

# **Descriptive Histology**

**Describe  
this picture**



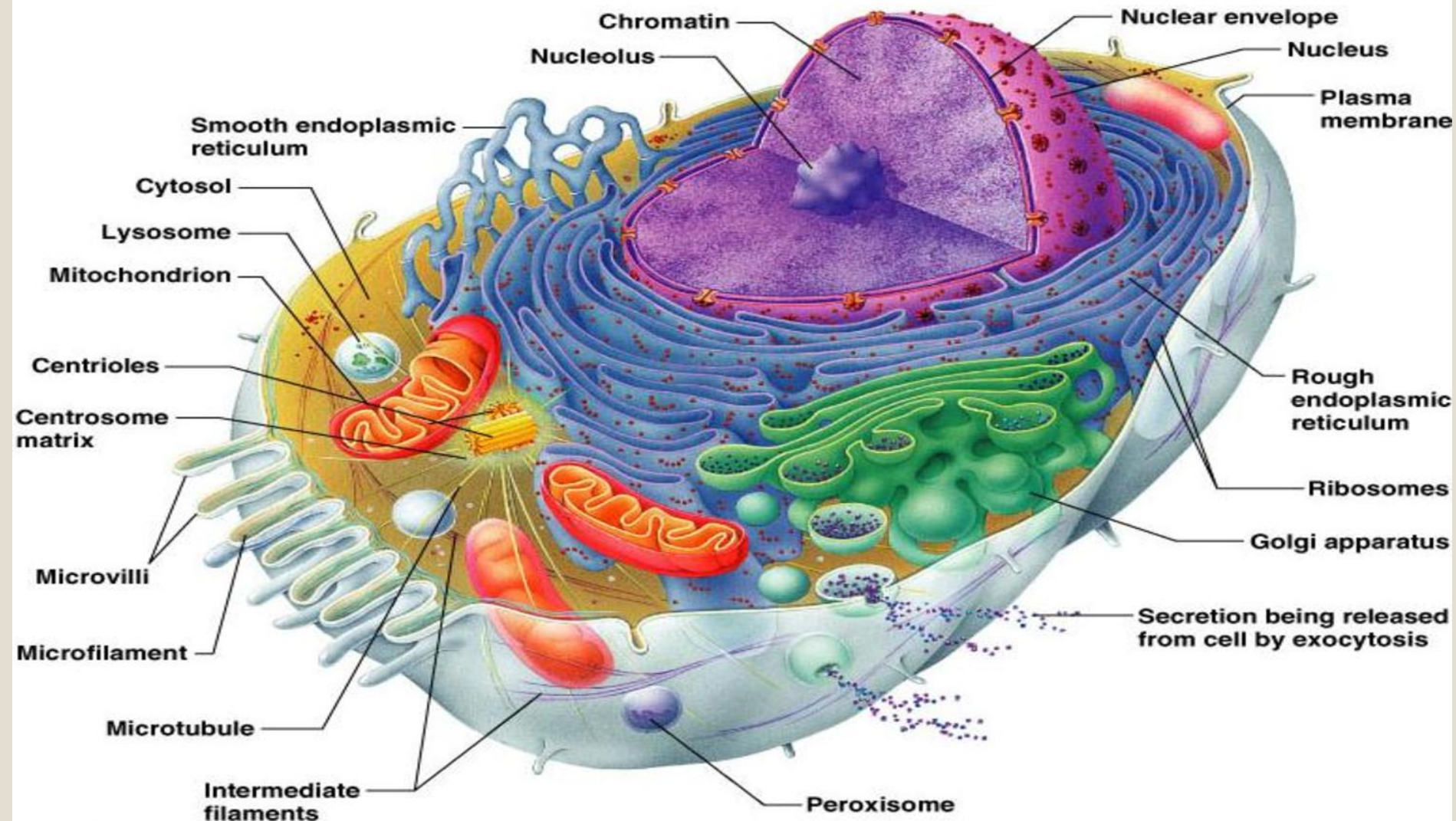




**Describe  
this picture**



# Structure of a Generalized Cell



# Definitions

- Descriptive: to describe
- Histology: The study of the microscopic structure of tissues.
- Tissue: An aggregate of cells in an organism that have similar structure and function.
- Cell: A membrane bound structure containing biomolecules, such as nucleic acids, proteins, and polysaccharides.

