

## The first lecture on histology

**Histology:- study of the structure and function of cells, tissues, organs and organ systems.**

**Tissue:** A group of nearly identical cells that specialize in performing a function

**There are four types of tissue**

- 1- Epithelial Tissues
- 2-Connective tissues
- 3-Nervous tissues
- 4-Muscular tissues

### **Epithelial Tissue**

It is a layer of cells that covers the outer surface or lining The inner surface or is in the form of masses of cells that perform the secretory function, called glands.

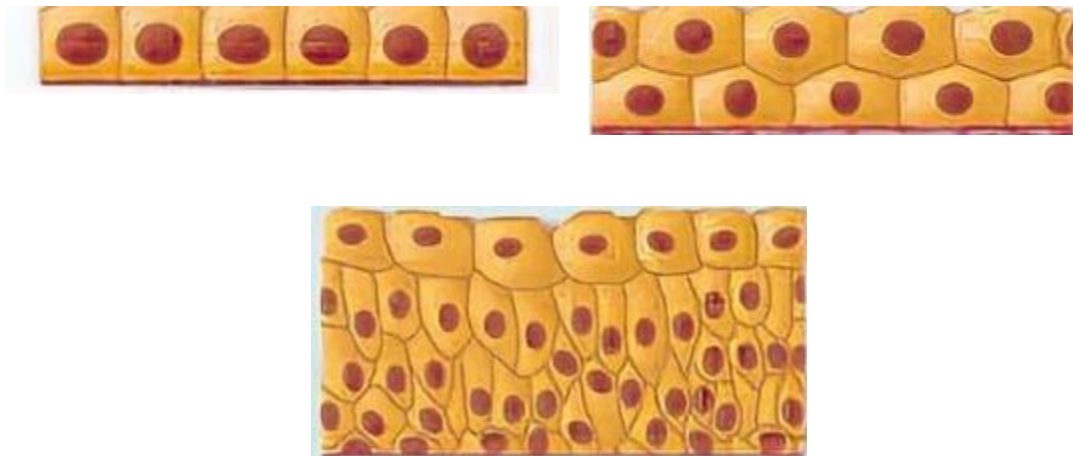
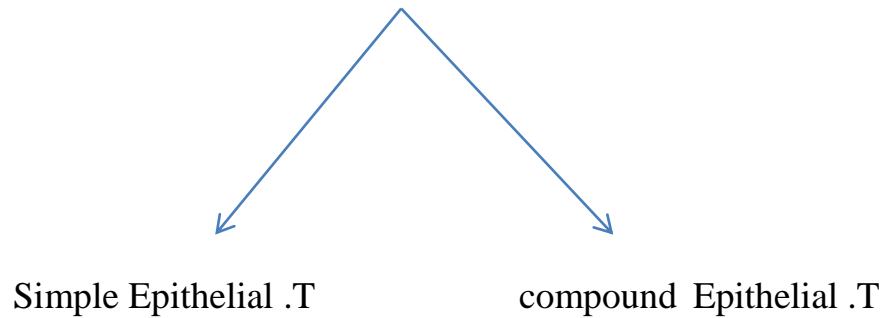
### **\*Functions of epithelial tissue**

- 1- Covering and lining the surface of the body (**Skin, intestines**)
- 2-Absorption (**intestines**)
- 3-Secretion (**gland**)
- 4- Sensation (**olfactory neuropithelium**)

## Classification of epithelial tissues

- 1- Covering or lining epithelial tissues.
- 2- Glandular Tissues.

### The covering or lining epithelial tissues



\*Simple Epithelial .T:- It consists of a single layer of cells

\*compound Epithelial .T:- It consists of more than one layer of cells

### Classification of Simple Epithelial .T

- 1- Squamous Ep. T.
- 2- Cuboidal Ep. T.
- 3- Columnar Ep. T.
- 4- Pseudo stratified columnar Ep. T.

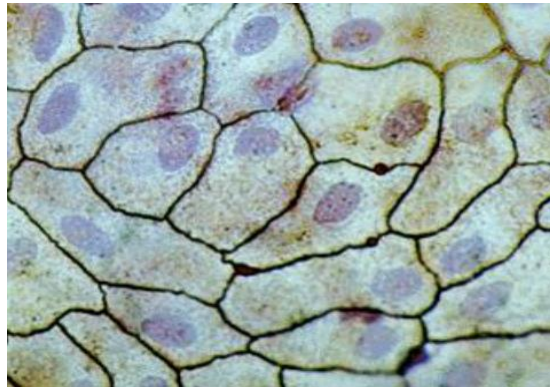
## 1- Squamous Ep. T.

