Department of Dentistry

Second Class

General Histology

Lec: 1

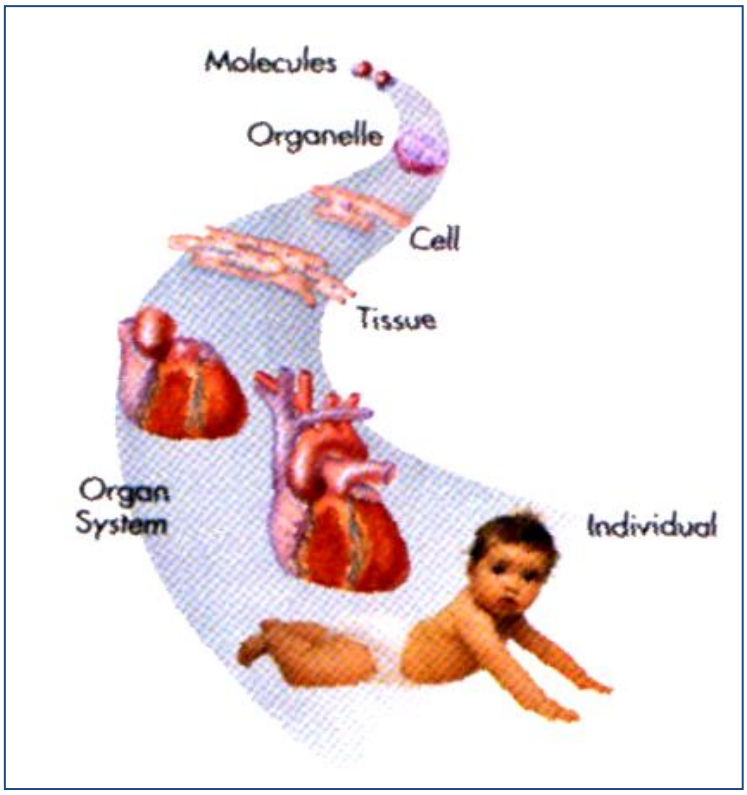
Dr.Lec. Fatima

Epithelial and Connective Tissues

Histology: is the science that studies microscopic structure and function of the human organism, the organization of the tissues and organs.

The cell is:

- The smallest structural and function unit
- The elementary level of organization of the multicellular organism.
- A self-regulating, self regenerating and self governing biological system
- Cell possesses all features of the whole organism, such as metabolism, growth, movement and others.



Tissues: groups of cells closely associated that have a similar structure and perform a related function.

Four type of tissue

Epithelial = covering

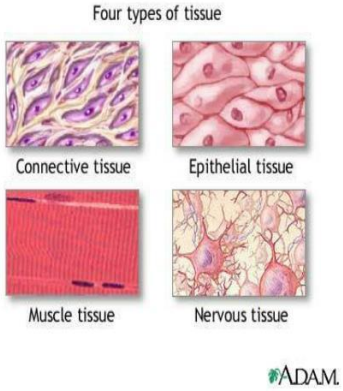
Connective= support

Muscle=movement

Nervous= control functions and activities

Most organs contain all 4 type

4 Types of Tissue



- Connective: Connects all parts of body
- Epithelial: Surfaces of body inside and out
- Muscle: Makes parts of the body move
- Nervous: Controls messages between brain & parts of body

Epithelial tissues

- Sheets of cell
- Specialized contact cell junctions
- Basal lamina: protein scaffolding secreted by epithelial cells
- Basement membrane: reticular fibers (crossed collagen network) that supports epithelium really associated connective tissue