# Type of tissue

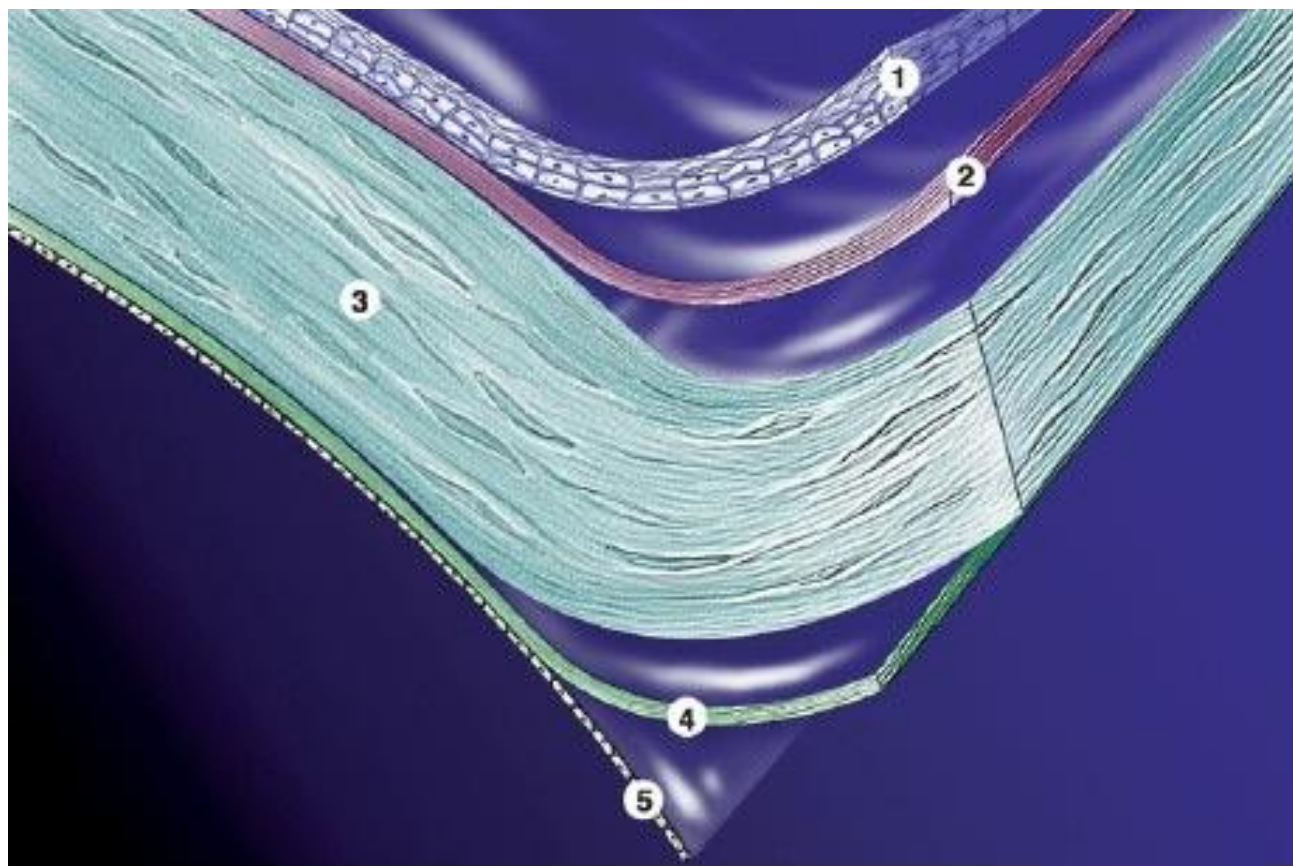
- Epithelial
- Connective
- Muscular
- Nervous

