

Concept and types of tissues, epithelial tissue, simple epithelia

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Histology: is the study of the microscopic anatomy of cells and tissues

Tissue: groups of cells with similar origin and function

Animal tissues

1. Epithelium
2. Connective, supportin
3. Muscle
4. Nervous

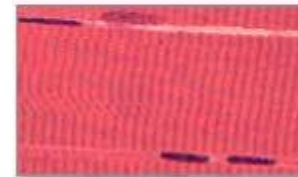
Four types of tissue



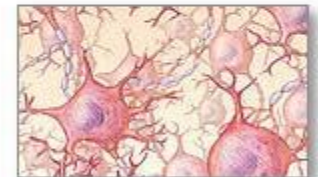
Connective tissue



Epithelial tissue



Muscle tissue



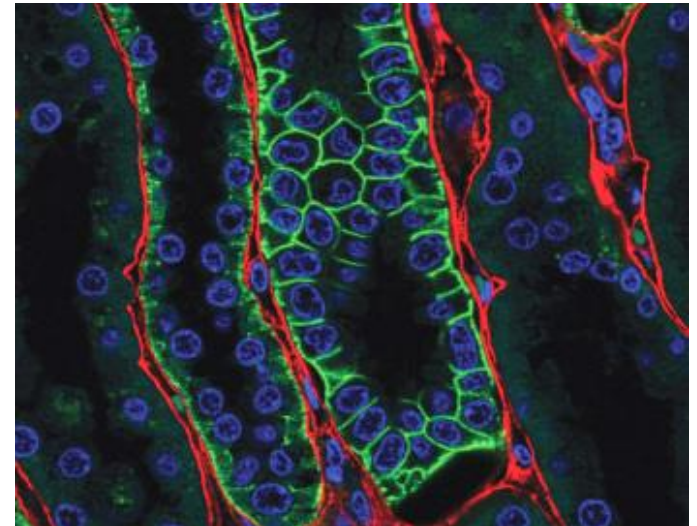
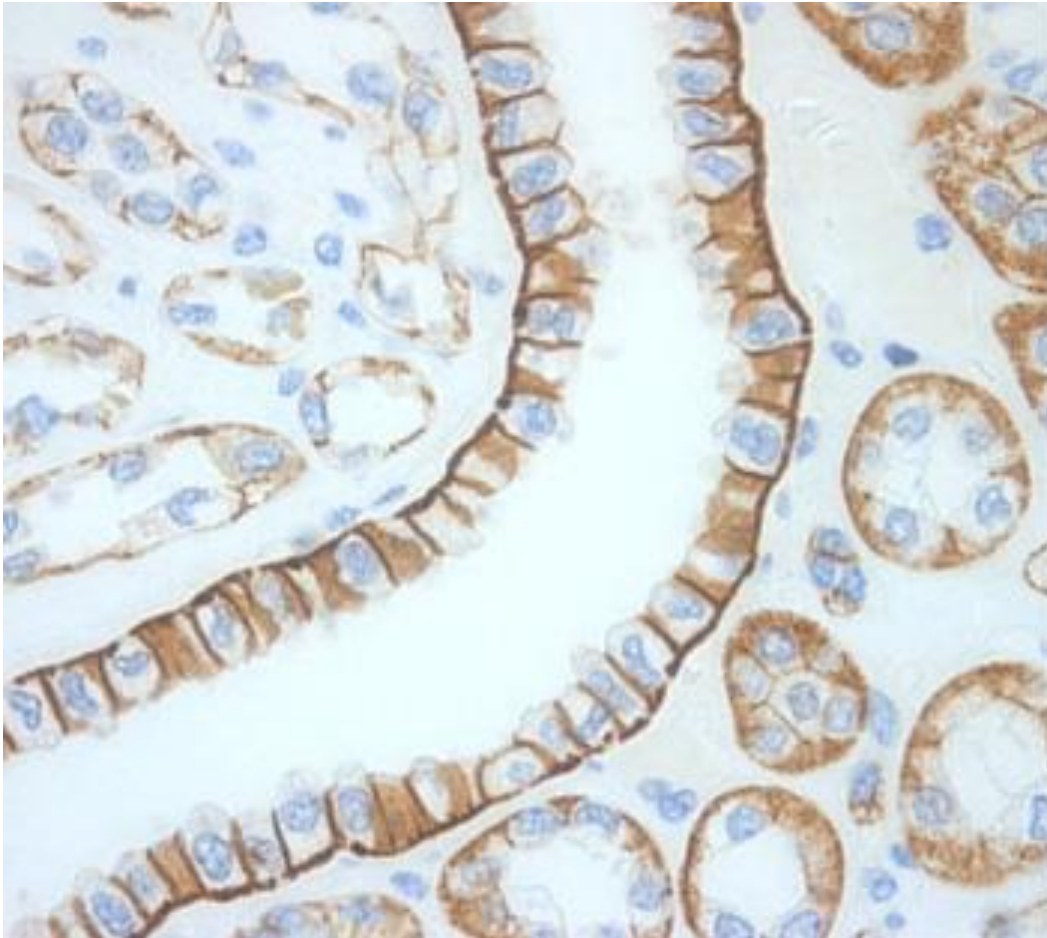
Nervous tissue

Tissue Type	Description	Subtypes
Epithelial	line inner and outer surfaces	based on shape (squamous, cuboidal, columnar) and number of layers (simple, stratified, pseudostratified)
Connective	provide structure and connection; characterized by noncellular matrix outside the cells	loose, dense, fibrous, cartilage, bone, blood, adipose
Nervous	coordinate receipt of and response to stimuli	neurons, glial cells
Muscle	movement is a consequence of contraction of these cells results in movement	smooth, striated, cardiac

Develop from three embryonic germ layers:

1. *Ectoderm* (outside) gives rise to **ET** and NT;
2. *Mesoderm* (middle) gives rise to **ET**, CT and MT;
3. *Endoderm* (inside) gives rise to **ET**