Features of apical surface of epithelium

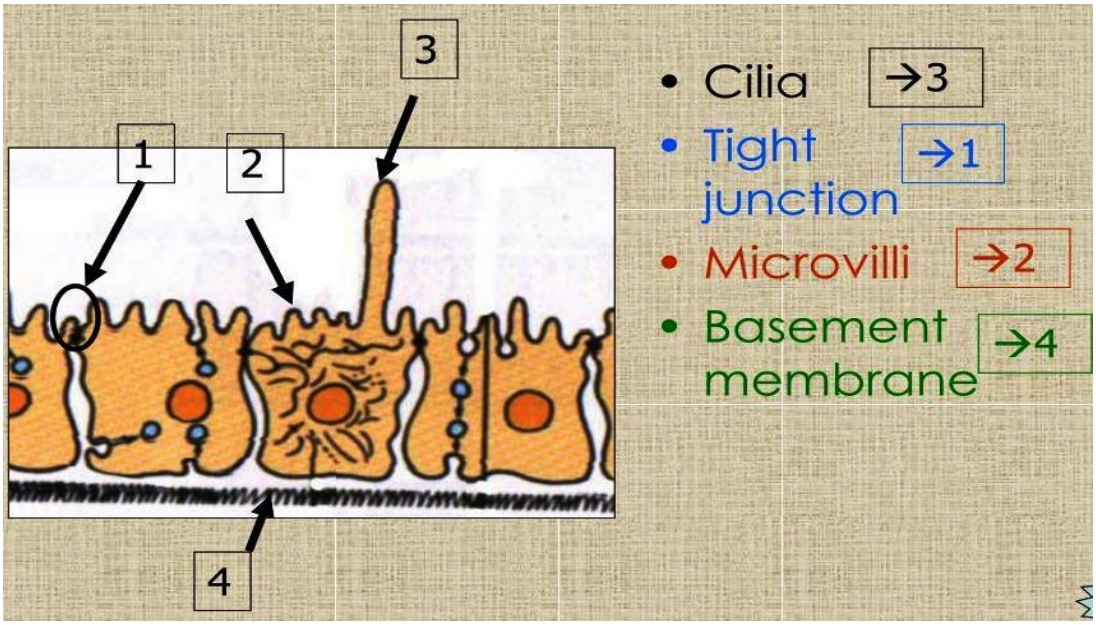
- Microvilli: (ex) in small intestine
  - Finger-like extensions of the plasma membrane of apical epithelial cell
  - Increase surface area for absorption
- Cilia: (ex) respiratory tubes
  - Whip-like, motile extensions
  - Moves mucus, etc. over epithelial surface 1-way
- Flagella: (ex) spermatoza
  - Extra long cilia
  - Moves cell

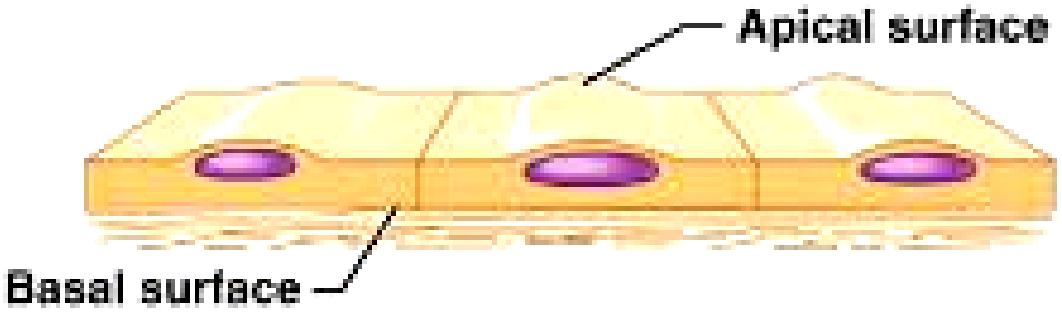
Feature of lateral surface of epithelium

- Cells are connected to neighboring cell via Protein-link cells together, interdigitate
- Contour of cell-wavy contour fits together
- Cell junction

