



Faculty of Biological Science and Technology
Zoology and Botanical Department
Practical Histology

Epithelial Tissue

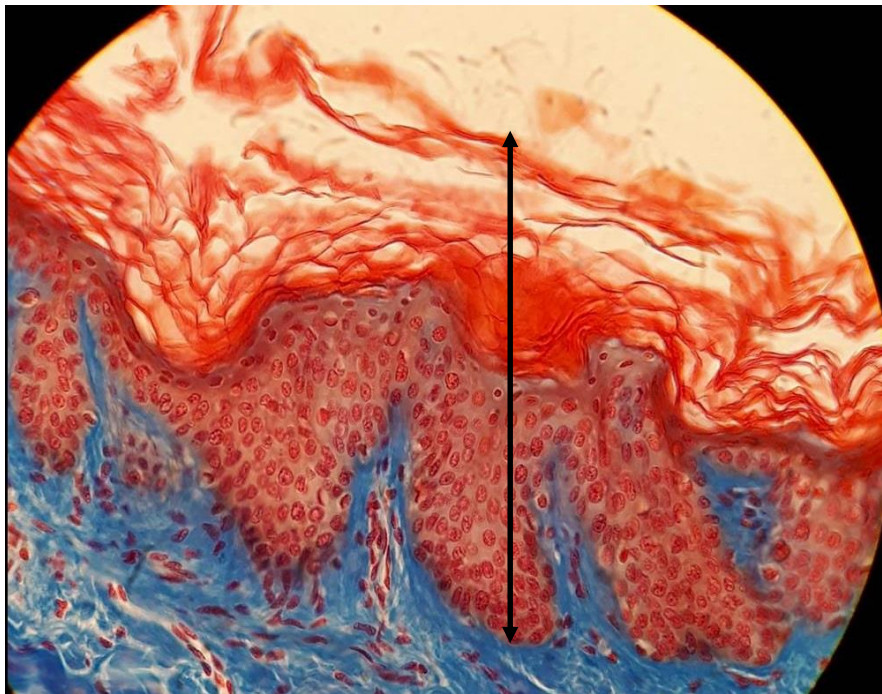
part 2

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Stratified squamous epithelium

- ▶ Stratified squamous epithelium is composed of multiple cell layers. The cells in basal layers are cuboidal, while the surface cells are flat and squamous in shape
- ▶ There are two types of stratified squamous epithelium: keratinized and non-keratinized
- ▶ The surface cells in keratinized stratified squamous epithelia are dead and devoid of nuclei. This type of epithelium is found in epidermis

