbone, in knees, in pelvic girdle



e. _____ aka: osseous [Fig. 4-11 p 110]

1) Description

- a) most rigid due to _____ deposits between cells
- b) abundant collagen matrix which reinforces minerals
- c) organized in concentric circles

2) Functions

- a) supports body structures
- b) protects vital parts
- c) attachment for muscle
- d) houses marrow (where blood cells form)
- e) stores inorganic chemicals like Ca and P

3) Organization

- a) canaliculi: microscopic passageways btw. cells permitting diffusion of nutrient and waste
- b) _____: bone cells in lacunae: small pit or cavity
- c) Bone tissue is active tissue which _____ !

