

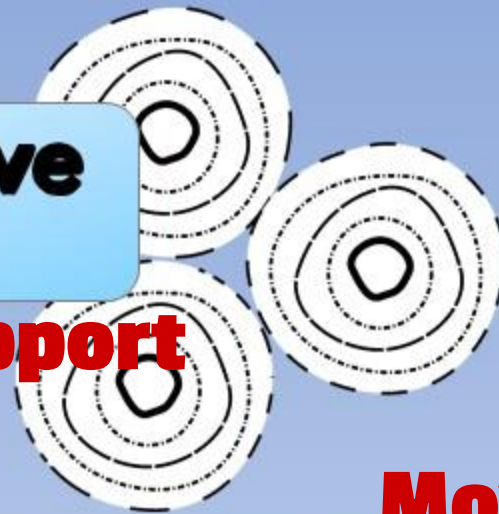
# Histology:

## The study of tissues

Tissues are groups of **cells** with similar structure and function

**Connective  
Tissue**

**Support**



**Movement**

**Muscle  
Tissue**



**Epithelial  
Tissue**

**Covering**

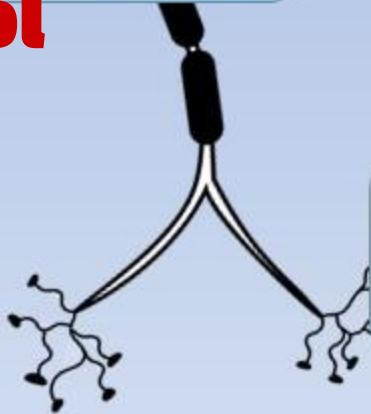
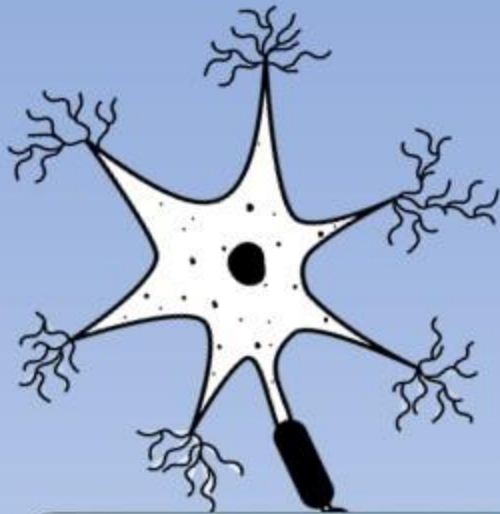