# Epithelial Tissue

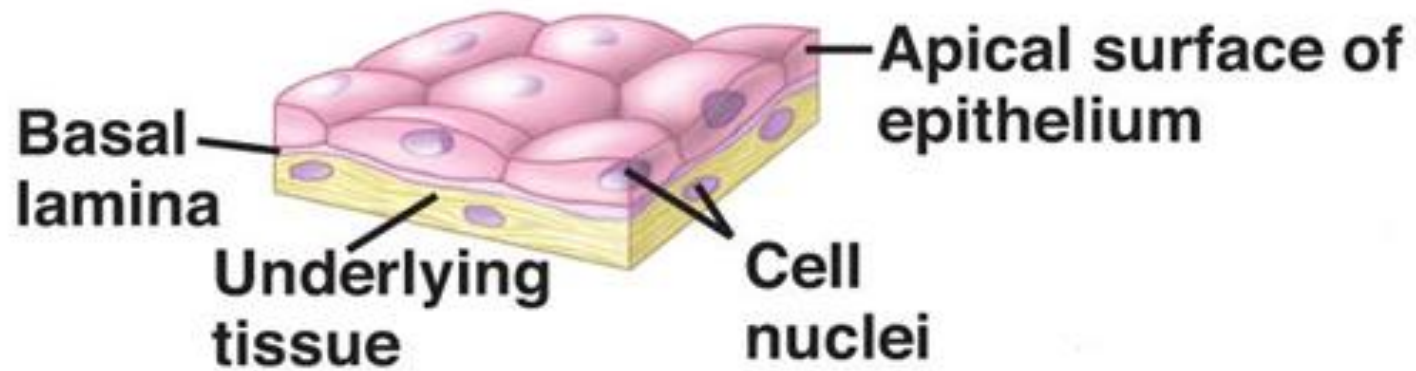
**What do you know about Epithelial Tissue?**

Layers	Cell Shape	Location
Simple (One layer)	Squamous (flat)	Capillary and air sac linings
	Cuboidal (cube)	Kidney tubules and thyroid gland
	Columnar (column)	Intestinal lining
Stratified (More than one layer)	Squamous (flat)	Skin
	Cuboidal (cube)	Sweat glands and mammary glands
	Columnar (column)	ocular conjunctiva of the eye, Pharynx and anus
Pseudostratified (one layer but looks like more)	Columnar	Upper respiratory tract

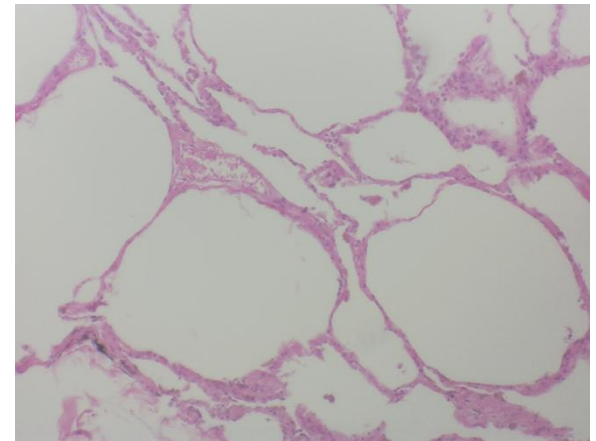
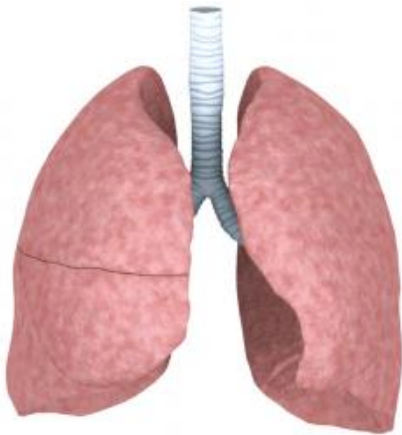


