



King Saud University
College of Medicine
Foundation Block



Histology Lecture (2)

Epithelial Tissue

Histology Team 432

Histology Practical



General characteristics of epithelial tissue:

- Cells are tightly joined with little intercellular space
- Rest on basement membrane
- Avascular
- High power of rejuvenation
- It receives nutrition from the connective tissue under the basement membrane

Identification:

We can identify the type of cells (squamous, cuboidal, columnar) by the:

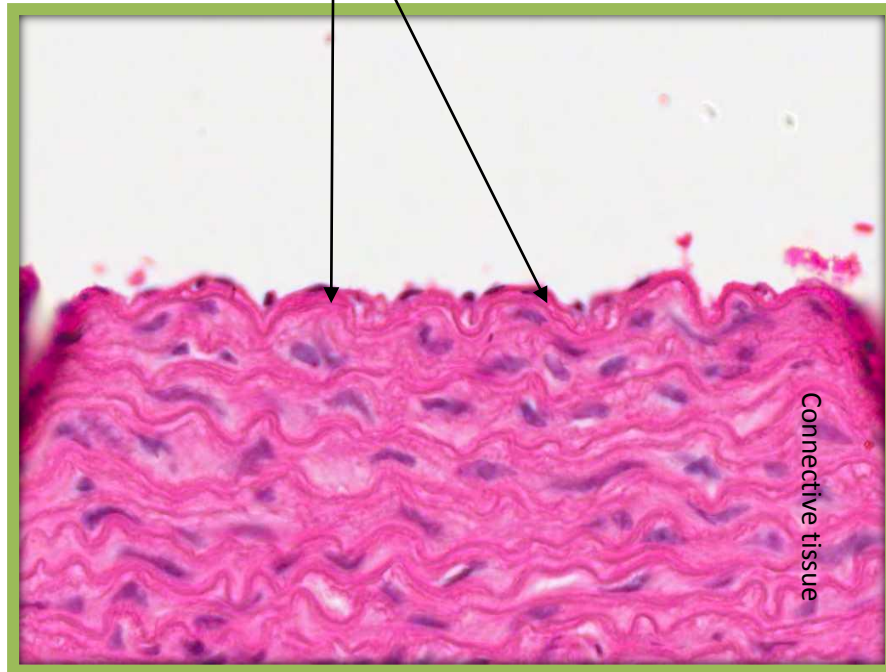
- Shape of cell
- Shape of nucleus (this is easier to see and use for identification)

Types of epithelial membranes:

- Simple epithelium: one layer of cells
- Stratified epithelium: multiple layers

SIMPLE SQUAMOUS EPITHELIUM

Simple squamous epithelium (one layer of flat cells)