**4 Types  
of  
Tissues**



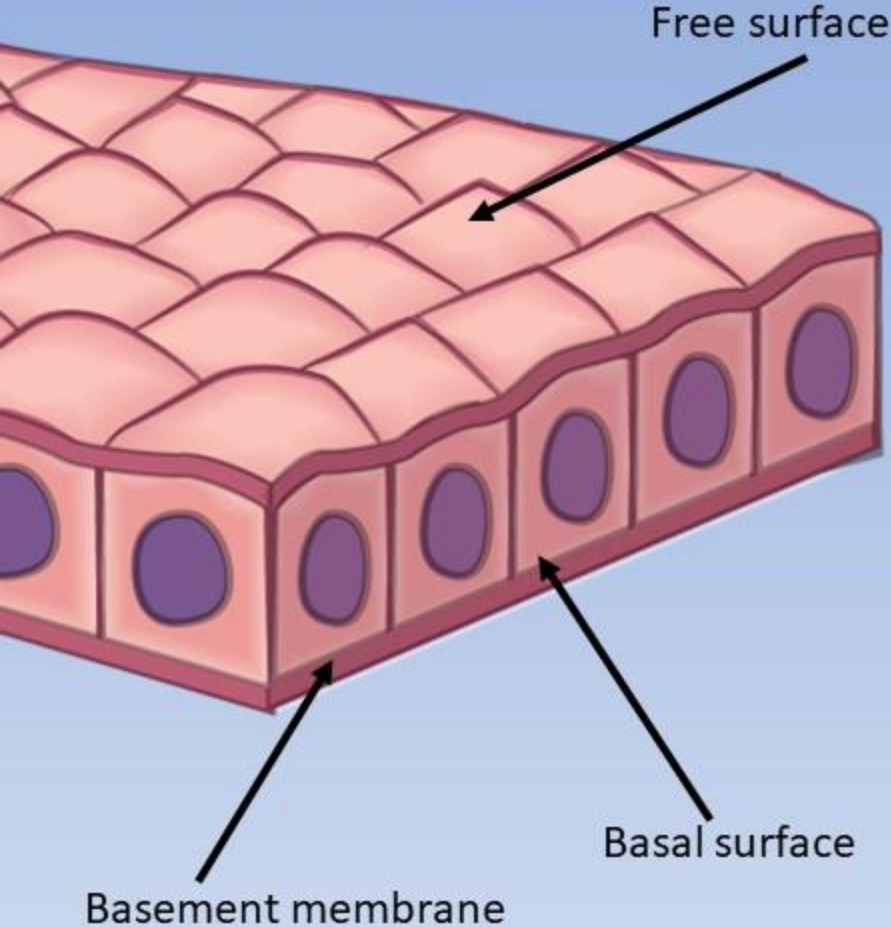
**Nervous  
Tissue**

**Control**



# Epithelial Tissue

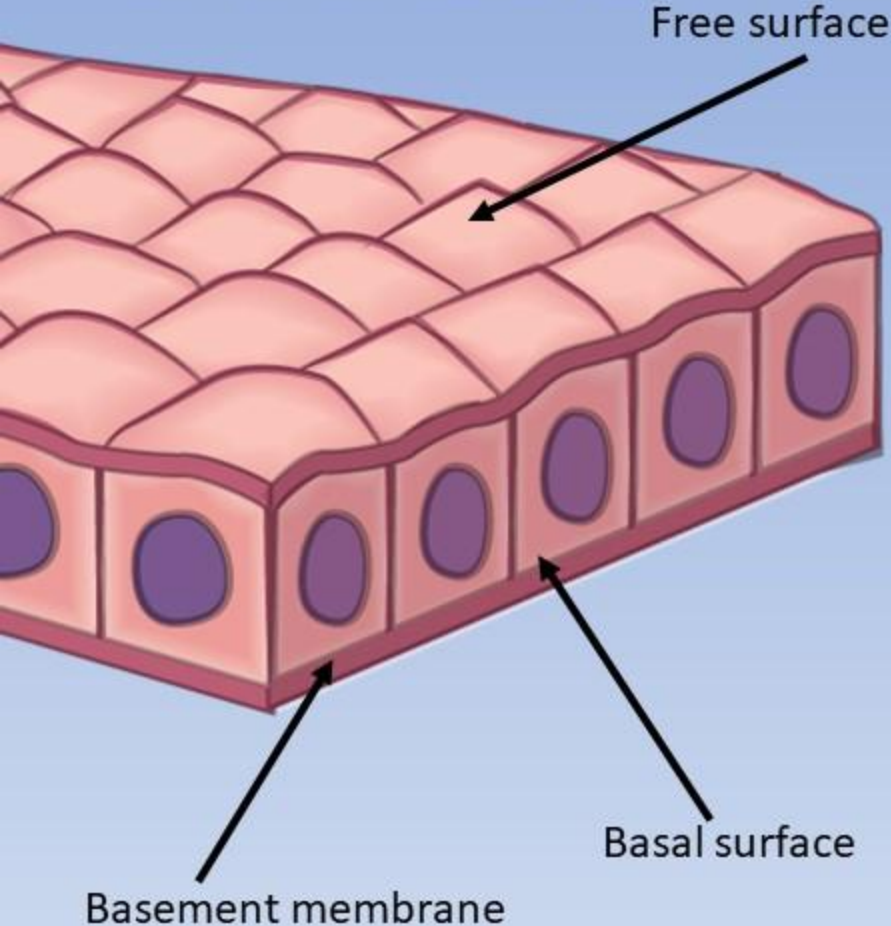
# EPiThelial Tissue Structure



## Characteristics of epithelial tissues:

- Cover and line body surfaces
- Often form sheets with one free surface (apical) surface and an anchored (basal) surface resting on the basement membrane
- Avascular (no blood supply)
- Regenerate easily if well nourished