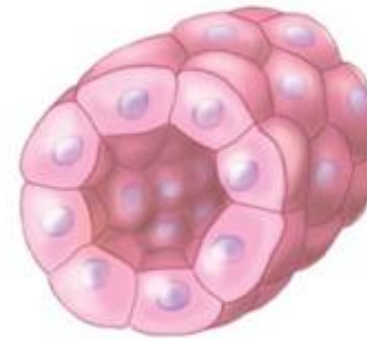
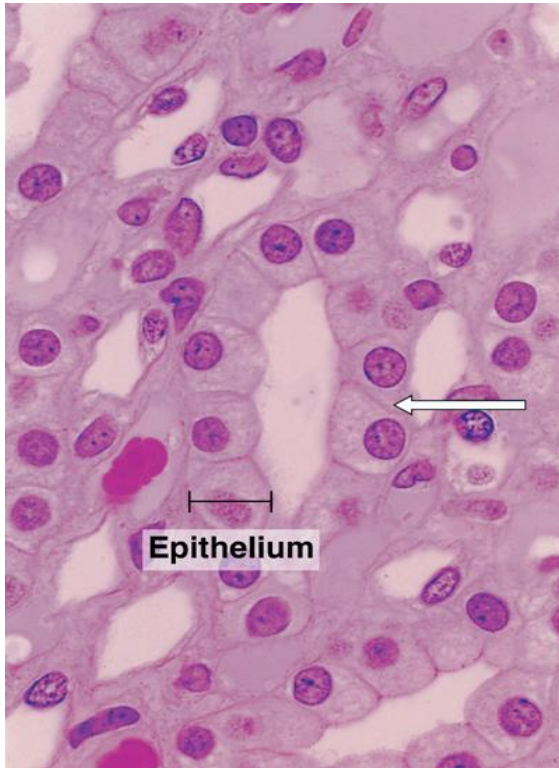


- **Transitional:** Multiple layers of cells, but surface cells change from rounded to flat to permit expansion when needed. Transitional epithelium is found in the urinary bladder, renal pelvis and ureters.
- **Glandular:** Columnar and cuboidal cells often become specialized as gland cells which are capable of secreting substances such as enzymes, hormones, mucus, sweat and saliva. Examples include the salivary, sweat and adrenal glands

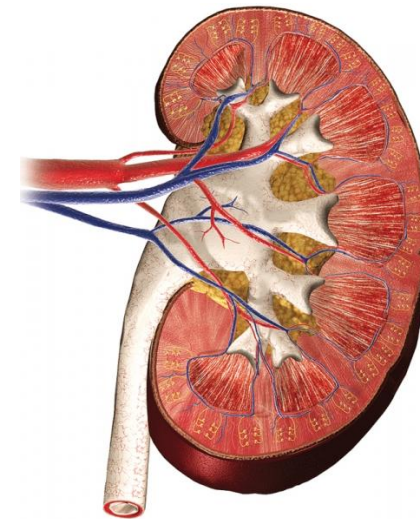


**Simple squamous epithelium  
(air sacs of the lung)**

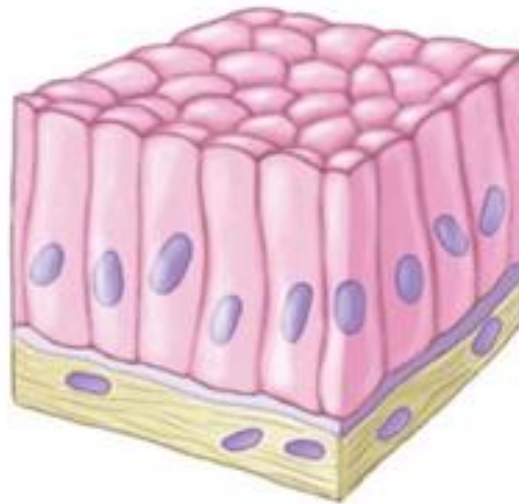




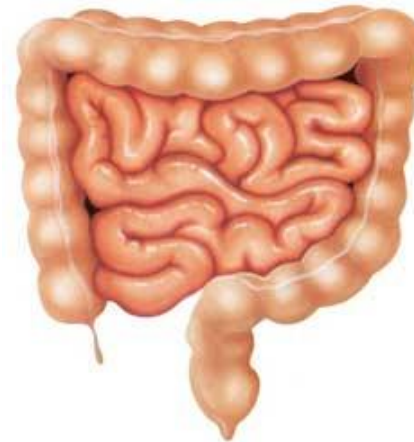
**Simple cuboidal epithelium  
(kidney)**