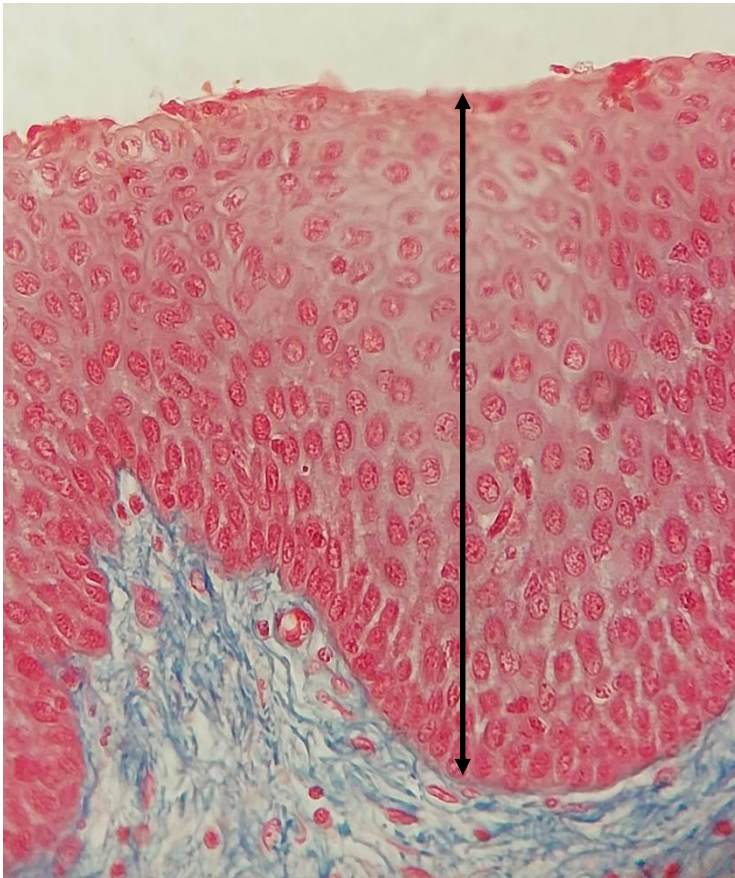


Cross section of skin. Arrow shows epidermis which made up of keratinized stratified squamous epithelium. The superficial layers are keratinized and dead. H&E, 100X. This picture is taken from histological slide in histology laboratory of Isfahan University



Stratified squamous epithelium

- ▶ The surface cells in non-keratinized stratified squamous epithelia have preserved their nuclei and devoid keratin
- ▶ This type of epithelium is found in oral cavity, esophagus, anus, vagina and cervix

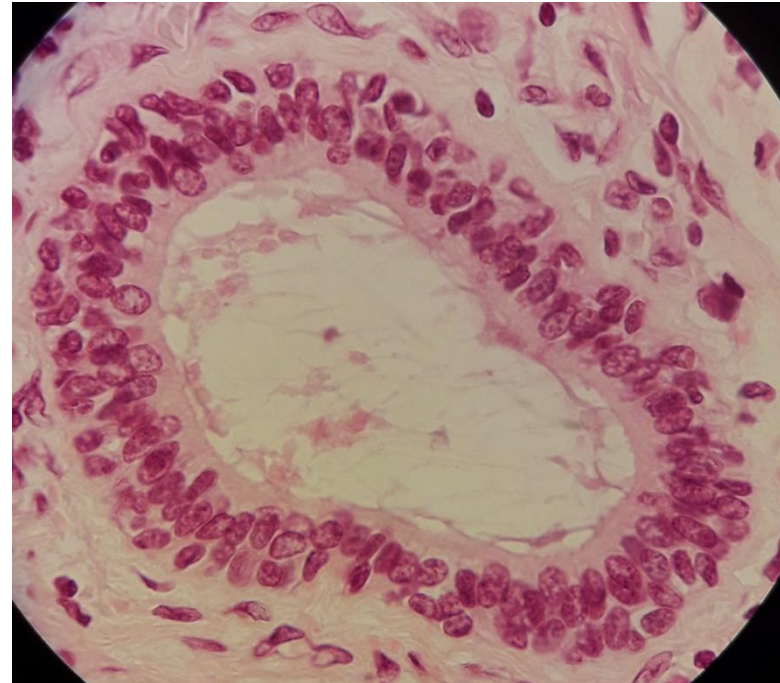


Cross section of esophagus epithelium. Arrow shows non-keratinized stratified squamous epithelium. Nuclei are present in superficial cells. H&E, 100X. This picture is taken from histological slide in histology laboratory of Isfahan University



Stratified cuboid epithelium

- ▶ Stratified cuboid epithelium is composed of multiple layered of cells that the superficial cells are shaped like cuboid
- ▶ It is found in the wall of secretory ducts of salivary and sweat glands