epithelial tissue



Types of epithelial tissue

1 Covering or Lining Epithelium

Protection

Diffusion

Absorbtion

Excretion

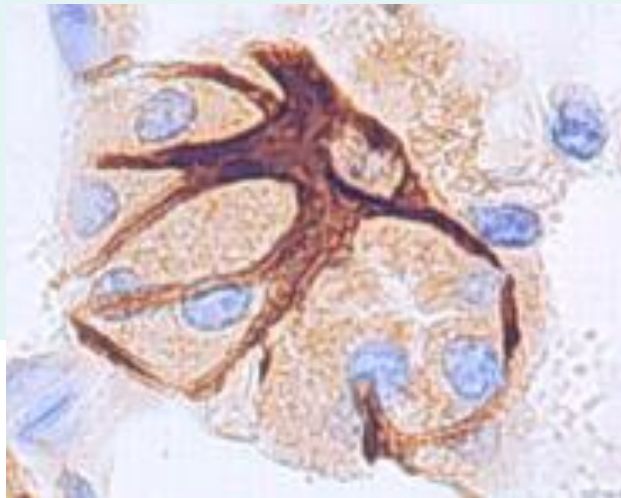
2 Glandular- secretion

3 Sensory

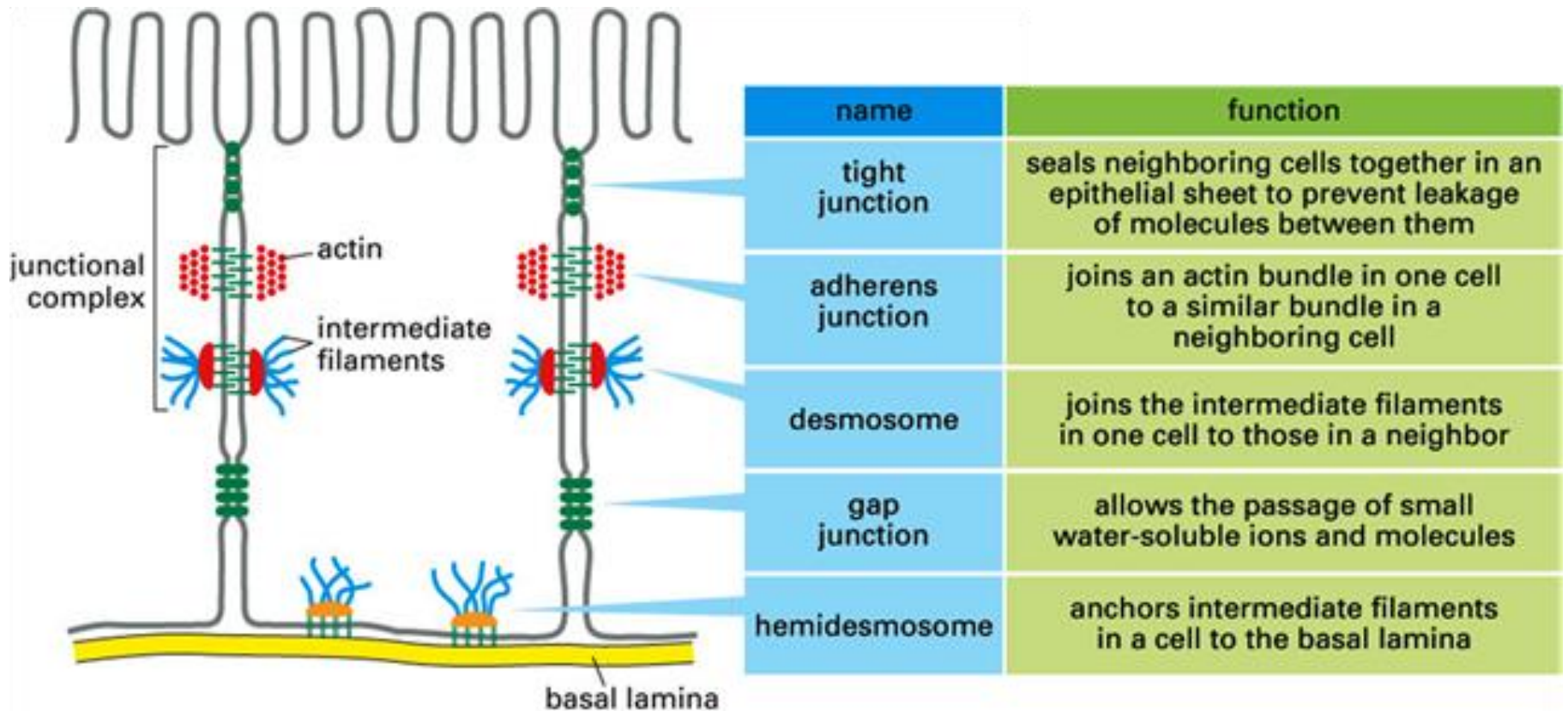
4 Myoepithel contractil

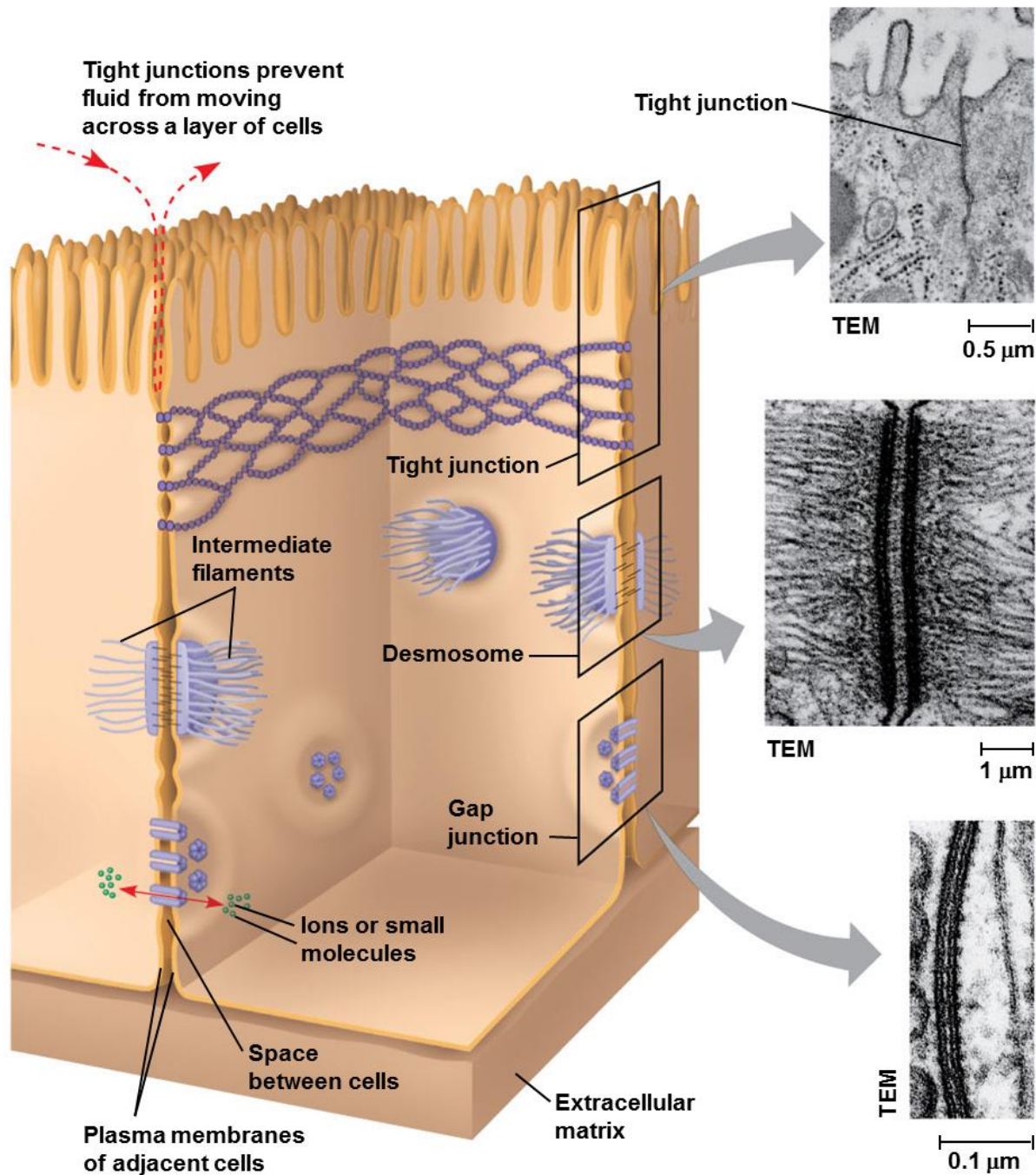
Myoepithelium

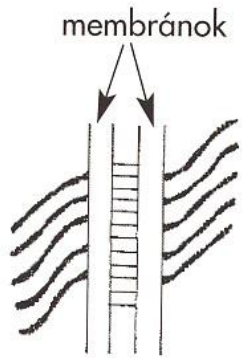
- Myoepithelium - specializálódott, kontrakcióra képes hámsejtek
- Mirigyvégkamrákat és kivezetőcsöveket vesznek körül
- Actint, myosint, cytotokeratint tartalmazznak