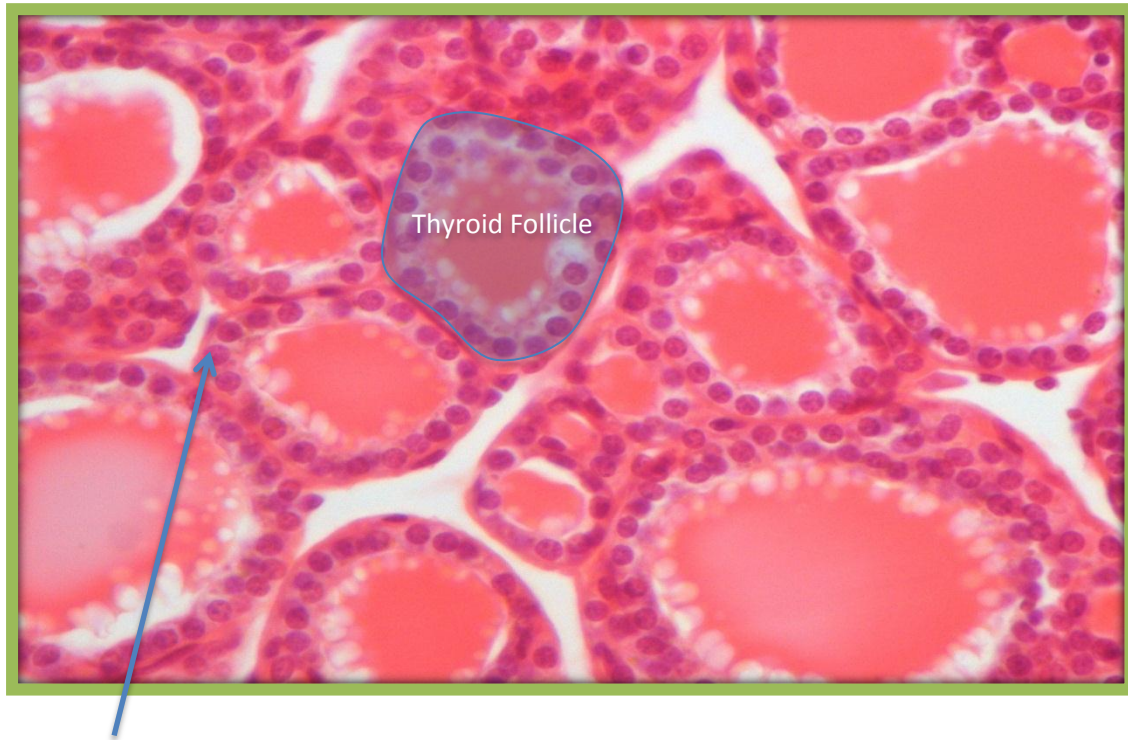
Type: simple squamous epithelium

Features: One layer of flat cells with flat nuclei.

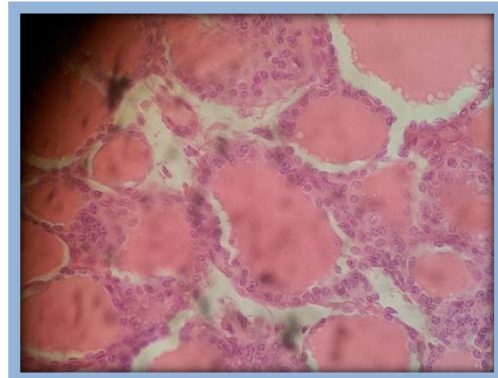
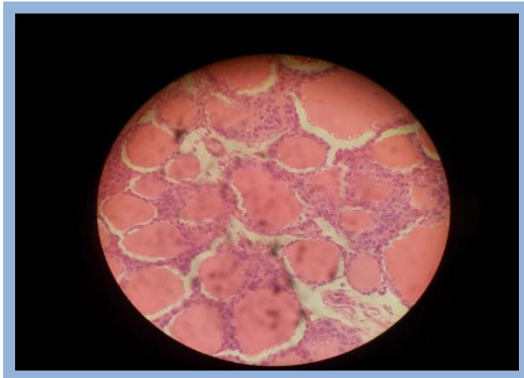
Found in:

1. Endothelium (lining the CVS).
2. Alveoli of lung

SIMPLE CUBOIDAL EPITHELIUM



Simple cuboidal epithelium of thyroid follicle

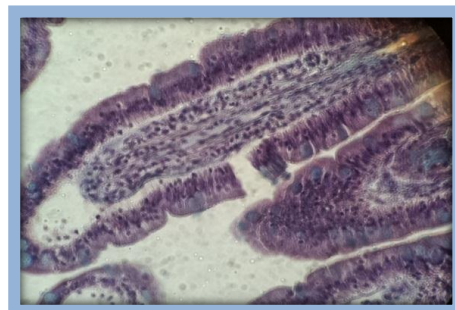
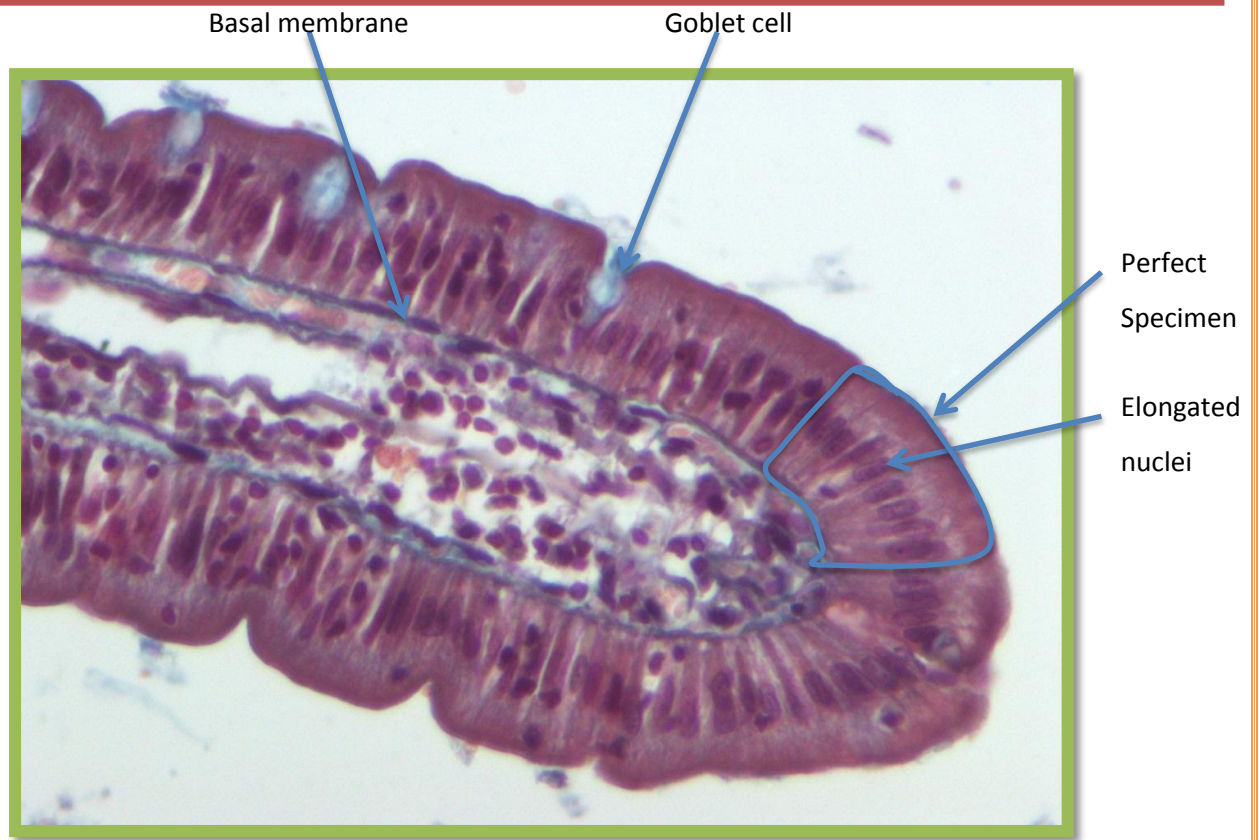