# EPiThELIAL TISSUE STRUCTURE



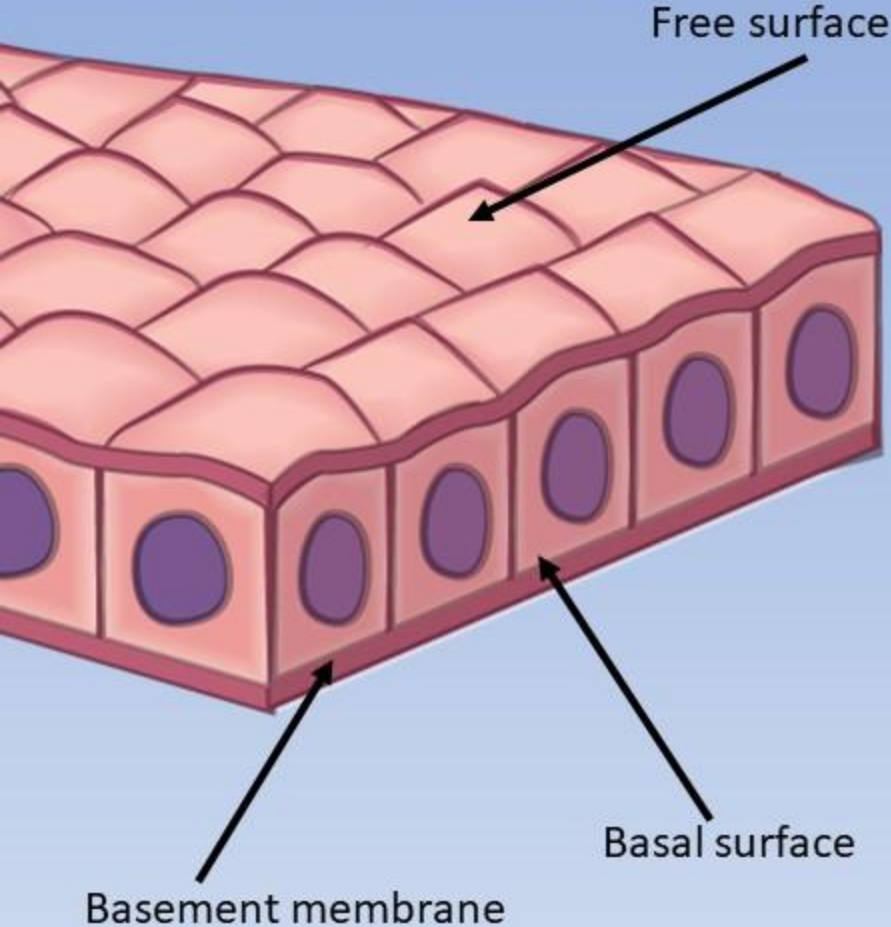
## Locations:

- Body coverings
- Body linings
- Glandular tissue

## Functions:

- Protection
- Absorption
- Filtration
- Secretion

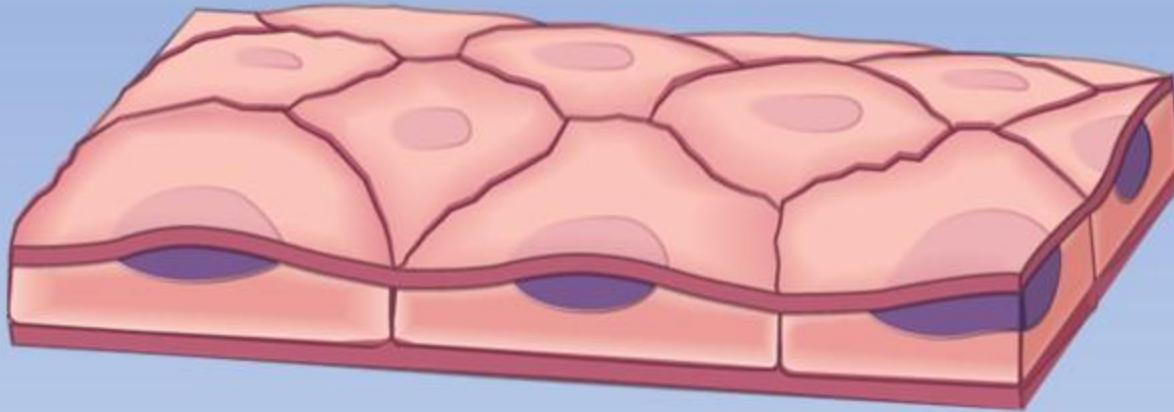
# EPiThelial TISSUE STRUCTURE



## Classification of Epithelial Tissue:

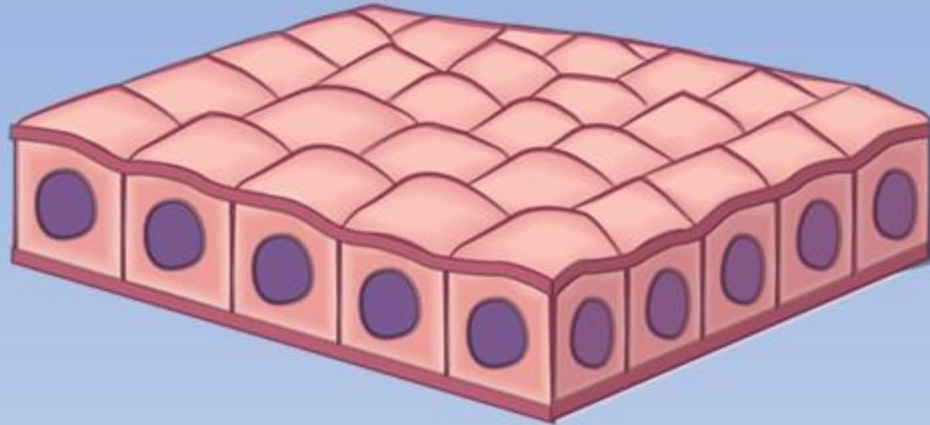
- Number of cell layers
  - Simple—one layer
  - Stratified—more than one layer
- Shape of cells
  - Squamous—flattened
  - Cuboidal—cube-shaped
  - Columnar—shaped like columns

# SIMPLE SQUAMOUS EPITHELIUM



- Structure: Single, flat layer of cells; Thin and permeable
- Function: Rapid diffusion and filtration of materials
- Location: Air sacs of lung tissue; Lining of heart and blood vessels

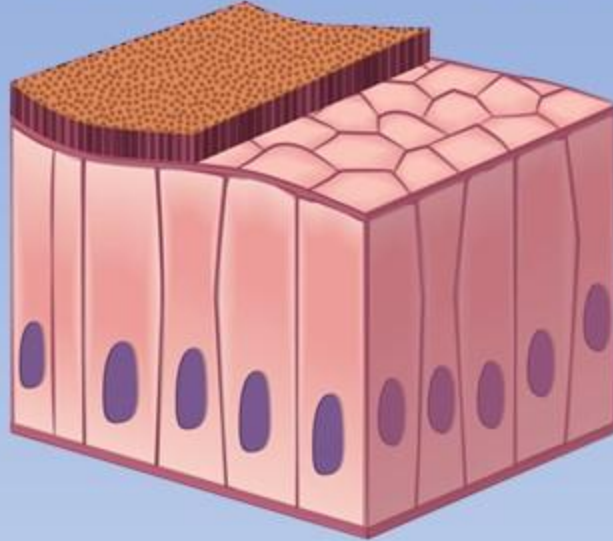
# SIMPLE CUBOIDAL EPITHELIUM



- Structure: Single layer of cube-shaped cells
- Function: Secretion & Absorption
- Location: Tissues of the kidney