Intercellular adhesion

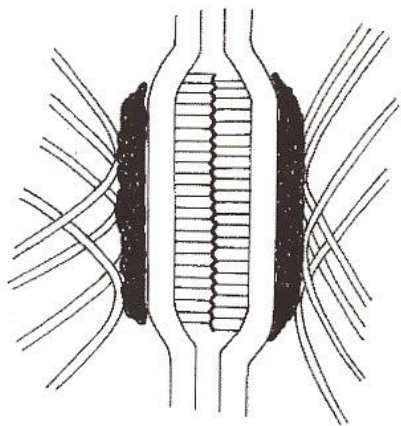
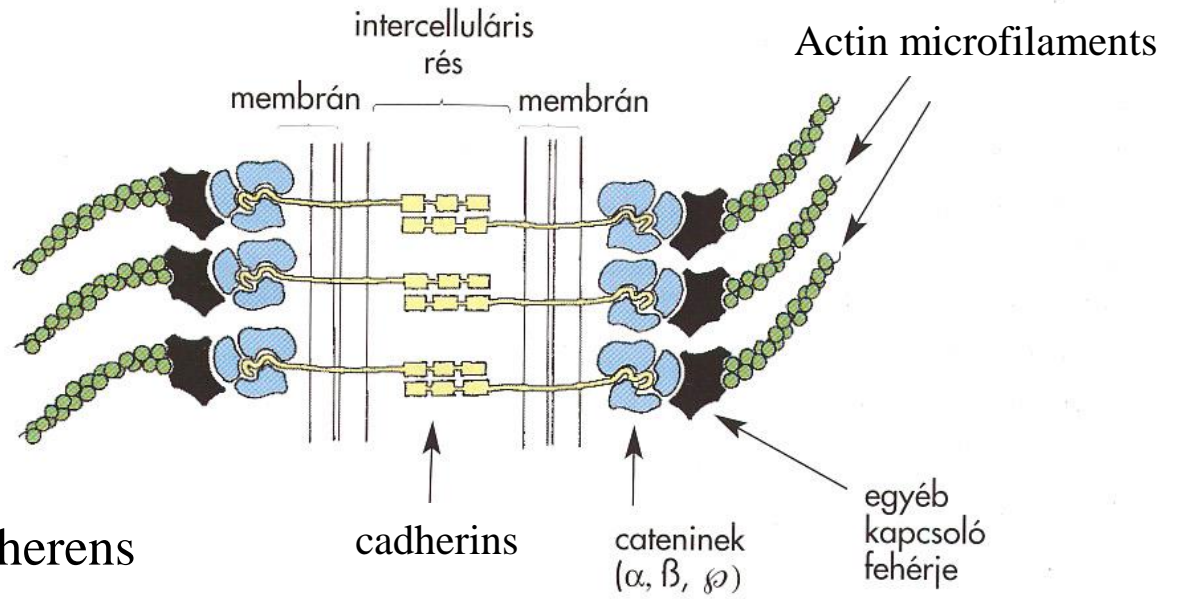






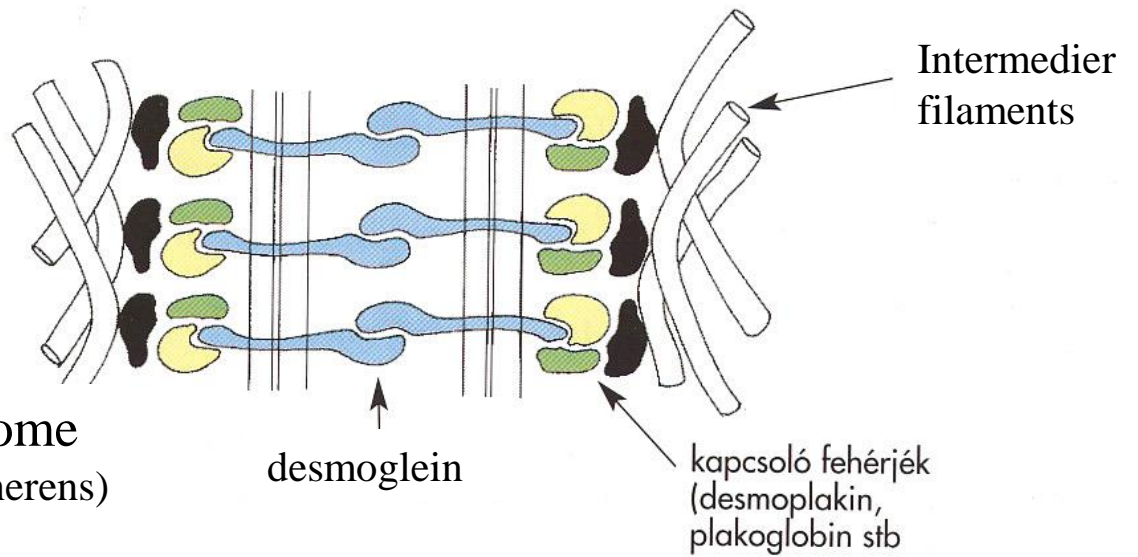
EM-kép

Zonula adherens



EM-kép

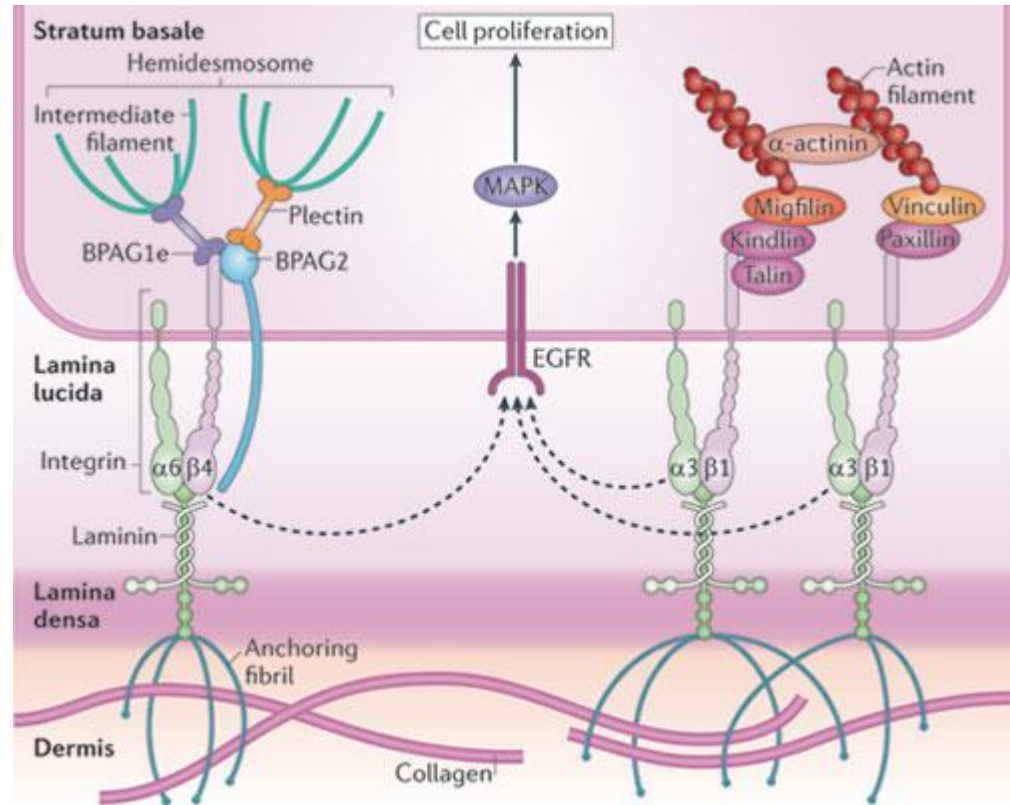
Desmosome (macula adherens)



