

TISSUES

- ▶ Tissues provide functions of organs necessary to maintain life
- ▶ Four basic types of tissues
 - ▶ Epithelium
 - ▶ Connective
 - ▶ Muscular
 - ▶ Nervous tissues

EPITHELIAL TISSUE

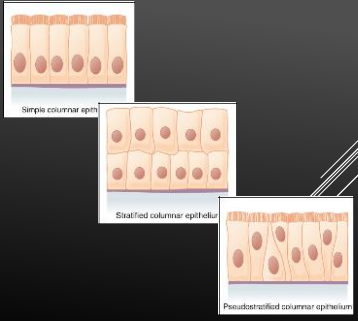
- ▶ Forms the coverings of surfaces of the body
- ▶ Serves many purposes, including protection, adsorption, excretion, secretion, filtration, and sensory reception.

EPITHELIAL TISSUE

- ▶ Key Characteristics
 - ▶ One free surface (apical) and one attached surface (basal)
 - ▶ Cells fit closely together side by side and sometimes atop each other to form sheets
 - ▶ Supported by connective
 - ▶ Avascular- typically lacks its own blood supply.
 - ▶ Can regenerate if properly nourished.

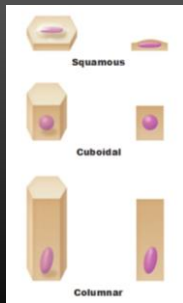
EPITHELIAL TISSUE

- ▶ Arrangements:
 - ▶ Simple
 - ▶ Stratified
 - ▶ Pseudostratified
 - ▶ Transitional



EPITHELIAL TISSUE

- ▶ Shapes:
 - ▶ Squamous
 - ▶ Cuboidal
 - ▶ Columnar



CONNECTIVE TISSUE

- ▶ Most abundant and widely distributed tissue type found in the human body.
- ▶ The main role is to protect, support, and bind together parts of the body.

CONNECTIVE TISSUE

- ▶ Key Characteristics
 - ▶ Tend to be very vascular (have a rich blood supply).
 - ▶ Made up of many types of specialized cells.
 - ▶ Contain a large amount of non-living material referred to as the matrix (composed of ground substance and fibers).

CONNECTIVE TISSUE

1. Connective tissue proper
 - a. Loose Connective Tissue
 - i. Areolar
 - ii. Adipose
 - iii. Reticular
 - b. Dense Connective Tissue
 - i. Dense regular
 - ii. Dense irregular
 - iii. Elastic
2. Cartilage
 - a. Hyaline
 - b. Elastic
 - c. Fibrocartilage
3. Bone (osseous tissue)
4. Blood

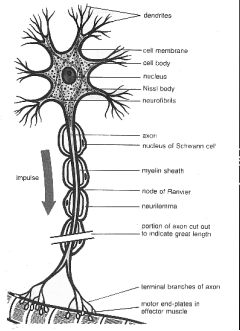
MUSCULAR TISSUE

- ▶ Ability to relax and contract to bring about movement

- ▶ 3 types
 - ▶ Smooth muscle
 - ▶ Skeletal muscle
 - ▶ Cardiac muscle

NERVOUS TISSUE

► Specialized to react to stimuli and to conduct impulses in response to stimulus.



DAY 2 – 10-6-15

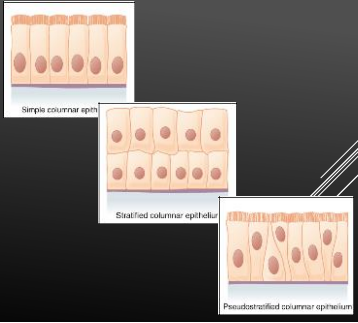
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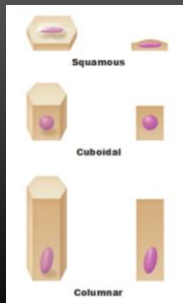
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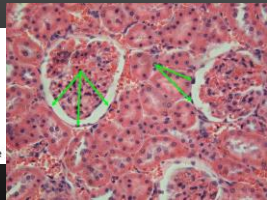
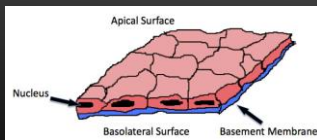