Features of basal surface of epithelium

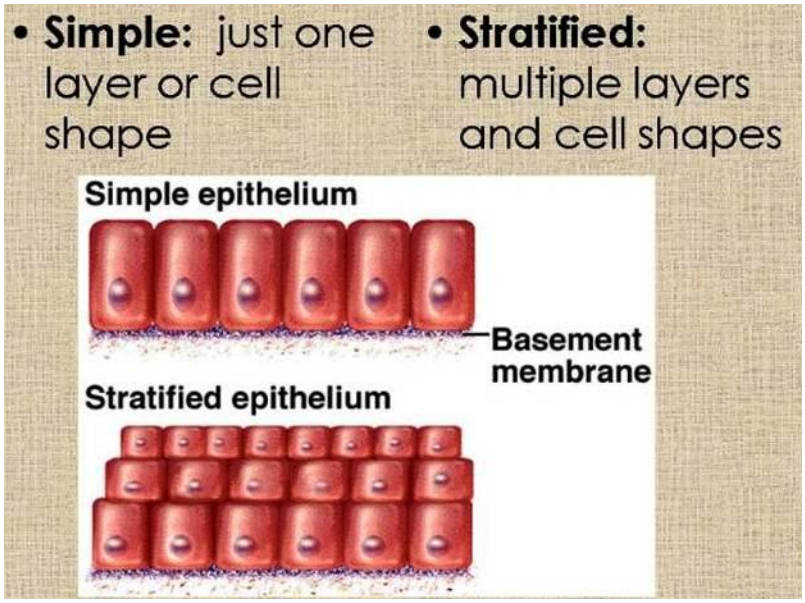
- Basal lamina: supportive sheet between epithelium and underlying connective tissue
- Selective filter
- Basement membrane= basal lamina plus underlying reticular fiber layer
- Attaches epithelium to connective tissue below