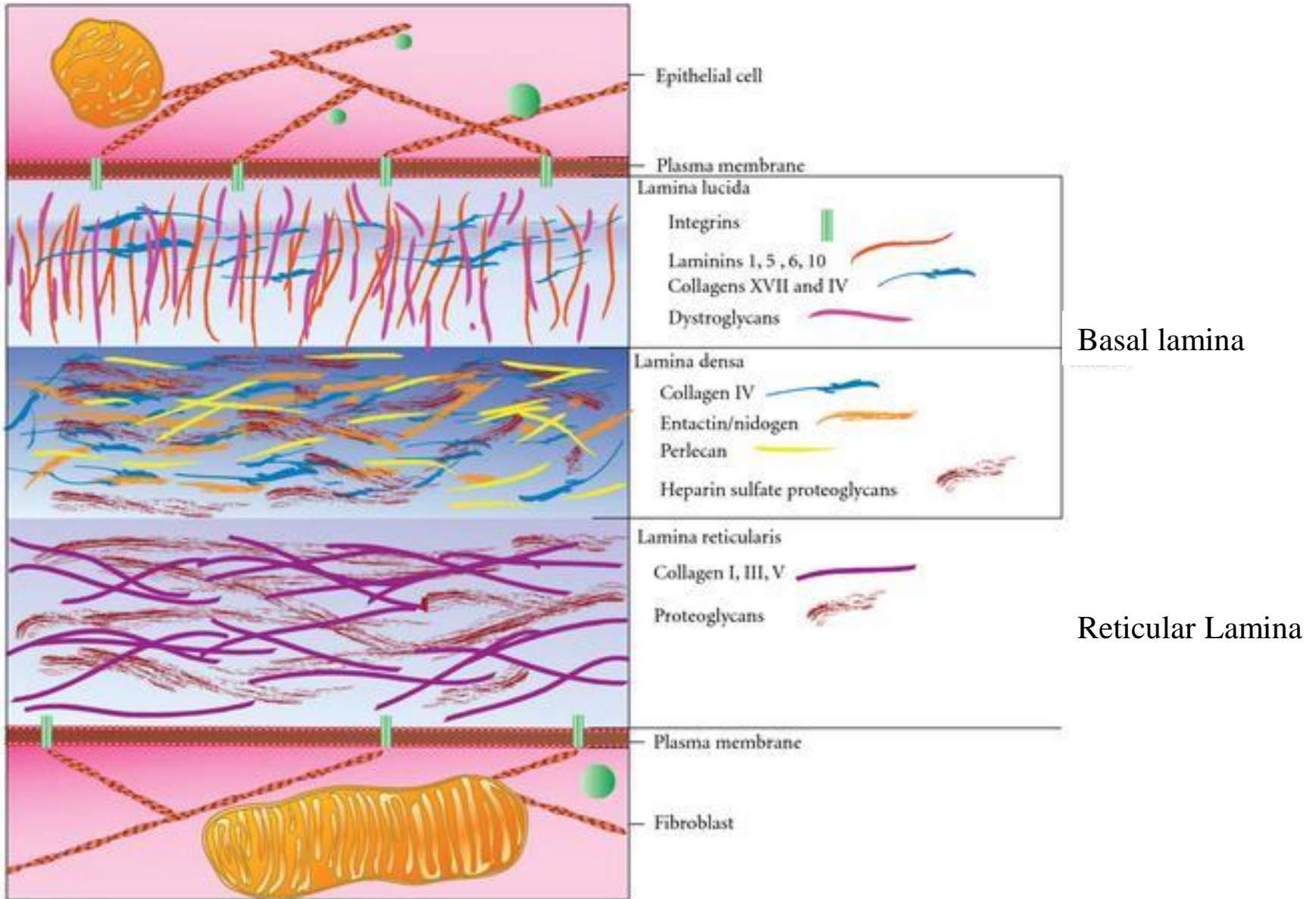
Basment membrane

Basal Lamina


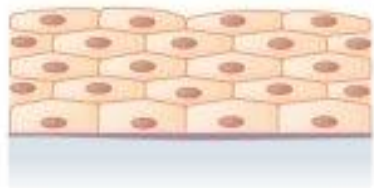



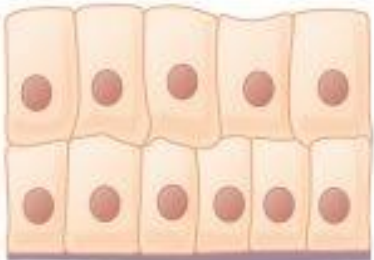
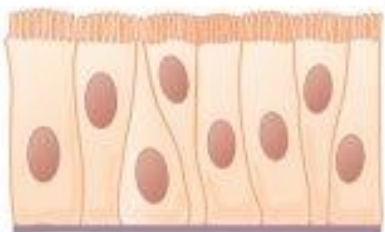
Reticular Lamina

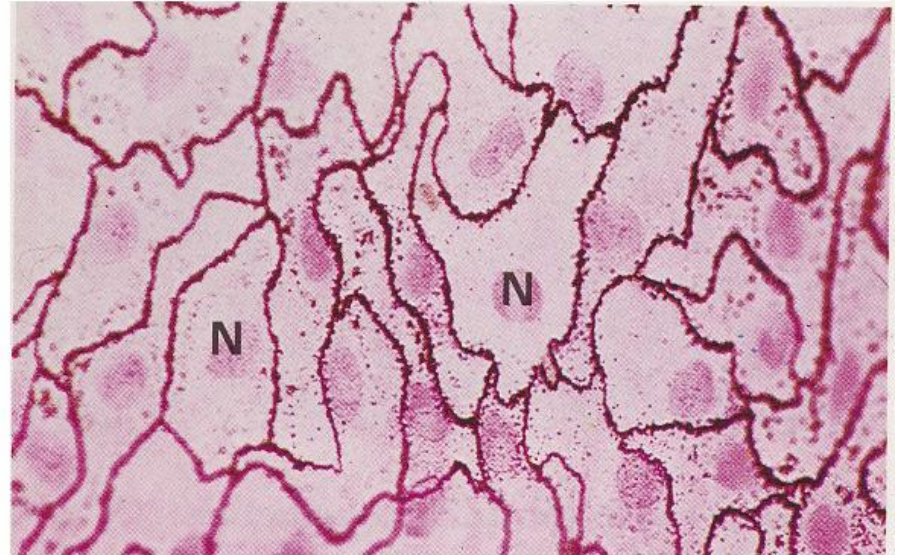
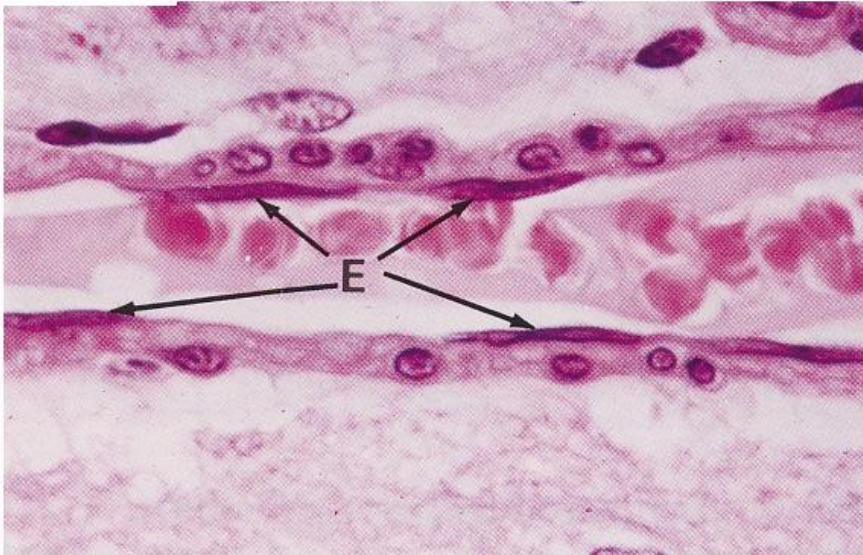
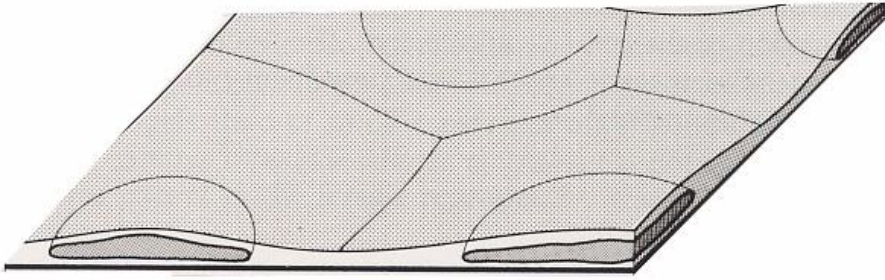


