

Chapter 40

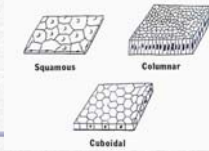
Human Tissues (*histology*) and the Interconnectedness of systems

4 types of tissue

- Epithelial
- Connective
- Muscle
- Nervous

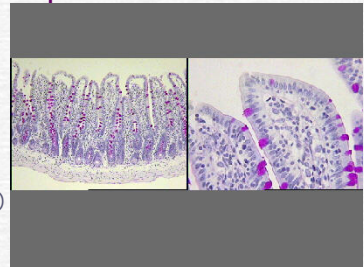
Epithelial tissues

- Are classified by:
- 1. # of layers
- 2. Shape



Type and probable location?

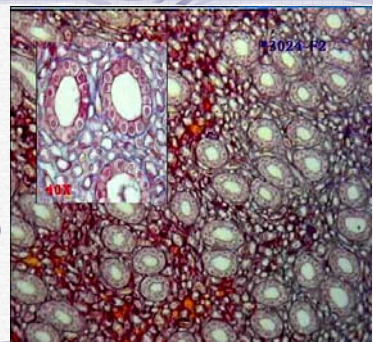
- Intestine:
- Simple columnar (active absorption & secretion of large volumes)

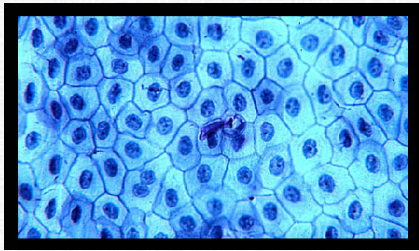


- Gall bladder



- Kidney tubules:
- Simple cuboidal (secretion)





- Esophagus:
- Stratified squamous

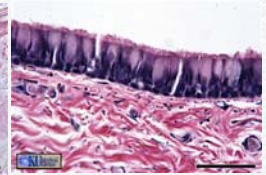
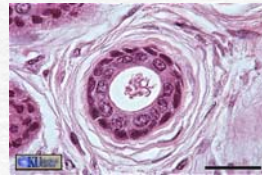