It consists of flat squamous cells with serrated or smooth edges

There are two types

\***Mesothelium**:- It secretes a moist serous substance (**mesentery, peritoneum**)

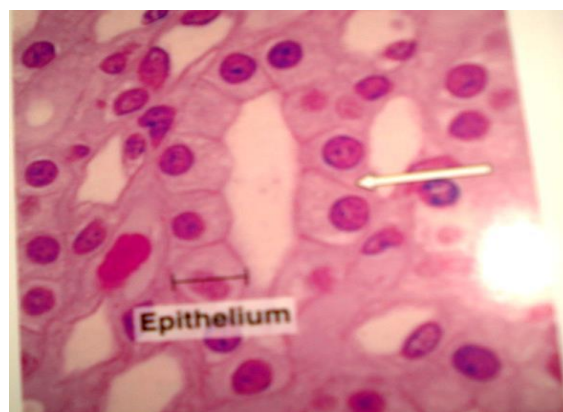
\***Endothelium**:- No moist serous material is secreted(**parietal layer of bowman's, alveoli**)



## 2-Cuboidal Ep. T.

Some cuboidal cells have long microvilli (**Proximal Renal tubule**)

Some cuboidal cells have short microvilli (**distal Renal tubule and collecting tubules**)



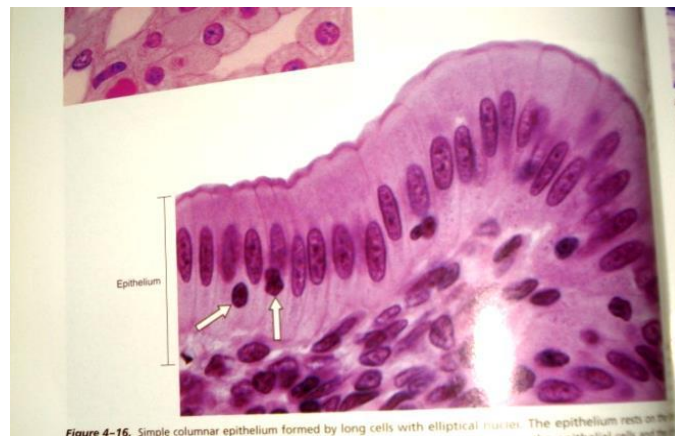
### 3-Columnar Ep. T.

It consists of goblet cells whose function is to secrete mucus

There are two types

\*Ciliated columnar E . T (Uterus, Oviducts,)

\*Non- ciliated columnar E . T (stomach)



### 4-Pseudo stratified columnar Ep. T.

1- It consists several types of cells(Columnar cells, basal cells,)

There are two types

\*Ciliated pseudo stratified columnar Ep. T. (tracheal lining)

\*Non- ciliated pseudo stratified Ep. T.(urethra)



## Classification of compound Epithelial .T

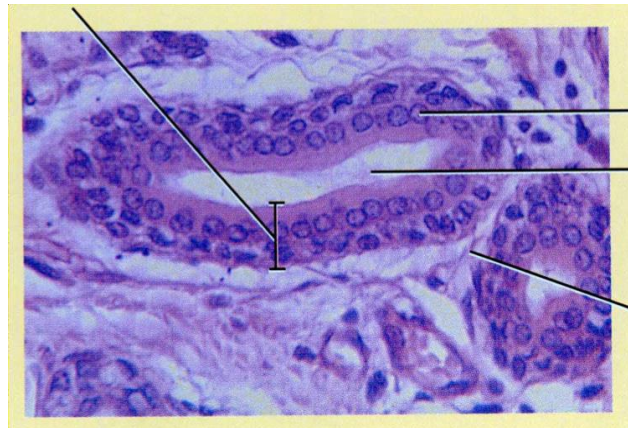
### 1- Stratified squamous Ep. T.

There are two types

- \*Keratinized stratified . S. Ep. T Surface squamous cells are keratinized, dead, and nucleated (Epidermis)
- \*Non- keratinized str. sq . Ep. T. Its surface cells are squamous, non-keratinized, moist, and contain a nucleus (Esophagus, Mouth, Vagina)

### 2- Stratified Cuboidal Ep. T.

(Sweat gland, salivary glands, mammary glands.)



### 3- Stratified columnar Ep. T.

There are two types

- \*Ciliated str. C. (soft palate)
- \*Non- ciliated str. C. (pharynx)

### 4-Transitional Ep. T .

- 1-The large superficial cells are called (dome cells)
- 2- This tissue is found in the (urinary bladder, ureters, and kidney pelvis)

نوع النسيج	الموقع	الوظيفة
<b>Simple squamous E.T</b>	line the serous cavities of the body (peritoneum , pleura , pericardium ).	● <b>Diffusion</b>
<b>Simple cuboidal E.T</b>	distal and collecting tubules  Proximal Renal tubule	● <b>Secretion</b>  ● <b>Absorption</b>
<b>Simple columnar E.T</b>	<b>Uterus, Oviducts</b>  <b>stomach</b>	● <b>Protection</b>  ● <b>Secretion</b>  ● <b>Absorption</b>
<b>Pseudo stratified columnar E.T</b>	(tracheal lining) <b>The lining of the large ducts of the (salivary glands)</b>	● <b>Protection</b>  ● <b>Secretion</b>

نوع النسيج	الموقع	الوظيفة
<b>Stratified squamous E.T</b>	Epidermis ,Mouth, Vagina Esophagus	● <b>Protection</b>
<b>Stratified cuboidal E.T</b>	sweat glands salivary glands mammary glands	● <b>Secretion</b>  ● <b>Protection</b>
<b>Stratified columnar E.T</b>	soft palate  pharynx	● <b>Protection</b>
<b>Transitional Ep. T .</b>	urinary bladder, ureters, and kidney pelvis	● <b>Protection</b>  ● <b>expansion and contraction of organs</b>