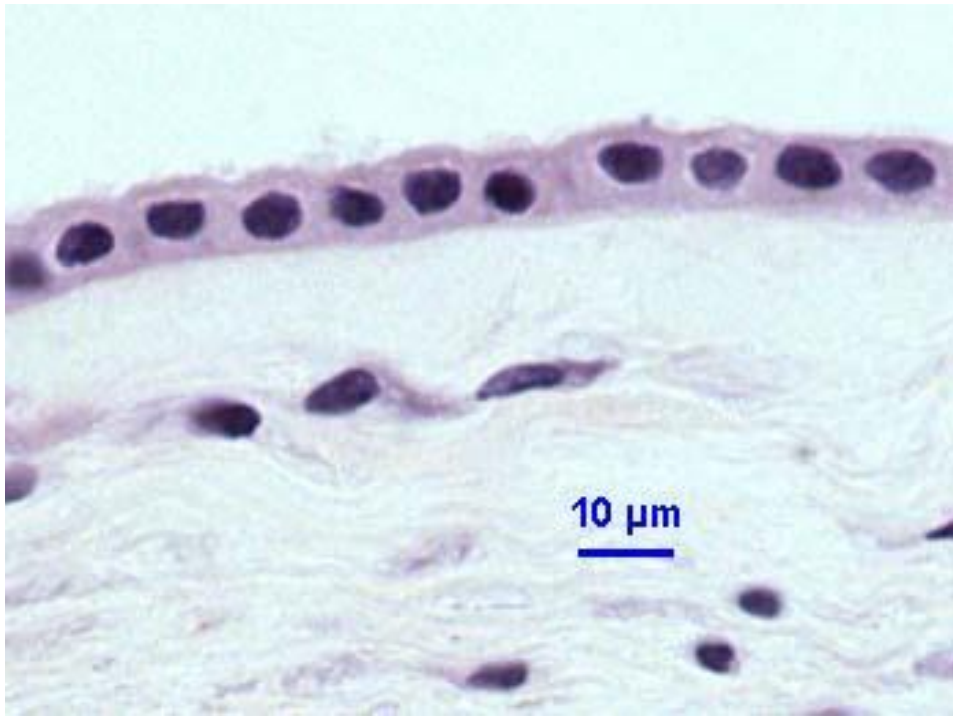
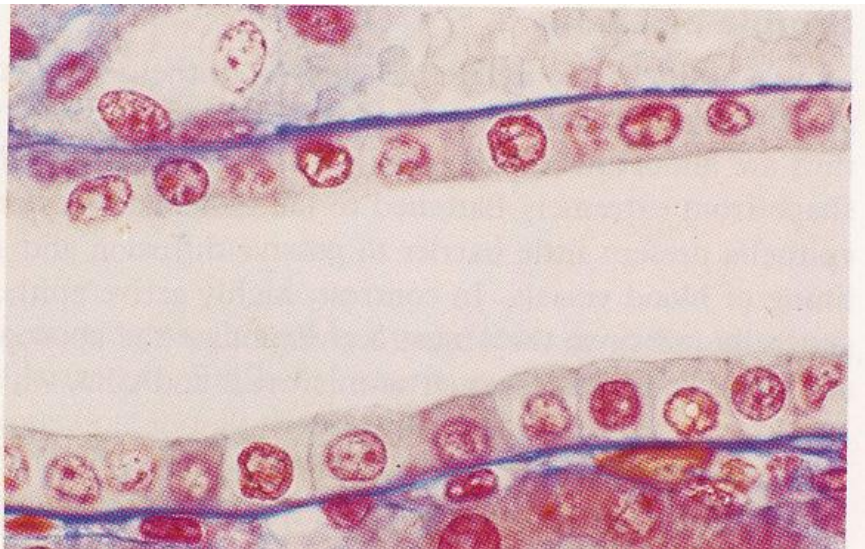
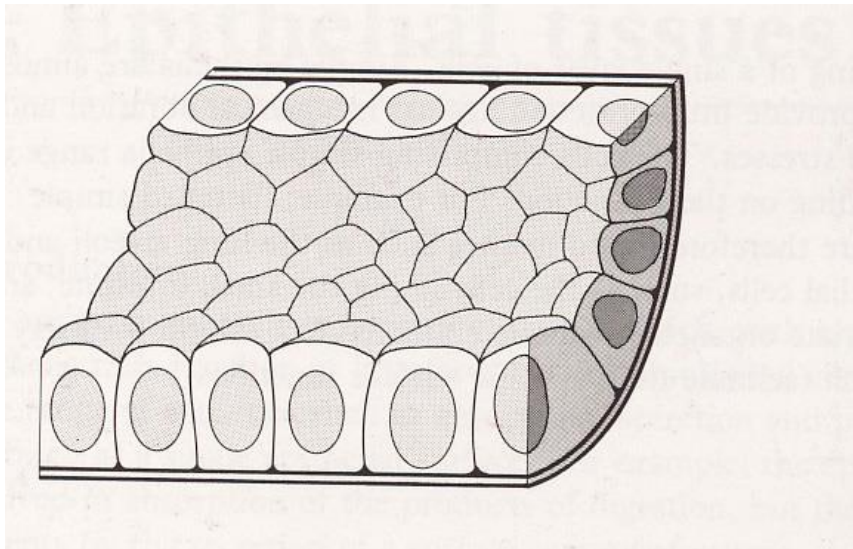
Basment membrane

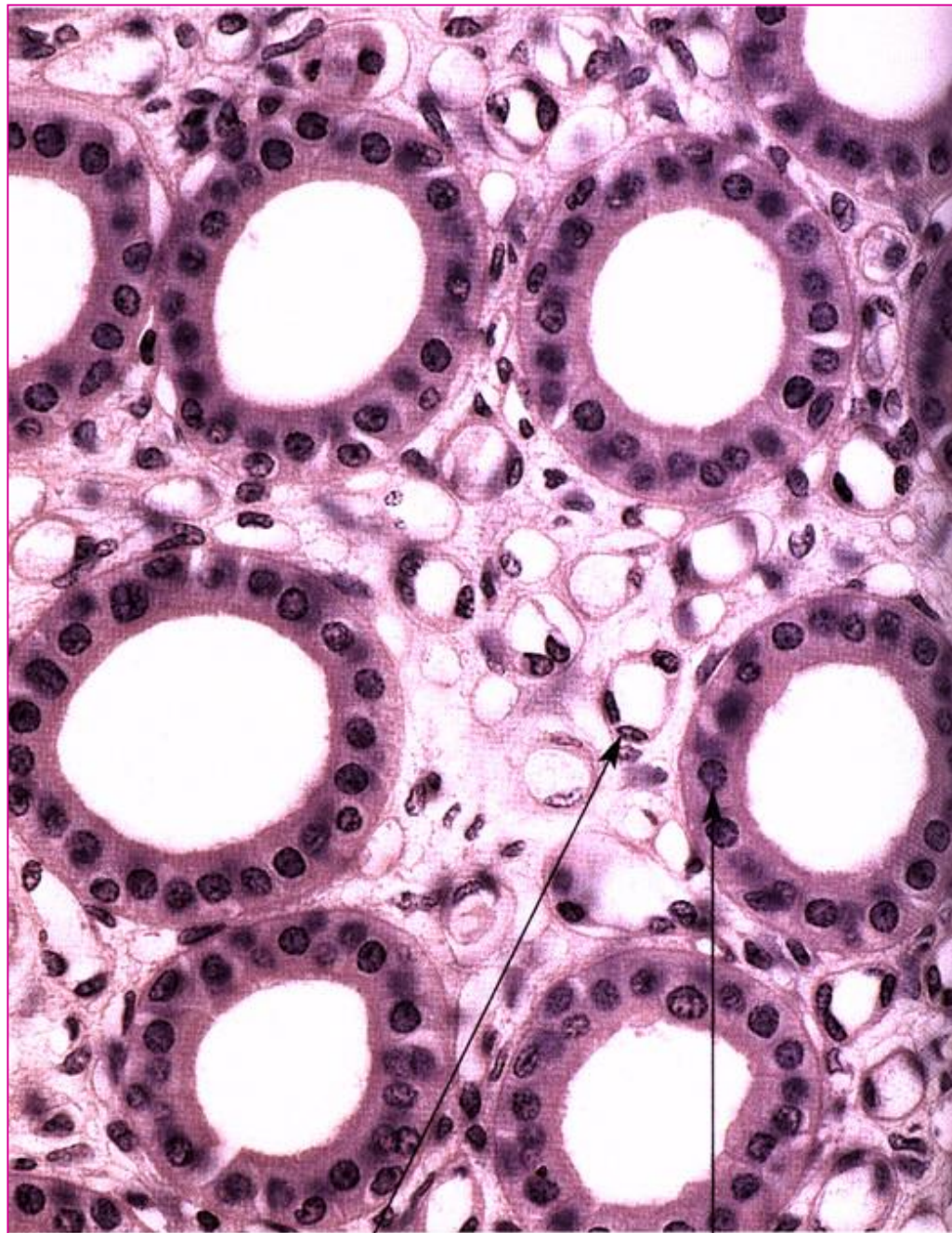


Lining Epithelium

	Simple	Stratified	
Squamous	 <p>Simple squamous epithelium</p>	 <p>Stratified squamous epithelium</p>	
Cuboidal	 <p>Simple cuboidal epithelium</p>	 <p>Stratified cuboidal epithelium</p>	
Columnar	 <p>Simple columnar epithelium</p>	 <p>Stratified columnar epithelium</p>	<p>Pseudostratified</p>  <p>Pseudostratified columnar epithelium</p>