- Skin:
- Stratified squamous



- Sweat duct

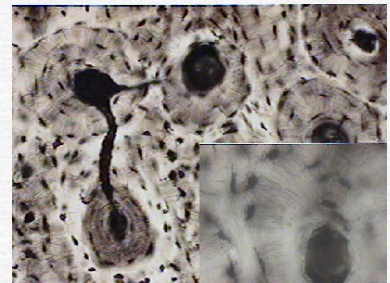
- Trachea

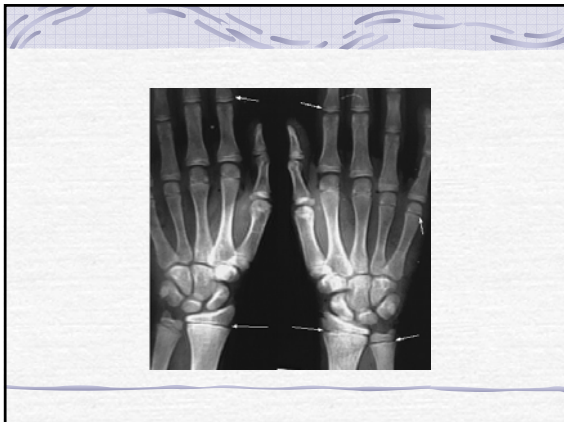
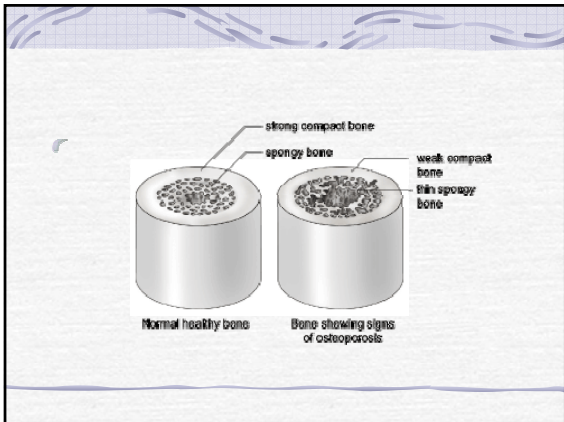
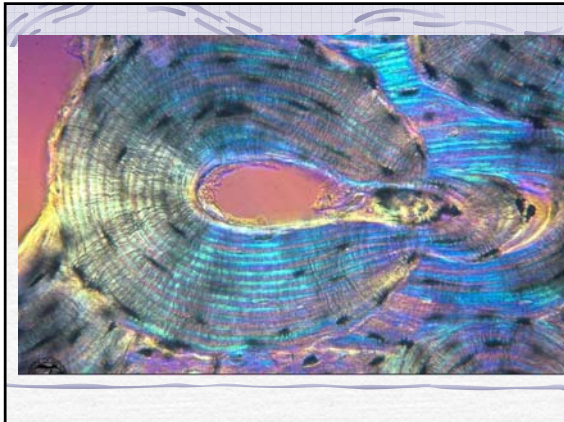
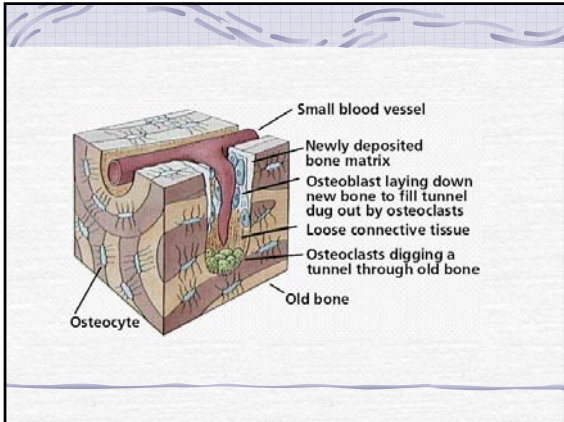


Connective tissues

- There are 6 main types listed in your book:
- They are:
 - 1. Bone
 - 2. Loose connective tissue
 - 3. Adipose (fat tissue)
 - 4. Blood
 - 5. Cartilage
 - 6. Fibrous connective tissue

- Bone





- ☞ Loose connective tissue
- ☞ Made up of 3 fiber types:
- ☞ Reticular, elastic, collagen

Loose connective tissue

Connective Tissue

Connective Tissue

Adipose

Blood = ?

Human Red Blood Cells, Platelets and T-lymphocyte
 (erythrocytes = red; platelets = yellow; T-lymphocyte = light green) (SEM x 9,900).
 This image is copyright Dennis Kunkel at www.DennisKunkel.com

Cartilage

Tendon (fibrous connective tissue)

What is the difference between tendons and ligaments?

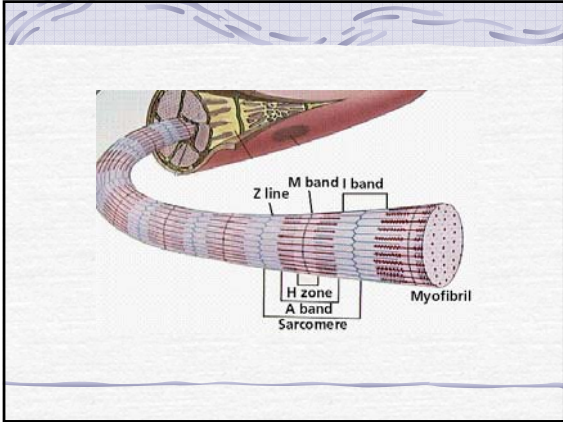
Muscles

Three main types
 They are:

1. Skeletal
2. Smooth (visceral)
3. Cardiac

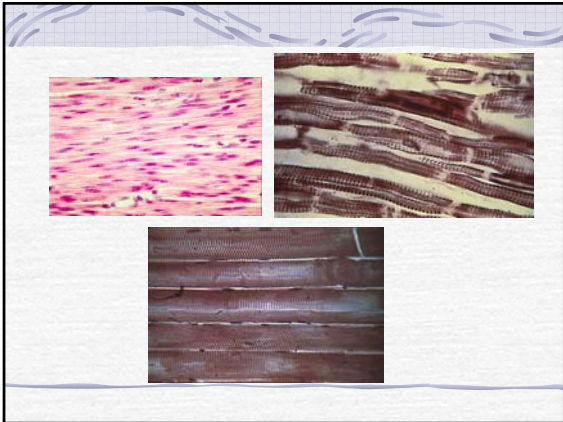
SMOOTH SKELETAL CARDIAC

What are striations?
 Where are they each located?