EPITHELIAL TISSUE

- ▶ Shapes:
 - ▶ Squamous
 - ▶ Cuboidal
 - ▶ Columnar

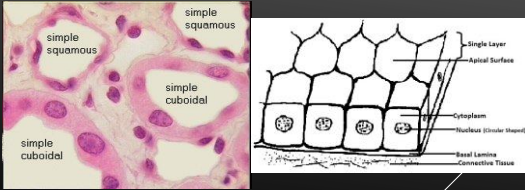


EPITHELIAL TISSUE: SIMPLE SQUAMOUS



Function: mediate filtration and diffusion
Location: Kidney (glomerulus and bowman's capsule)

EPITHELIAL TISSUE: SIMPLE CUBOIDAL

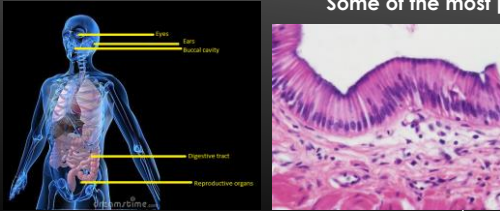


Function: protection

Location: Small ducts in organs and glands, ovary, kidney tubules

EPITHELIAL TISSUE: SIMPLE COLUMNAR

Some of the most prolific!



Function: Mainly protection, sensory input, absorbing nutrients

Location: throughout organ systems

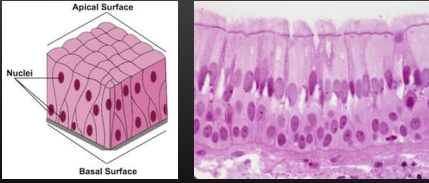
EPITHELIAL TISSUE: STRATIFIED SQUAMOUS



Function: Mainly protection

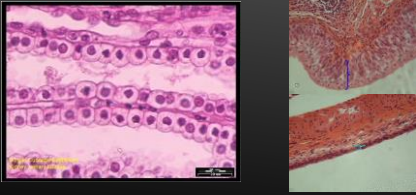
Location: Skin

EPITHELIAL TISSUE: PSEUDOSTRATIFIED COLUMNAR



Function: Secretes mucus
Location: Tracheae and upper respiratory tract

EPITHELIAL TISSUE: TRANSITIONAL EPITHELIUM



Function: Secretes mucus
Location: bladder, urethra

DAY 3 – 10-7-15

CONNECTIVE TISSUE

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CONNECTIVE TISSUE

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 - a. Loose Connective Tissue
 - i. Areolar
 - ii. Adipose
 - b. Dense Connective Tissue
 - i. Dense
2. Cartilage
 - a. Elastic
3. Bone (osseous tissue)
4. Blood

CONNECTIVE TISSUE

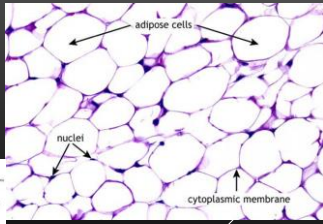
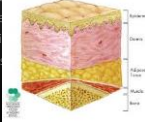
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Function: Filler – binds skin to muscle
Location: many locations!

CONNECTIVE TISSUE

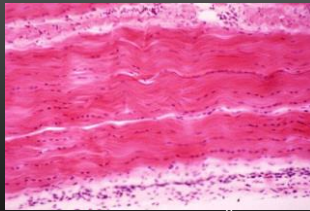
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Function: Body fat → energy
Location: Adipose depots

CONNECTIVE TISSUE

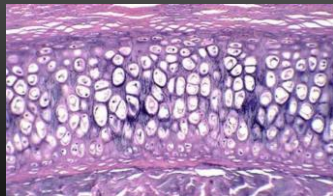
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Function: resist pulling forces
Location: Tendons

