

HISTOLOGY. THE STUDY OF TISSUE

Tissues: a group of similar cells that form the same function

(Four main types)

1. epithelium
2. connective tissue
3. muscle
4. nervous

Four types of tissue



Connective tissue



Epithelial tissue



Muscle tissue



Nervous tissue

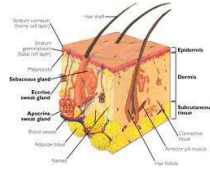
1. Epithelium

a. Functions:

- i. cover and protect
- ii. secrete and absorb

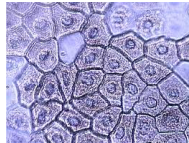
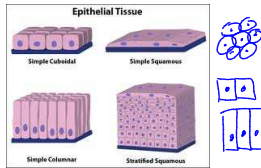
b. Where found:

- i. covers internal and external surface
- ii. glands

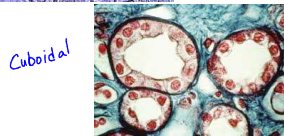


c. Shape of epithelial cells:

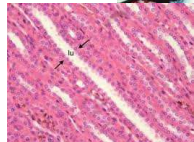
- i. squamous = flat
- ii. cuboidal = cubes
- iii. columnar = columns



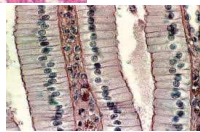
Simple Squamous



Cuboidal



Cuboidal (Kidney)



Columnar



Columnar

d. Arrangement of epithelial cells:

- i. simple: 1 layer
- ii. stratified: more than 1 layer



Shiny pink is new skin forming

2. Connective Tissue

a. Functions:

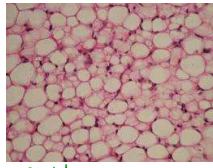
- i. Support & framework
- ii. Joins /Connects tissues
- iii. Stores energy & minerals
- iv. Fights disease/infection
- v. Helps to repair tissue
- vi. Cushions
- vii. Transports

b. Most abundant tissue type (by mass)

c. Lots of intercellular space: matrix

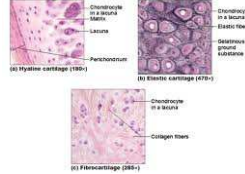
d. Types of connective tissue:

i. **Adipose** (fat)

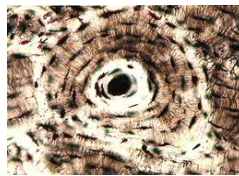


ii. **Cartilage** (hyaline, elastic, fibrous)

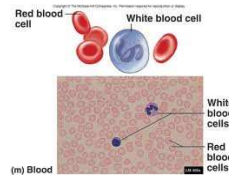
Cartilages in the Adult Body



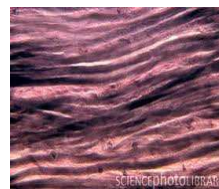
iii. **Osseous** (bone)



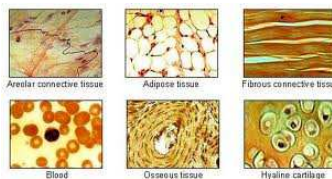
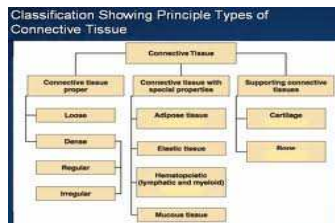
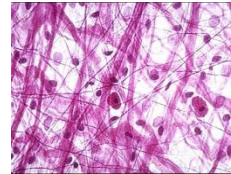
iv. **Vascular** (blood)



v. **Fibrous** (dense C.T.)



vi. **Areolar** (loose C.T.)



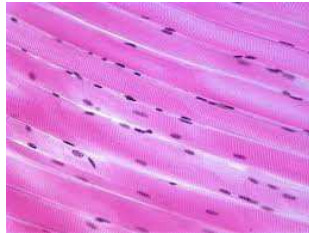
3. Muscle Tissue

a. Function: provide movement

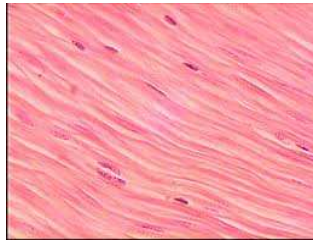
b. Specialized to: shorten/contract

c. Three types

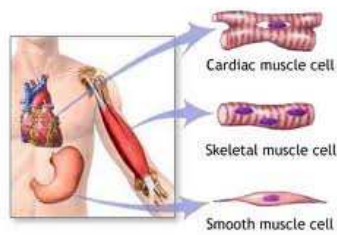
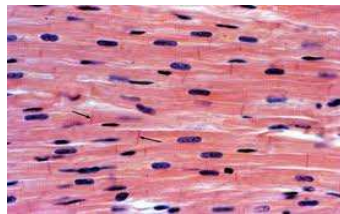
i. Skeletal = striated = voluntary



ii. Smooth = visceral = involuntary

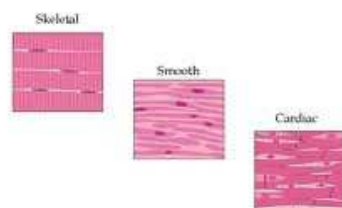


iii. Cardiac = heart



ADAM

Three Types of Human Muscle Tissue



4. Nervous Tissue

- a. Function: transmit electrochemical signals
- b. Found in brain, spinal chord,
and peripheral nerves
- c. Neuron = nerve cell
- d. Neuroglial = cells that take care *of nerve cells*

