TISSUES
Cellular Junctions
through connexons ions and small molecules can diffuse from one cell to another. Allow one cell to communicate with another. Also allow impulses to spread through muscle and nerve tissue.
Tight Junctions consist of weblike strands of proteins on the outer surfaces of adjacent membranes. Function to retard the passage of materials between organ and prevent organ content from leaking.

Found in stomach, intestines and bladder.
Desmosomes contain plaque and transmembrane cadherins. Function to attach cells to one another. Allows for cell stability by forming spot-weld like junctions. Commonly found in epidermis and cardiac muscle cells. These prevent cells from separating.
rsemble desmosomes but DO NOT link adjacent cells. Transmembrane protein is integrin which attaches internally to keratin and attached externally to laminin.

Do not anchor cells to cells but anchors cells to basement membrane
ADHERENS JUNCTIONS

contain plaque and a layer of proteins on the inside of the PM that attaches both membrane proteins to cell microfilaments. The membrane proteins called cadherins join the cells.

In epithelial cells the adherens junctions form extensive zones called adhesion belts.
SURFACES
SHAPE AND LAYERS

- Simple
- Stratified
- Squamous
- Cuboidal
- Columnar
EPITHELIAL TISSUE
Found: lining of heart, vessels, alveoli, eardrum, serous membranes

Functions: filtration, diffusion, osmosis and secretion
SIMPLE CUBOIDAL

Found: ovary, lens of eye, kidney tubules, duct of glands

Functions: secretion & absorption
SIMPLE COLUMNAR

Found: lining of GI tract, gallbladder and glands

Functions: secretion and absorption
Stratified Squamous

Found: skin, all wet surfaces, tongue

Functions: protection (may be keratinized)
Stratified Cuboidal

Found: adult sweat glands, male urethra and esophageal glands

Functions: protection with some secretion and absorption
Stratified Columnar

Found: urethra, glandular ducts, conjunctiva of eye

Functions: protection and secretion
Goblet Cell Epithelium

Found: digestive tract

Functions: secretion
**Ciliated Epithelium**

**Found:** upper respiratory tract, uterine tubes, uterus, paranasal sinuses, ventricles of the brain

**Functions:** move muous and other substances by cilia
Ciliated Epithelium
Pseudostratified Ciliated Columnar Epithelium

Found: trachea, epididymis and male urethra

Functions: movement of materials via cilia
Transitional Epithelium - Bladder

Found: bladder

Functions: allows distention
Transitional Epithelium - Uterus

Found: uterus

Functions: permits distention
CONNECTIVE TISSUE
Mesenchyme Connective Tissue

Found: under skin, embryonic developing bones and along blood vessels

Functions: forms all other types of connective tissues
Mucous Connective Tissue

Found: umbilical cord of fetus

Functions: support
Areolar Connective Tissue

Found: subcutaneous skin layer, dermal papillary region, around blood vessels, nerves and body organs

Functions: strength, elasticity & support
Adipose

Found: subcutaneous tissues, around heart and kidneys, yellow bone marrow, padding around joints, eyesockets

Functions: reduces heat loss, shock absorption, energy reserves, protection
Adipose
Reticular Connective Tissue

Found: stroma of liver and spleen, lymph nodes, red bone marrow

Functions: forms stroma of organs, binds smooth muscle cells together and removes worn out blood cells
Dense Regular Connective Tissue

**Found:** forms tendons and most ligaments and aponeuroses

**Functions:** strong attachments between adjacent structures
Dense Irregular Connective Tissue

Found: fascia over muscles, deeper layer of dermis, periosterum of bone, joint capsules, pericardium of heart, heart valves

Functions: strength
Elastic Connective Tissue

Found: lung tissue, elastic arteries, trachea, bronchial tubes, vocal cords, suspensory ligament of penis and vertebral ligaments

Functions: allows stretching of various organs
Hyaline Cartilage

Found: end of long bones, anterior end of ribs, nose, larynx, trachea, bronchi, fetal skeleton

Functions: provides smooth surface for movement at joints, flexibility and support
Elastic Cartilage

Found: epiglottis, external ear and eustachian tubes

Functions: support and maintains shape
Fibrocartilage

Found: pubic symphysis, intervertebral sics, menisci

Functions: support and fusion
Compact Bone

Found: in both compact and cancellous bone

Functions: support, protection, storage, houses blood forming tissue, serves as lever for muscles
LIQUID CONNECTIVE TISSUE
Blood

Found: within all vessels and chambers of the heart

Functions: oxygen and carbon dioxide transport, clotting, immunity, allergic reactions