

Tissues Anatomy Overviews & Animations

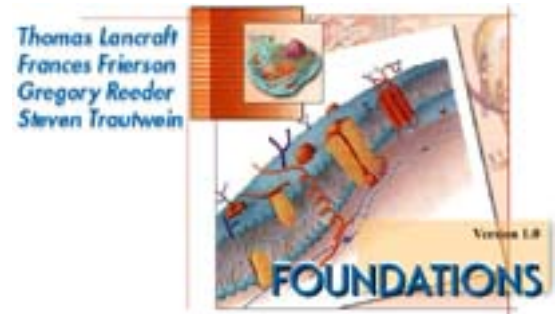
Connective Tissues

Directions:

Insert and install your Interactions: Foundations CD.

- Click the "Contents" button,
- Open the Tissue Level of Organization file,
- Click on Anatomy Overviews,
- Work through Connective Tissues.

Complete the following worksheet and add it to your notes.



Interactions Foundations CD/Contents/Tissue Level/Anatomy Overviews/Connective Tissues

- What are the functions of connective tissue?



Cell Matrix

- Describe the function of *fibroblasts*.

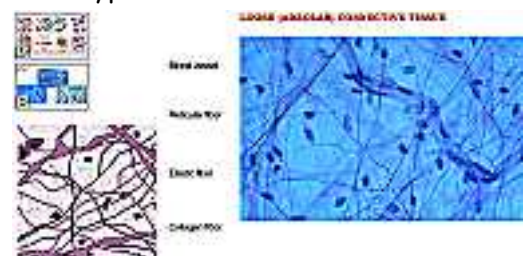


- What is *ground substance*? What is its function?

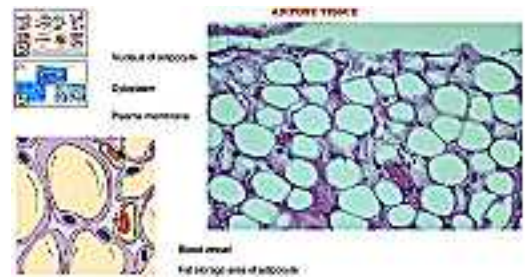
Loose Connective Tissue

- Identify each tissue type, *by sight*. You are expected to identify these tissues and will be asked to do so on your tests. Note how the fibers are "loosely" arranged between the cell types.

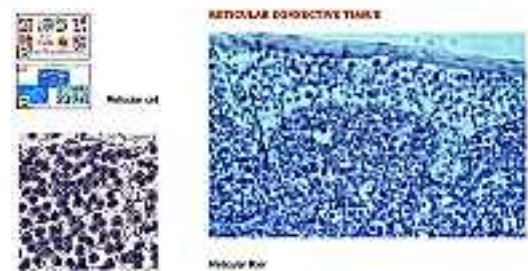
Areolar - Areolar tissue is found in the subcutaneous (under the skin) layer.



Adipose - These are our "fat cells." They are found anywhere areolar tissue is found. Adipose tissue is our stored energy reserves, insulates us from temperature extremes, and, it is an excellent protective cushion.



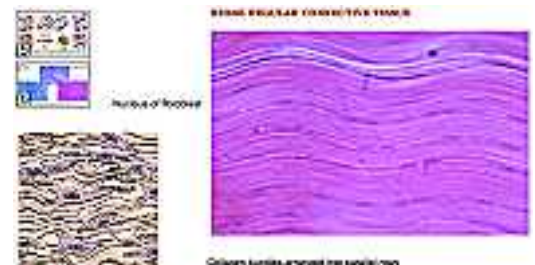
Reticular - Reticular tissue forms the supporting structure, or stroma, of many organs. This function is much like the internal beams supporting a house or building.



Dense Connective Tissue

- Identify each dense connective tissue type, again, *by sight*. Note how these tissues contain more numerous, and thicker, fibers arrayed densely among considerably fewer cells.