☛ Muscles

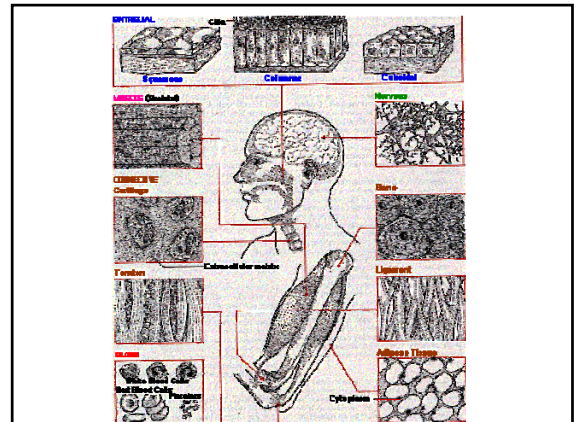
☛ What do you look for in determining the different types?



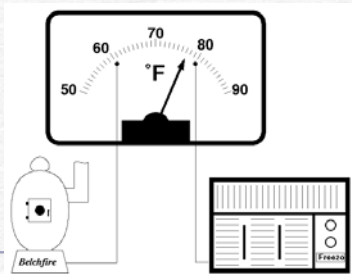
Nervous tissues

☛ What are the main units of a neuron?

☛ **Pyramidal Neurons** from the Central Nervous System (SEM x3,960). This image is copyright Dennis Kunkel at www.DennisKunkel.com



Is this negative or positive feedback?

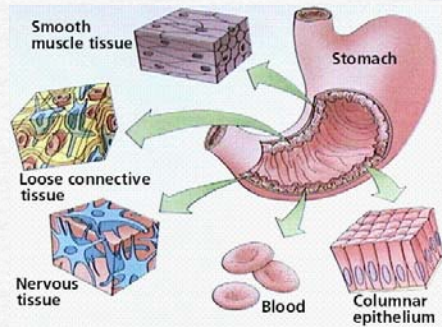
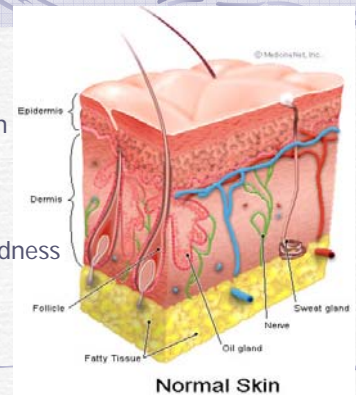


- ☞ If a cookie has 200 calories, that means _____ kilocalories.
- ☞ What is the difference between BMR and SMR?

Human Homeostasis

- | | |
|---------------------------|--|
| ☞ 1. Body temp? | ☞ 1. 37 C (98.6 F)
(looking ahead: what part of the brain controls temp?) |
| ☞ 2. Blood pH? | ☞ 2. 7.4 (is that basic or acidic?) |
| ☞ 3. Blood glucose level? | ☞ 3. 0.1% (looking ahead... what hormones help control this?) |
- ☞ These are all controlled by _____ feedback systems.
- ☞ All controlled by **NEGATIVE** Feedback systems.

- ☞ Why is skin an organ?
- ☞ How does it show the interconnectedness of different systems?



Ch. 41 Reading Focus Topics

- ☞ Know all of the figures and charts.
- ☞ Know the importance of **vitamins**: B1, folic acid, C, A, D
- ☞ Know the importance of **minerals**: Ca, P, S, K, Fe, I
- ☞ Know every organ of the digestive tract: location, function & associated enzymes/functions
- ☞ Know fig 41.13 and table 41.3!
- ☞ **COME WITH QUESTIONS and KNOWLEDGE FOR PARTICIPATION NEXT CLASS!**
- ☞ <http://www.kumc.edu/instruction/medicine/anatomy/histoweb/Index.htm> (Most of today's tissue pictures came from U of Kansas Med Center)