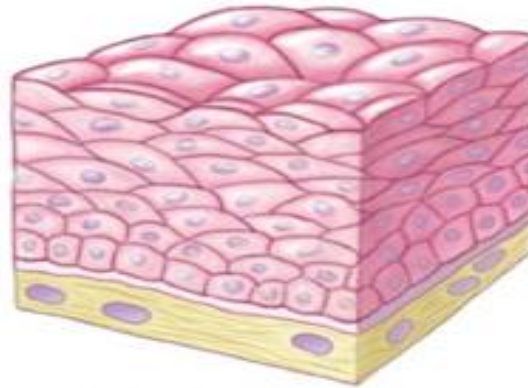
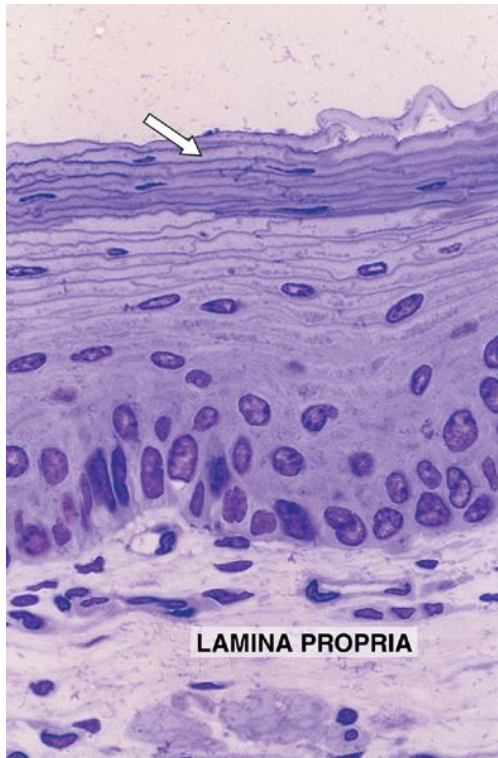






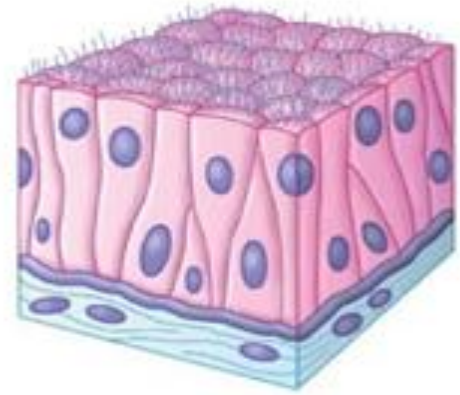
**Simple columnar epithelium  
(intestine)**