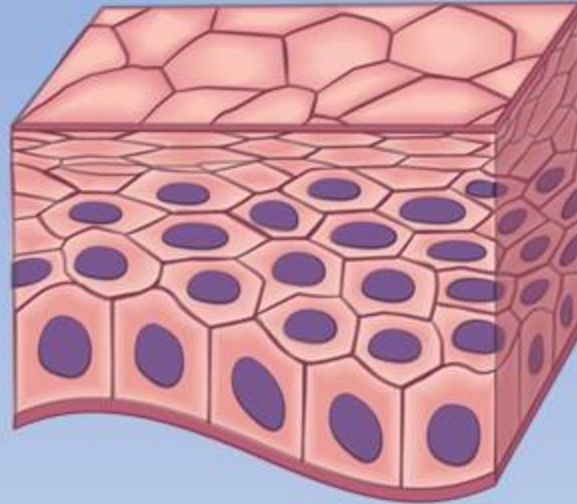


# SIMPLE COLUMNAR EPITHELIUM



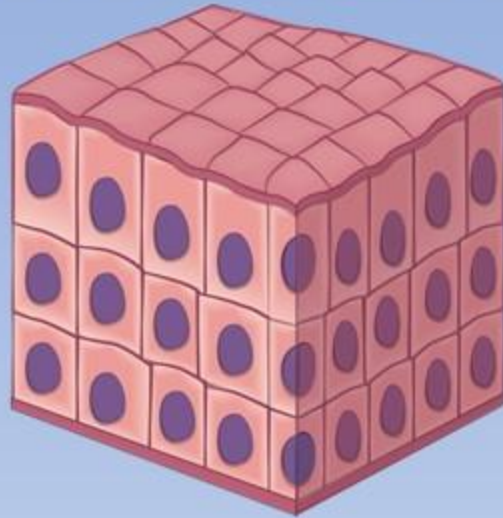
- Structure: Single layer of tall, closely packed cells; May have cilia and goblet cells, which secrete mucus
- Function: Secretion of mucus for protection; Secretion of digestive enzymes
- Location: Lining of the digestive tract; Ducts of small glands

# Stratified Squamous Epithelium



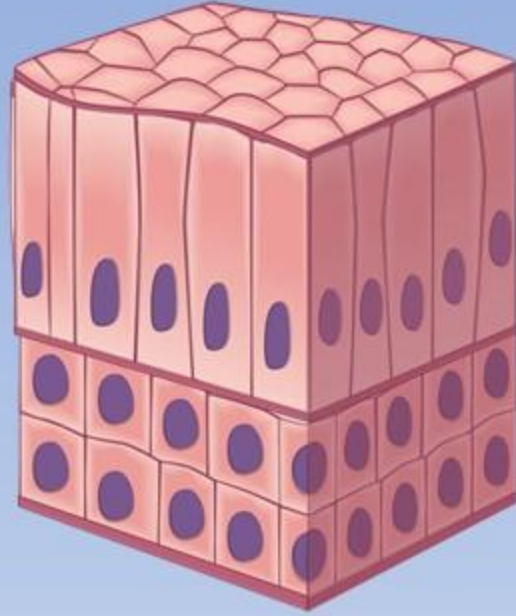
- Structure: Several layers of cells with flattened surface cells
- Function: Provide protection for the underlying layers
- Location: Epidermal layer of the skin; Lining of mouth and esophagus