Type: simple cuboidal epithelium

Features: One layer of cuboidal cells with central rounded nuclei.

Found in: Thyroid follicles (or thyroid gland).

SIMPLE COLUMNAR EPITHELIUM WITH GOBLET CELLS

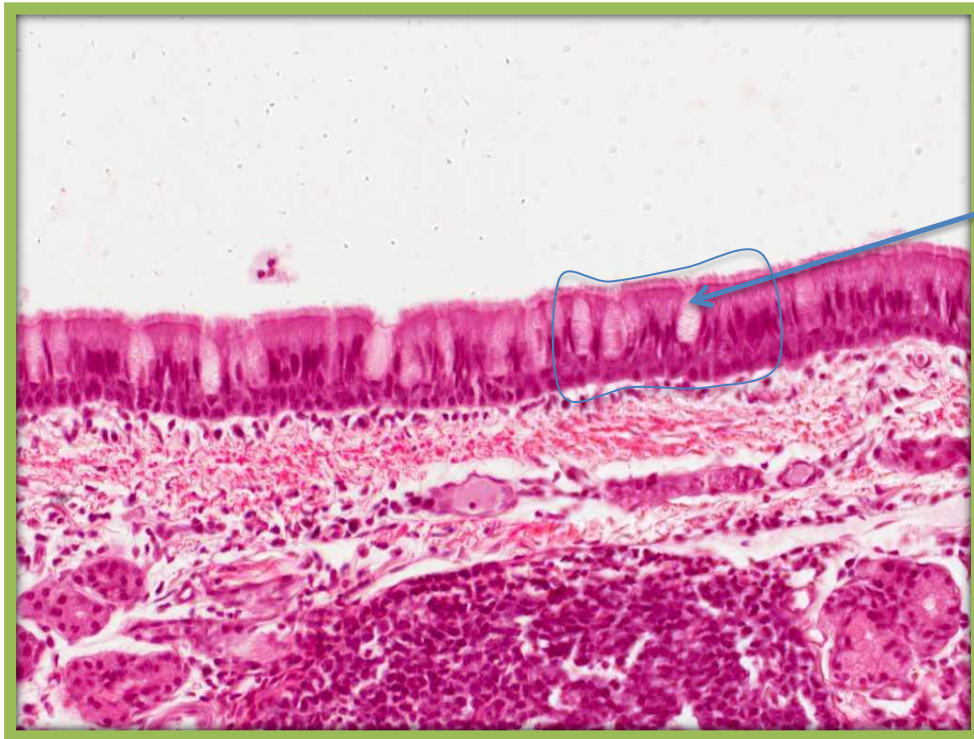


Type: simple columnar epithelium with goblet cells

Features: One layer of columnar cells with basal oval nuclei.