CONNECTIVE TISSUE

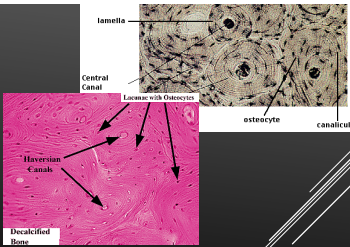
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Function: Support and strength
Location: lobe of the ear, larynx

CONNECTIVE TISSUE

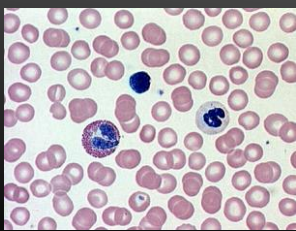
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Function: A ton!! Support, movement, protection, calcium storage, hemopoiesis
Location: Bone

CONNECTIVE TISSUE

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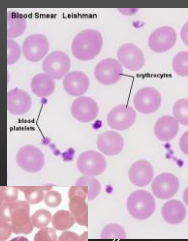



CONNECTIVE TISSUE

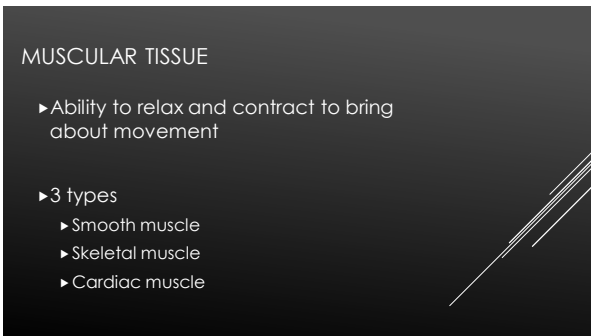
RBC (erythrocytes)
Function: Most important – transporting oxygen
Location: Blood vessels

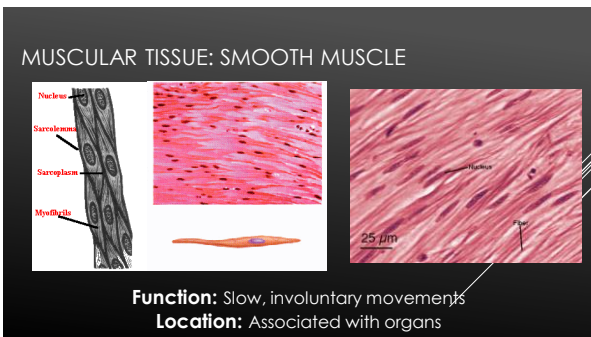
WBC (leukocytes)
Function: Immune system support
Location: Blood vessels, lymphocytes

Platelets (thrombocytes)
Function: Clotting
Location: bone marrow

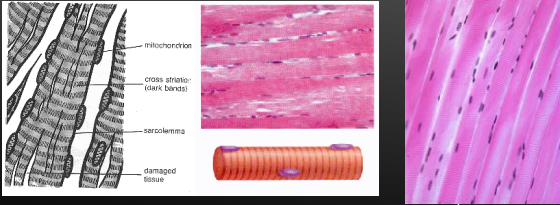







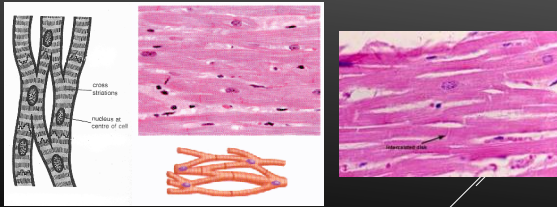


MUSCULAR TISSUE: SKELETAL MUSCLE



Function: Coordinated movement and breathing
Location: Attached to muscles

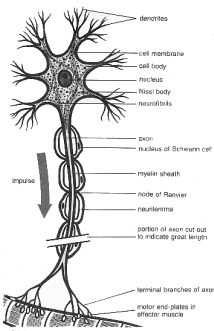
MUSCULAR TISSUE: CARDIAC MUSCLE



Function: Causes the heart beat
Location: Heart

NERVOUS TISSUE

► Specialized to react to stimuli and to conduct impulses in response to stimulus.



NERVOUS TISSUE