# Stratified cuboidal epithelium



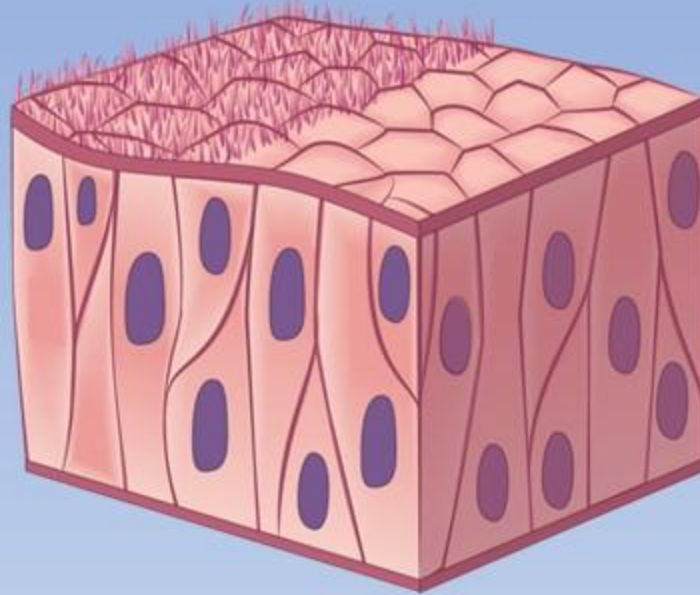
- Structure: Often 2 or more layers of cuboidal cells
- Rare in the body
- Location: Salivary & mammary glands

# Stratified columnar epithelium



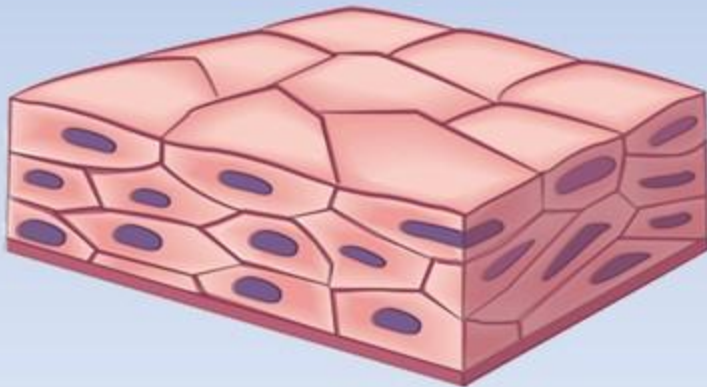
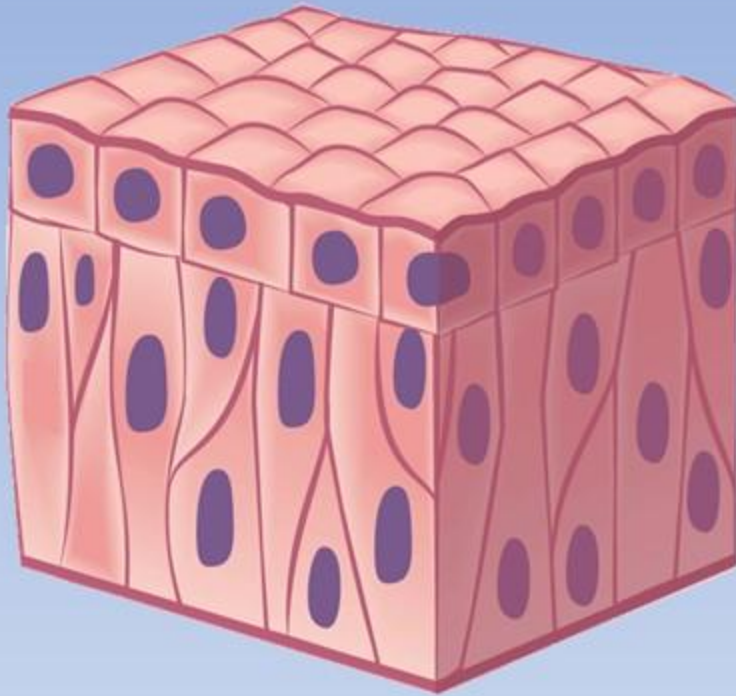
- Structure: Many layers with columnar cells on the free surface
- Rare in the body
- Location: Larynx and the male urethra

# Pseudo-stratified epithelium



- Structure: Cell nuclei are found at different levels, so it appears stratified
- Function: Secretion and propulsion of mucus
- Location: Most of the upper respiratory tract

# Transitional epithelium



- Structure: Free surface cells vary in appearance, based on the stretching of the tissue
- “Transition” = change shape with elasticity
- Location: Lining of the urinary bladder and ureters