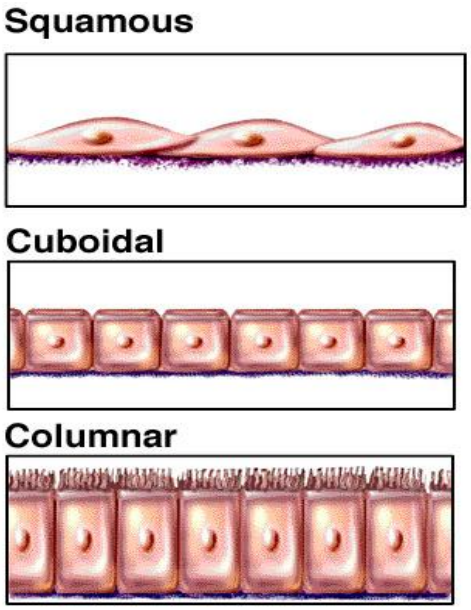


Classification of epithelial tissue

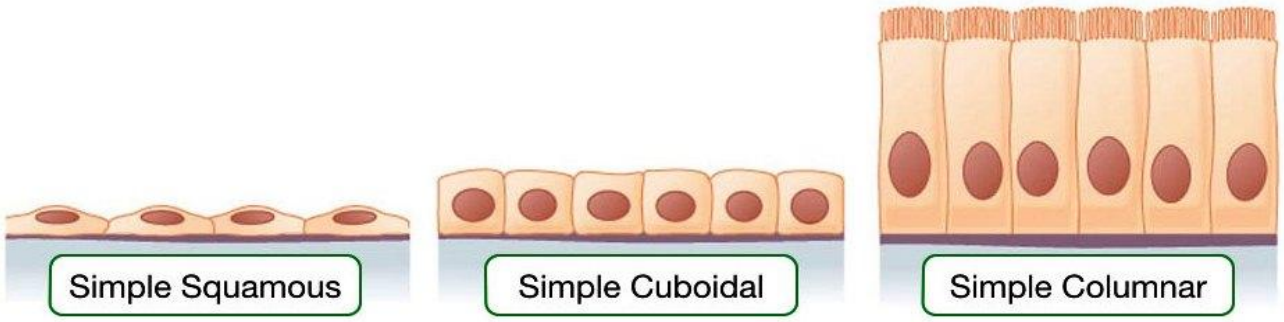
Cell layer of epithelia



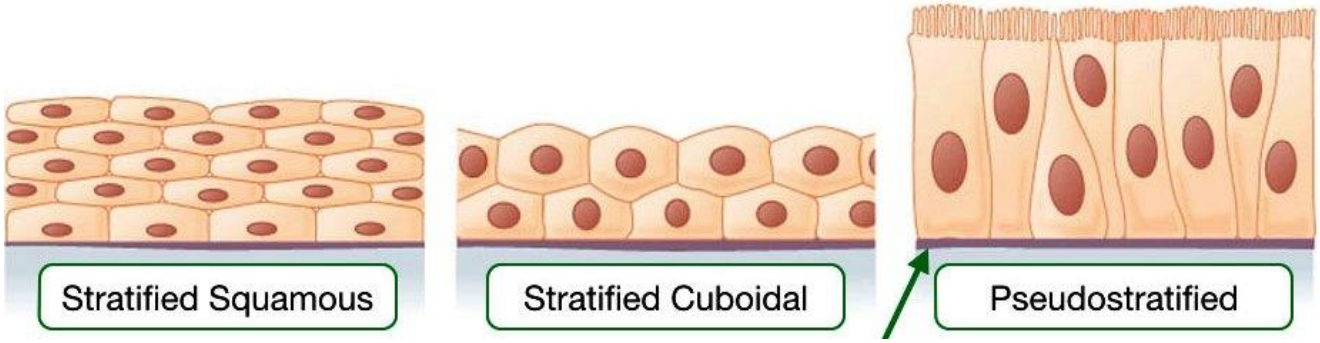
Cell Shape of epithelia



Simple of epithelia

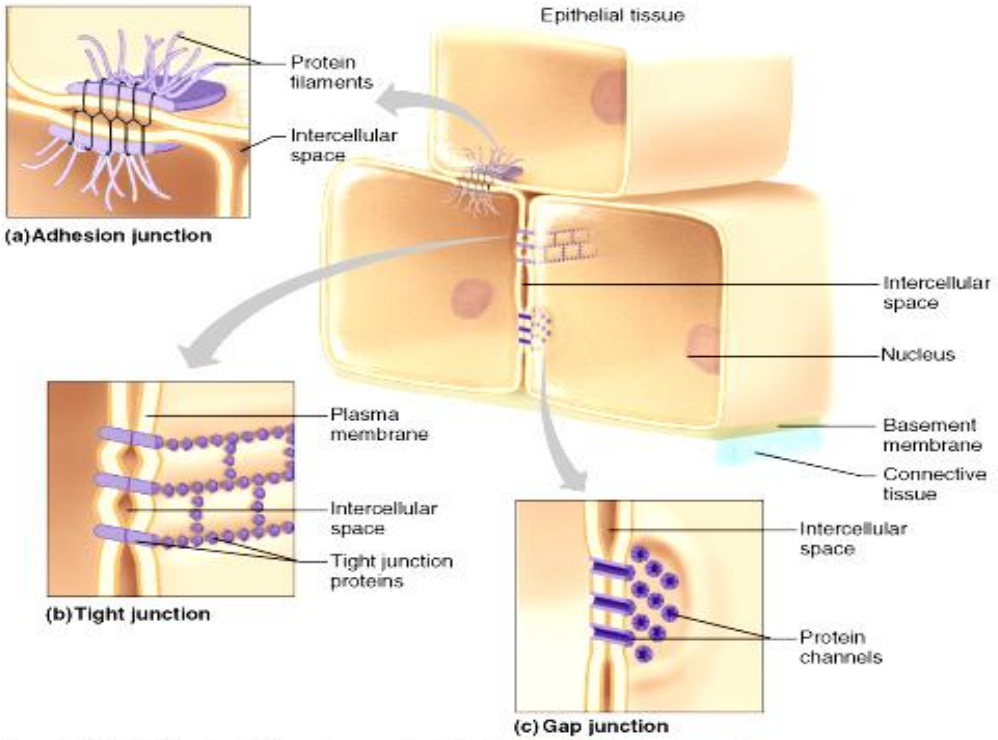


Stratified of epithelia



Connections between epithelial cells

- Adhesion junction: binding spots between cells with proteins filament
- Tight junctions: impermeable
- Gap junctions: tubes that let small molecules pass between cells



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