Found in:
Intestines

PSEUDO-STRATIFIED COLUMNAR EPITHELIUM CILATED WITH GOBLET CELLS



Goblet
cell

Type: Pseudo-Stratified Columnar epithelium ciliated with goblet cells

Features:

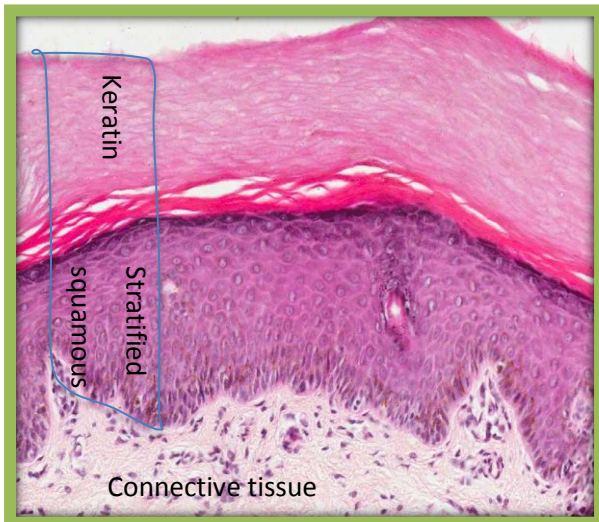
- One layer of columnar cells.
- Some cells are tall.
- Others are short and don't reach the surface.
- Both rest on the basement membrane.
- Nuclei appear at different levels.

Found in:

trachea

STRATIFIED SQUAMOUS EPITHELIUM

Keratinized stratified Squamous epithelium



Non-keratinized stratified squamous epithelium



Type: Stratified Squamous Epithelium

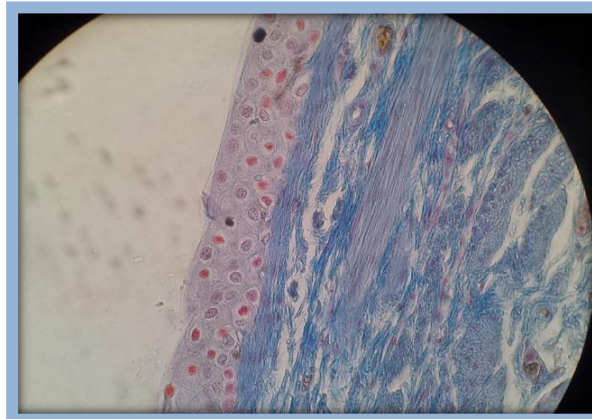
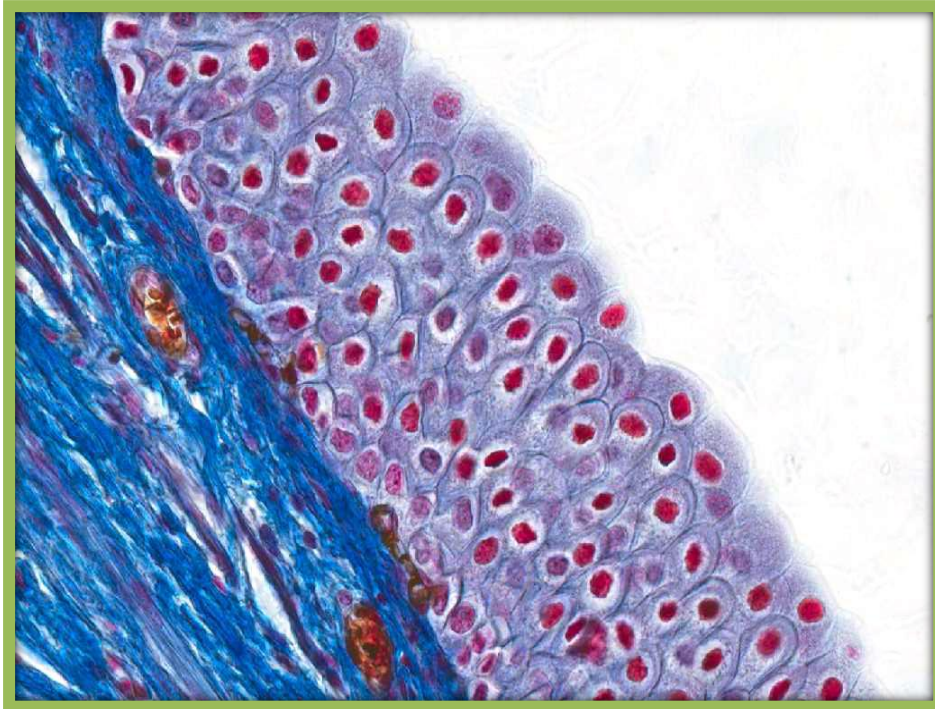
Features:

- Multiple layers of cells.
- Basal cells are columnar (**don't say simple columnar**) with basal oval nuclei.
- Intermediate cells are polygonal with central rounded nuclei.
- Superficial cells are flat with flattened nuclei.

Found in:

- **Keratinized**: with a layer of keratin on the surface.
Example of sites: skin.
- **Non-keratinized**: without a layer of keratin on the surface.
Example of sites: esophagus

TRANSITIONAL EPITHELIUM



Type: Transitional Epithelium

Features:

- Multiple layers of cells.
- Basal cells are columnar.
- Intermediate cells are polygonal.
- Surface cells large cuboidal with convex free surface.

Found in: Urinary bladder.