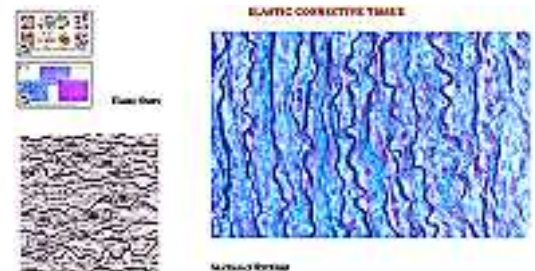
Dense Regular - Found in tendons and ligaments, this tissue can withstand tension along the axis of the fibers. Lateral tension can result in tears or strains.



Dense Irregular - Generally found in sheets underlying the epidermis (skin). This tissue withstands pulling forces from various directions.



Elastic - Found in the lungs and elastic arteries, this tissue can recoil to its original dimensions after stretching.



Cartilage

6. First, consult your text to identify the following and determine what they do:

Chondrocytes _____

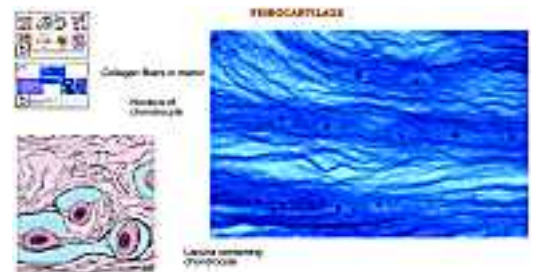
Perichondrium _____

7. Examine each type of cartilage from the CD. Once again, learn to identify these *by sight*. Cartilage *matrix* consists of a dense network of collagen and elastic fibers embedded in *chondroitin sulfate*, a rubbery component of the ground substance. Cartilage withstands more stress than either loose or dense connective tissues.

Hyaline - This is the most common cartilage in the body. It provides flexibility, support, cushioning, and reduces friction at the joints. The fine collagen fibers are not visible with ordinary staining techniques. Due to its level of flexibility, hyaline cartilage is the weakest of the cartilage types.

Fibrocartilage - Found in the inter-vertebral discs, fibrocartilage combines strength and rigidity to be the strongest of the cartilage types. Collagen fibers are clearly visible between the chondrocytes.

Elastic - Found in structures needing strength and elasticity, like the outer ear, elastic cartilage is the most flexible of the three types. Elastic fibers are visible between the chondrocytes.



Bone (Osseous) Tissue

8. Examine the following on your CD. Remember, click on the red words to progress for more information on that structure.

Compact Bone - Define or describe each of the following for compact bone:

Compact bone function _____



Osteon _____

Lamellae _____

Lacunae _____

Haversian Canal _____

Canaliculi _____

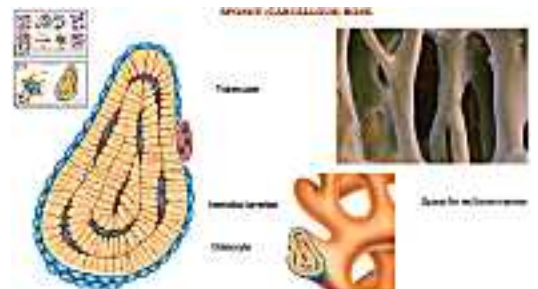
Osteocyte _____

Spongy (Cancellous) Bone - Again, define or describe each of the following:

Function _____

Trabeculae _____

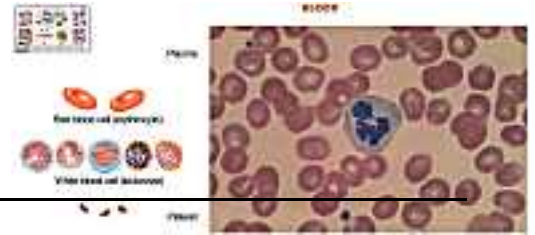
Space _____



Blood Tissue

9. It may be difficult to think of blood as a tissue because it is fluid. It is a connective tissue, however, with two basic types of cells suspended in a fluid matrix. It clearly "connects" to every part of our body, too!

Using your CD, identify each of the following and determine their function(s):



RBCs (erythrocytes) _____

WBCs (leukocytes) _____

Platelets _____