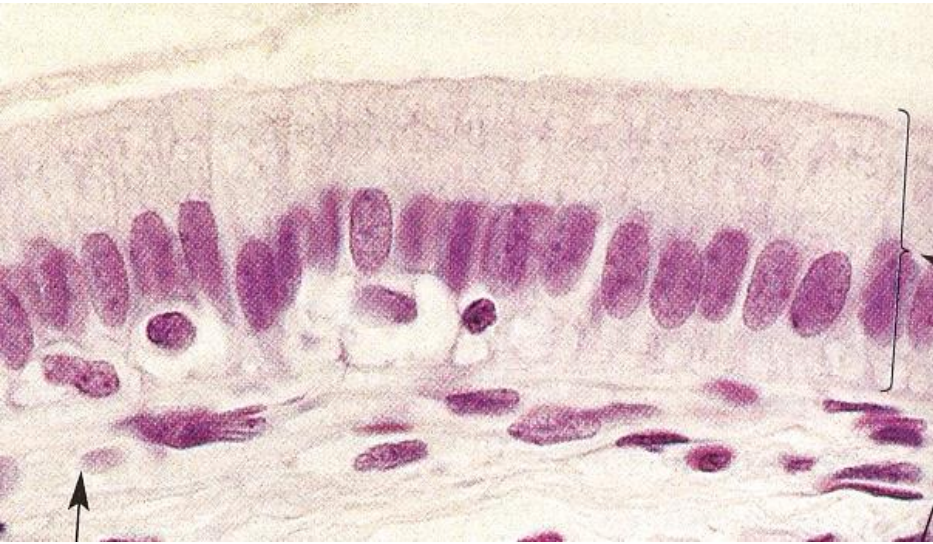
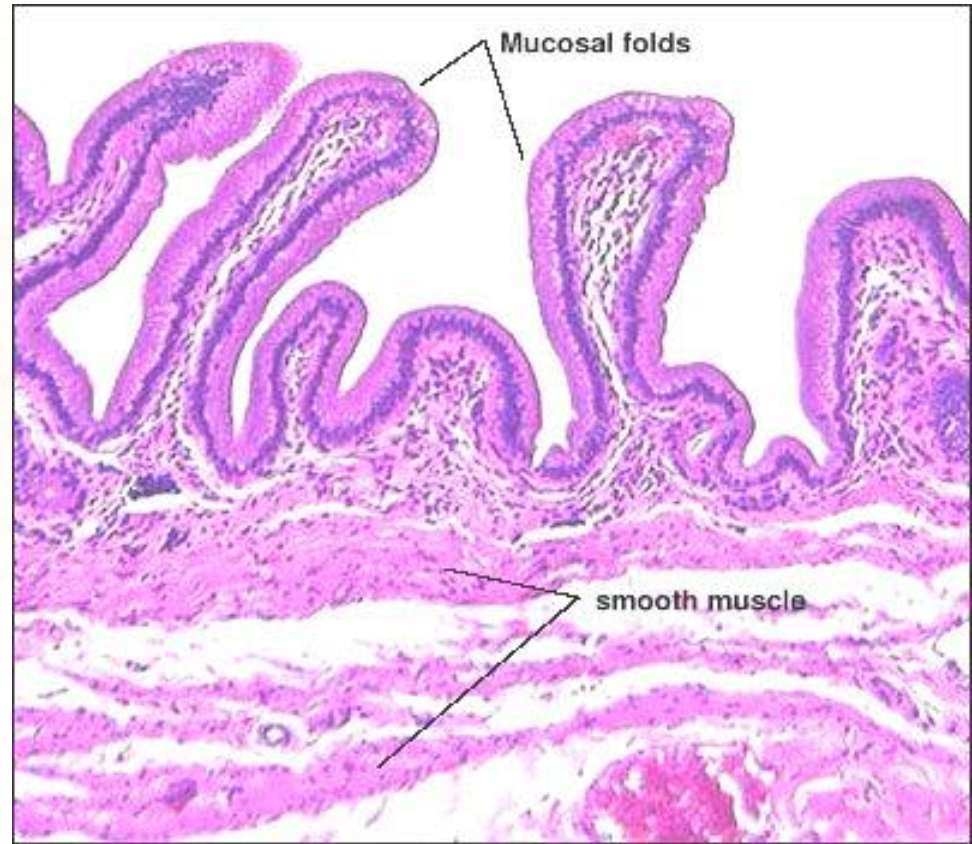
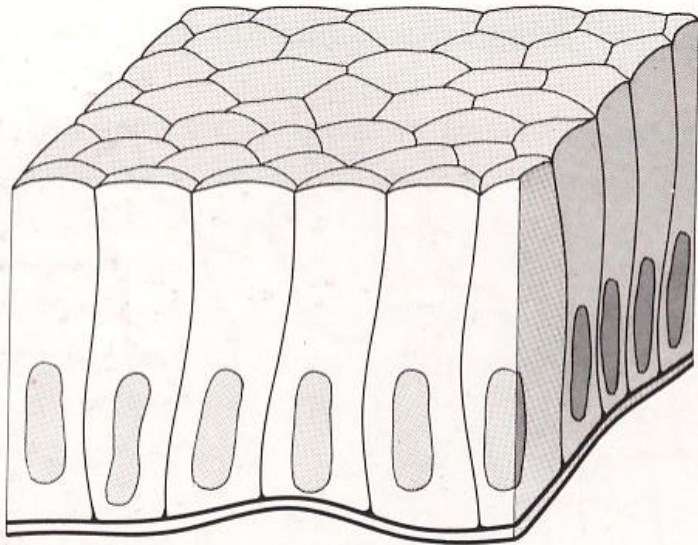




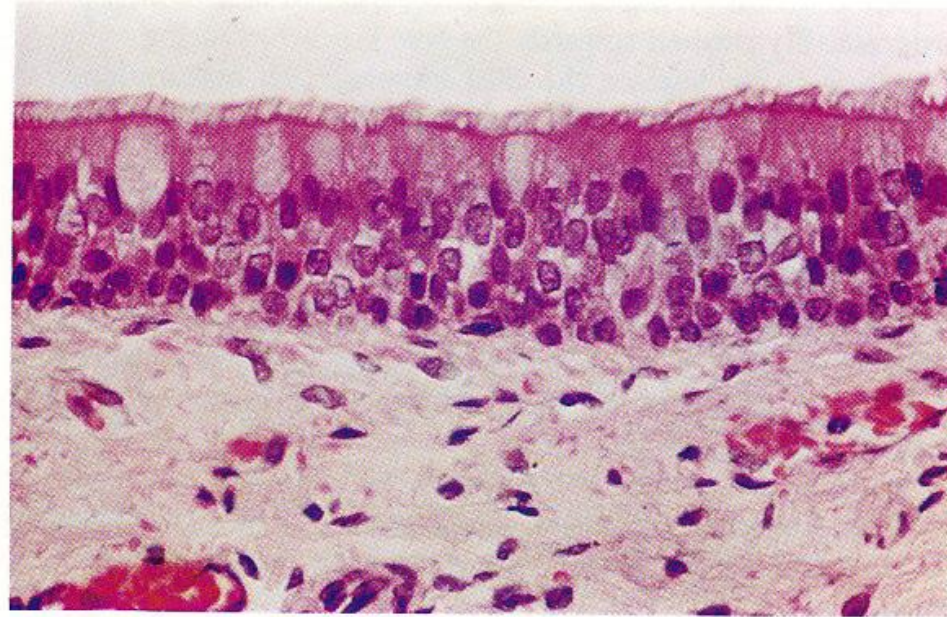
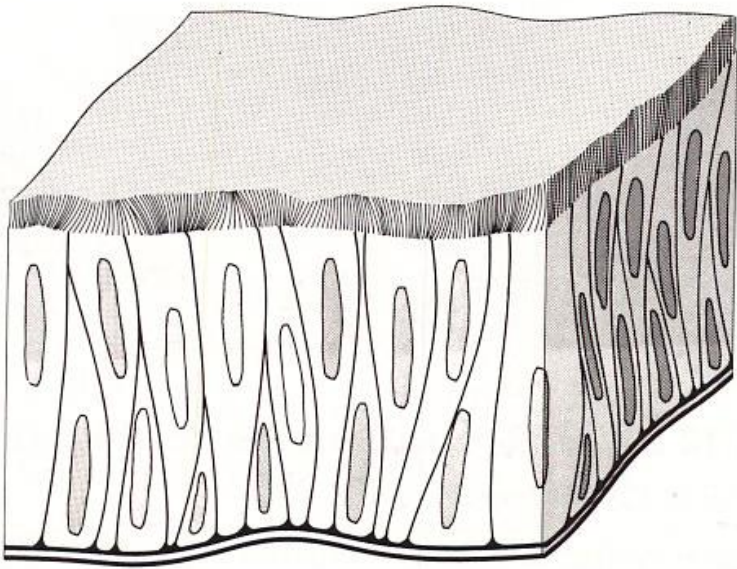


