Chapter 4 - Tissues

Epithelial

Covers surfaces of the body or forms glands

Connective

Joins cells and other tissue, forms a supporting framework, and transports substances

Muscle

Contracts to produce motion.

Nervous

Transmits electrochemical impulses, coordinates and controls many body activities, reacts or responds to stimuli.

Types of Epithelium:

Simple epithelium- one layer of cells Squamous- flattened, thin: diffusion, protection, filtration: lungs, parts of circulatory system.

Simple Squamous Epithelium









Cuboidal- cube shaped, secretion, absorption:glands, ducts, kidneys



mple Cuboidal Epithelia dney, winary tubules





Columnar- tall, narrow, secretion, absorption: intestines, urterus

Nonciliated simple — columnar epithelium









Stratified epithelium- more than 1 layer Squamous-flattened:skin, mouth, throat Transitional- changes shape: urinary bladder



Flattened squamous surface cell at apical surface

Basement membrane

Connective tissue



Apical surface

Basement membrane

Connective tissue



Flattened squamous surface cell

Stratified squamous epithelium

Connective tissue

Pseudostratified- not a real stratified, a special type of simple, secretion and movement of mucus: nasal cavity, sinuses





Connective Tissue Has three basic elements: 1) cells 2)ground substance 3) fibers. The ground substance(the material between the cells) and the fibers make up the matrix.

The matrix may be fluid, calcified, or gelatinous. The fibers may be made of collagen, a protein that is tough and flexible or elastic fibers, which can be stretched without breaking. Types of Connective Tissue Dense Connective Tissue Numerous thick fibers: tendons and ligaments.



Loose Connective Tissue Fewer loosely arranged fibers Adipose- Very few fibers, fat storage Areolar-Connects the skin to underlying tissues and organs







Cartilage

Cartilage cells are chondrocytes.A dense network of collagen and elastic fibers. Jelly-like ground substance.No nerves and blood vessels.





Osteocytes: Bone cells.Some collagen and elastic fibers, ground substance calcified.





Blood

Blood cells: erythrocytes (RBC), leucocytes(WBC), platelets. Has a liquid matrix(plasma). Transport system that connects various body parts.



Muscle Tissue

Cells specialized for contraction to produce movement. 1)skeletal muscle-attached to bone 2) smooth muscle-internal organs 3) cardiac muscle-heart







Nervous Tissue

Neurons are cells that transmit electrochemical impulses. **Neuroglia** are cells that support, nourish, protect, and insulate neurons.