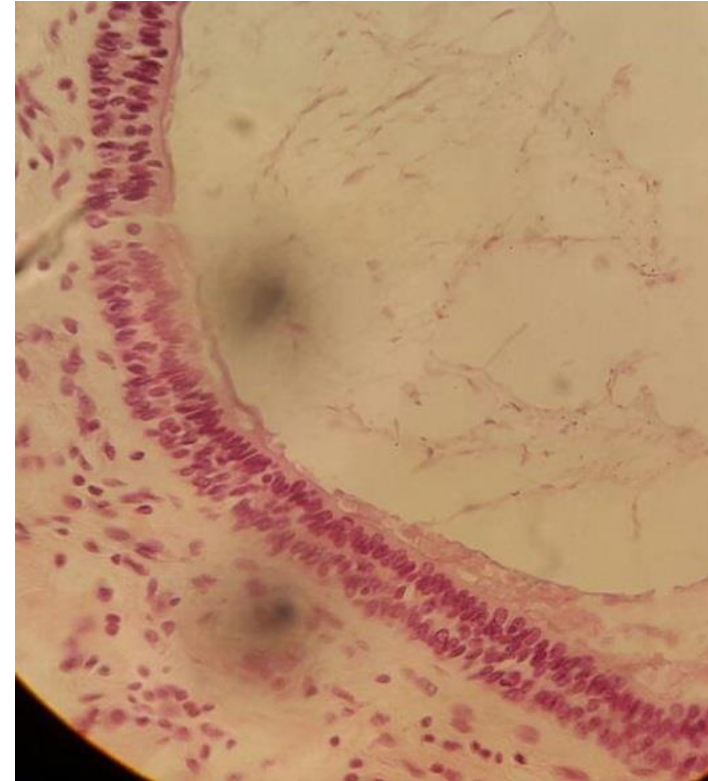


Stratified cuboid epithelium in the wall of secretory duct of salivary gland. H&E, 100X. This picture is taken from histological slide in histology laboratory of Isfahan University



Stratified Columnar epithelium

- ▶ Stratified columnar epithelium is composed of multiple layered of cells that superficial cells are shaped like column
- ▶ It is found in conjunctiva and the wall of secretory duct of salivary gland

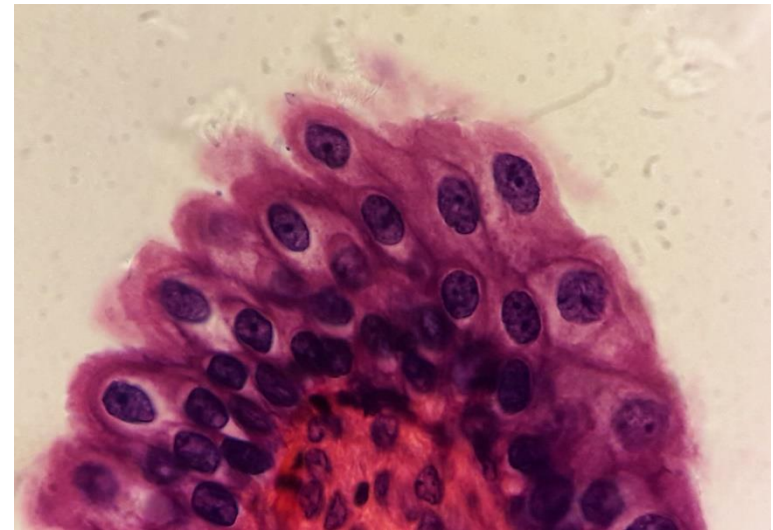


Stratified columnar epithelium in secretory duct of salivary gland. H&E, 40X. This picture is taken from histological slide in histology laboratory of Isfahan University



Transitional epithelium

- ▶ In this type of epithelium, the basal cells are cubic or long cubic and surface cells can be dome-shaped or flat depending on the degree of tissue tension
- ▶ Superficial cells are called umbrella cells and some of them have two nuclei
- ▶ It is found in the epithelium of the ureter, bladder and the primary part of the urethra. It is known as urothelium in these area



Left: transitional epithelium in bladder epithelium. H&E, 4X. Right: umbrella cells are dome-shaped. H&E, 100X. These pictures are taken from histological slide in histology laboratory of Isfahan University