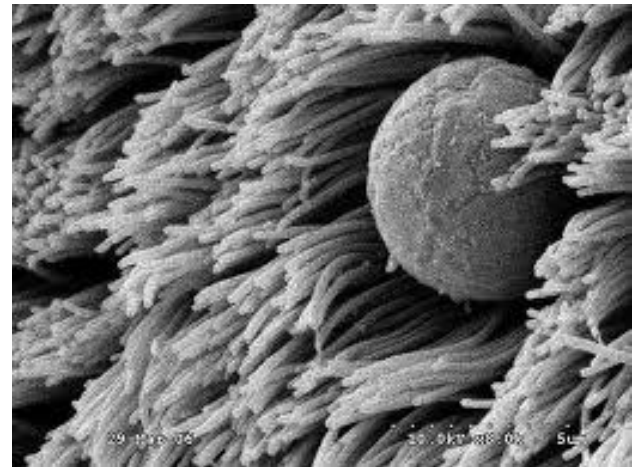


**Stratified squamous  
epithelium  
(esophagus)**

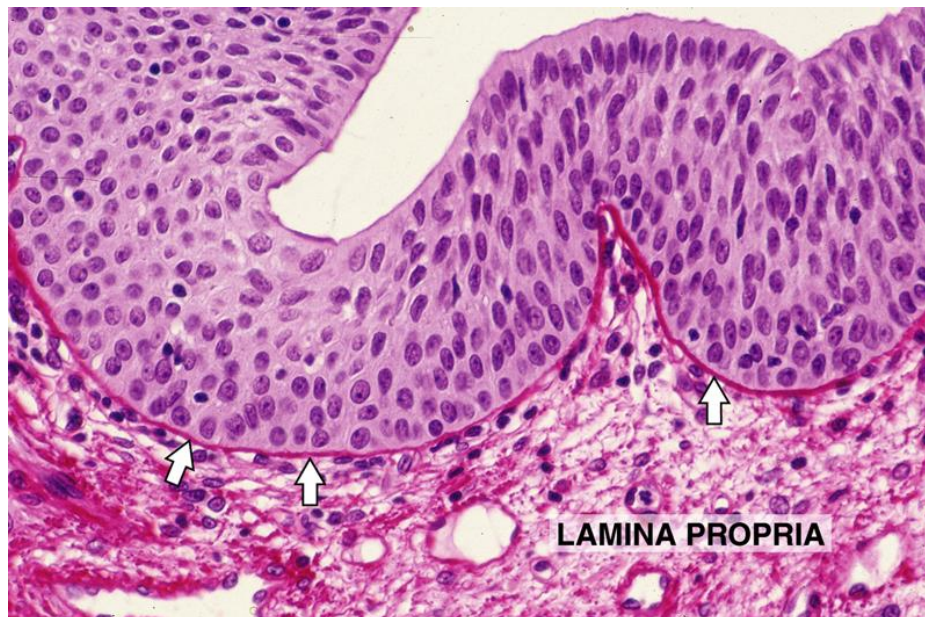
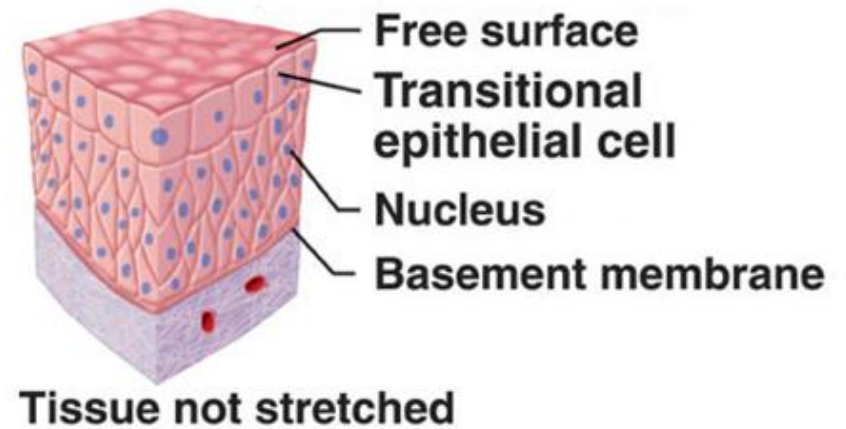
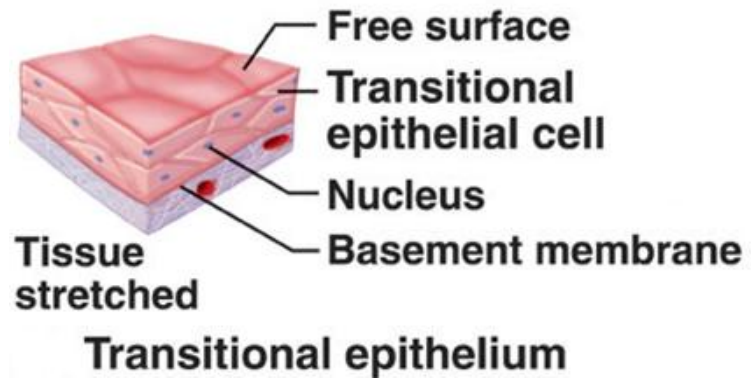




**Pseudostratified  
ciliated columnar  
epithelium  
(respiratory tract)**









Function of Epithelium	Examples:
<b>Mechanical protection</b>	skin or in body tubes (stratified squamous)
<b>Permeability barrier (selective)-</b>	cells lining the GI tract regulates what enters BVs (simple columnar cells of small intestine)
<b>Absorption</b>	small intestine (simple columnar)
<b>Filtration</b>	epithelium of renal corpuscle (simple squamous)
<b>Secretion</b>	glandular epithelium (simple cuboidal in ducts)
<b>Diffusion of gases or fluids</b>	lung alveoli or blood vessels (simple squamous)
<b>Surface transport over epithelium</b>	respiratory tract (pseudostratified columnar ciliated) or oviduct (simple columnar ciliated)
<b>Sensory</b>	epithelium often specialized among sense organs