laphámsejt

köbhám



Pseudostratified epithelium



Cilia and Flagella Structure

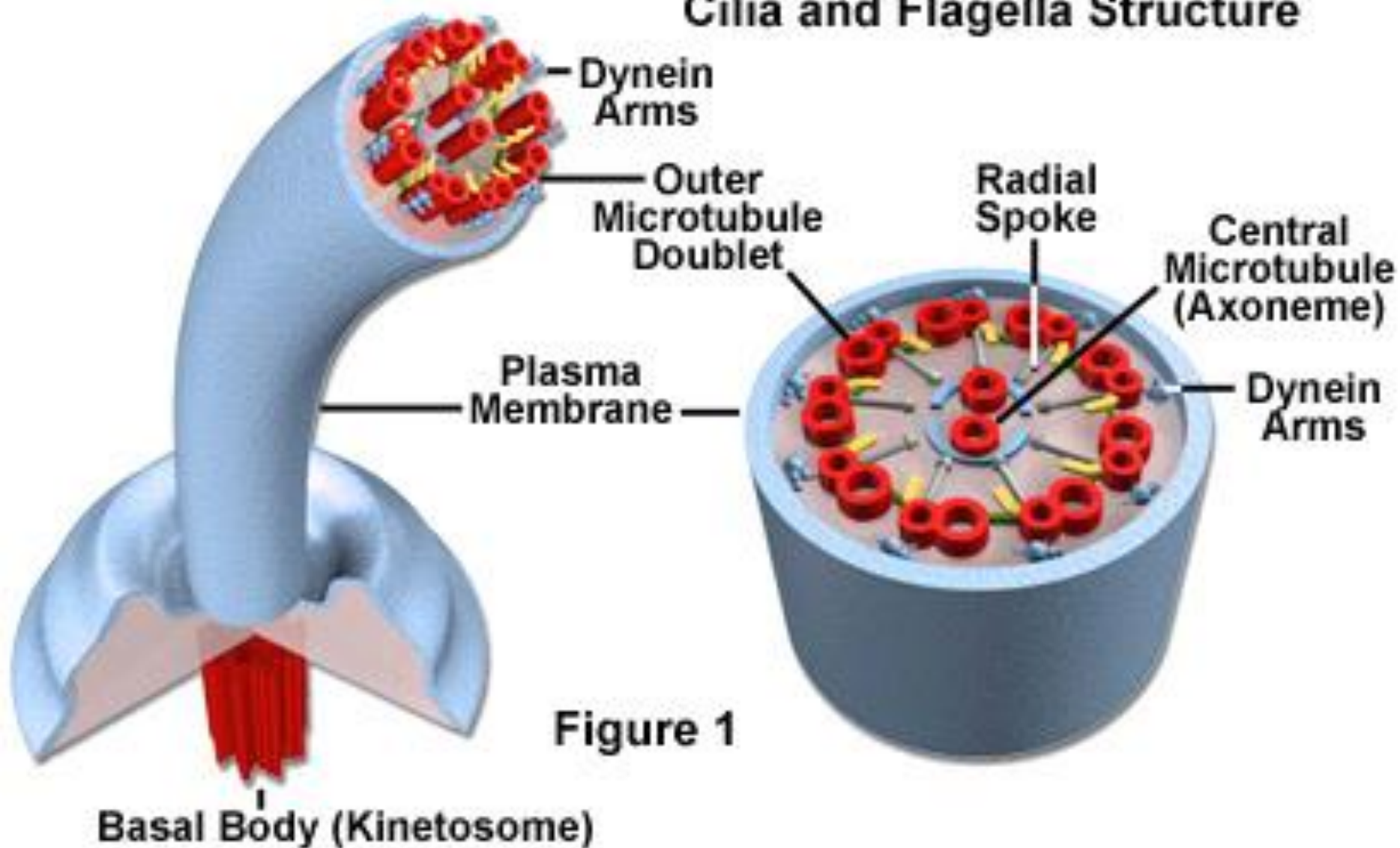
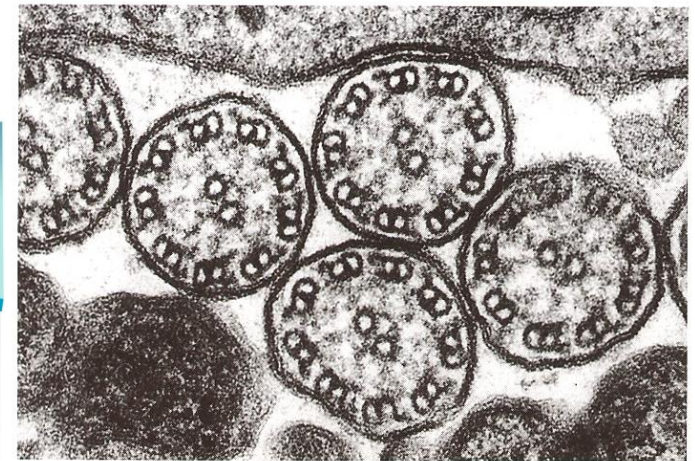
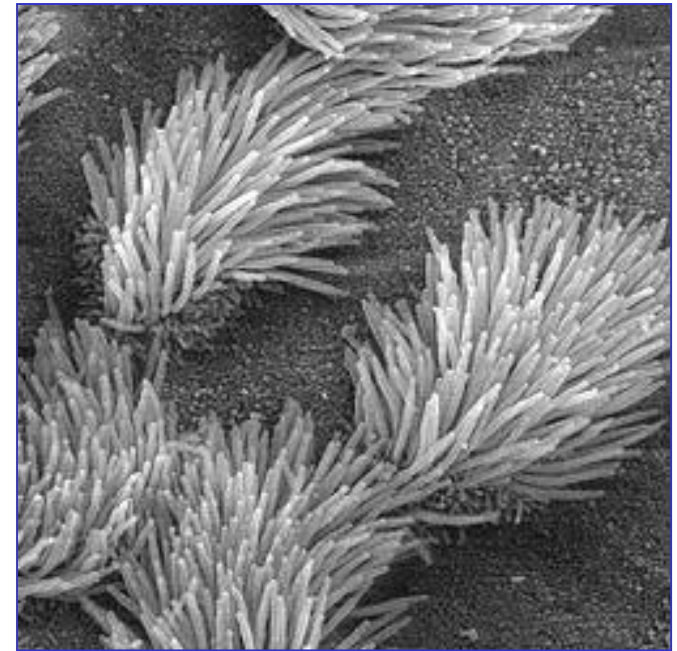
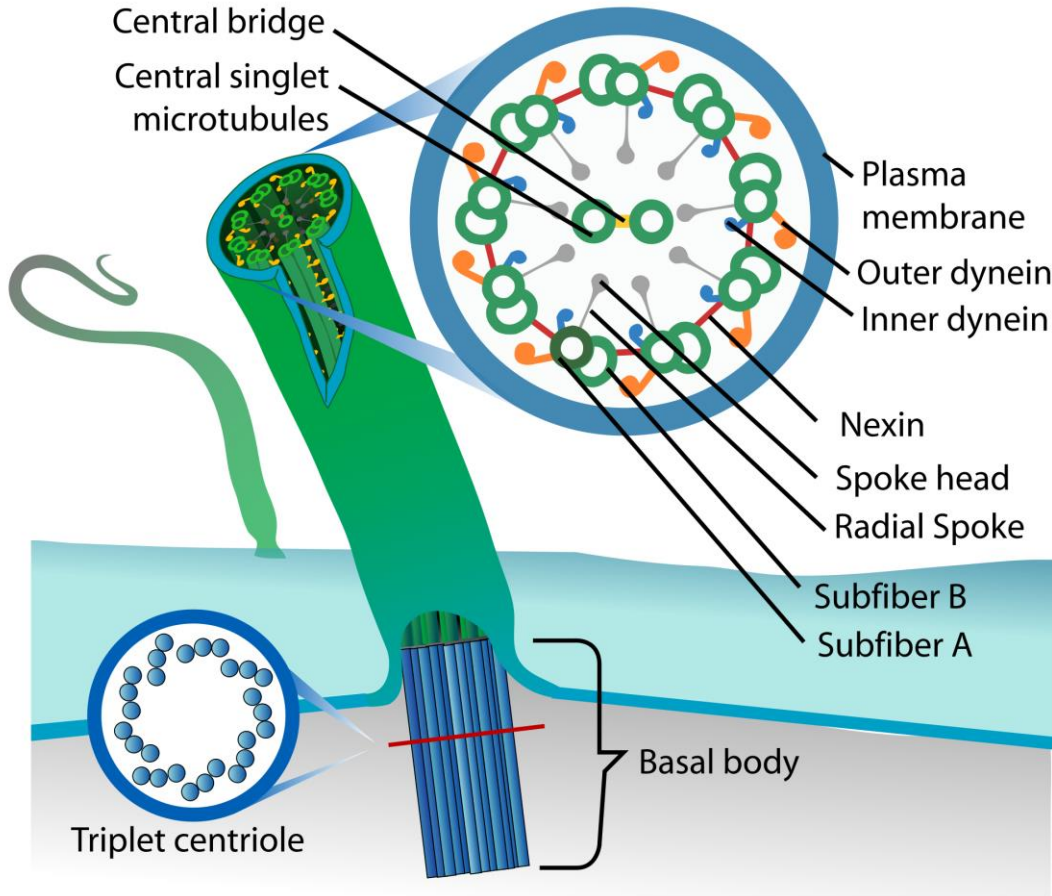
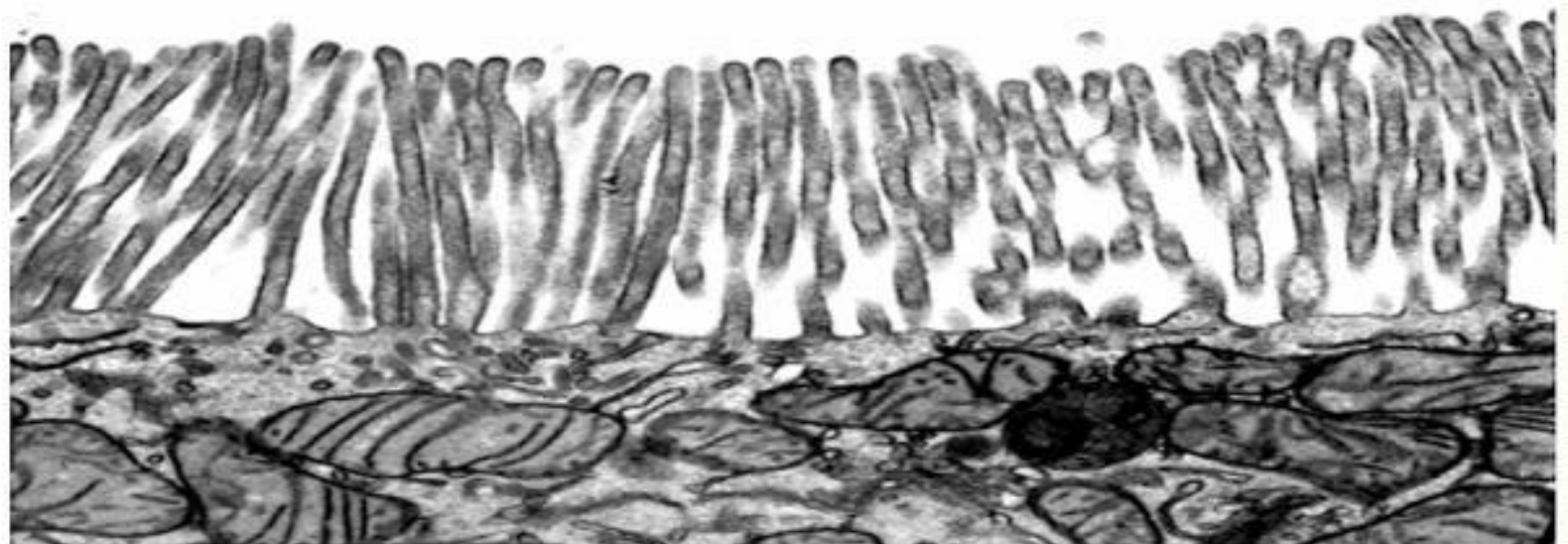
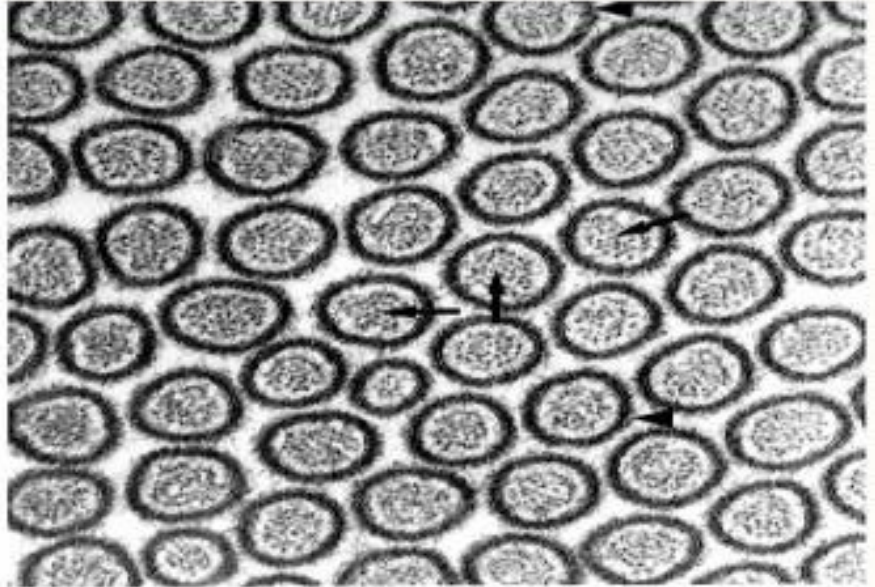
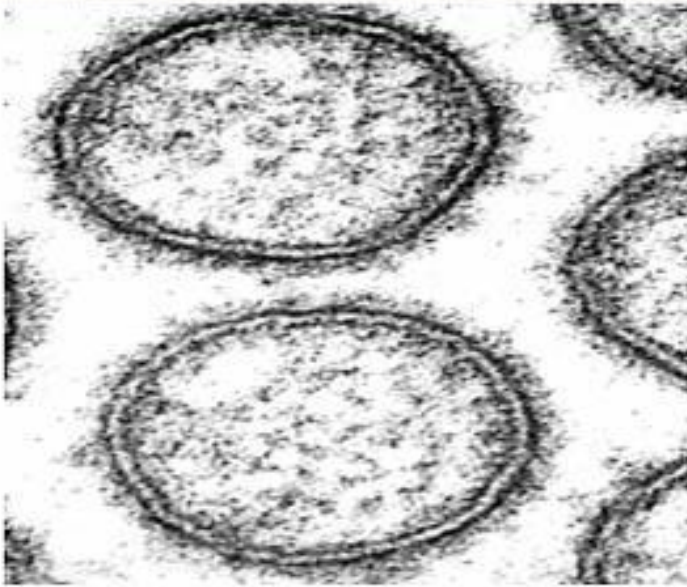


Figure 1

cilium



microvilli



CILIA VERSUS MICROVILLI

Cilia occur in the columnar epithelial cells of the respiratory and uterine tube	Microvilli mainly occur in the columnar epithelial cells of the small intestine and kidney tubules
Arise from the basal granules	Do not arise from the basal granules
Involved in the movement	Increase the absorption
Motile	Non-motile
Made up of microtubules; they contain (9+2) ultrastructure	Made up of microfilaments; they lack (9+2) ultrastructure
Do not possess a glycocalyx layer	Surrounded by a glycocalyx layer
Taper distally	Extremely thin and short
Occur in fewer numbers	Numerous