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## **Epithelial tissues**

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## Lec . 7

**Tissues:** are groups of cells that are similar in structure and perform many functions including protection, absorption, secretion, movement, electrical impulses, etc.

### Types of tissues

There are four major types of tissues in the body:

- 1- **Epithelial tissues** (covering)
- 2- **Connective tissues** (Support)
- 3- **Muscle tissues** (movement)
- 4- **Nervous tissues** (control)



### Epithelial tissues

**Epithelial tissues** are widespread throughout the body. They form the covering of all body surfaces, line body cavities and are the major tissue in glands. They perform a variety of functions that include protection, secretion, absorption, excretion, filtration, diffusion, and sensory reception.

### **Epithelium Characteristics**

- 1-Epithelial tissues are widespread throughout the body
- 2-They form the covering of all body surfaces, body cavities.
- 3- the major tissues in glands.
- 4- They perform a variety of functions that include **Protection** (skin), **absorption** (intestines), **secretion** (endocrine and exocrine glands), **excretion** (as in the case of sweat glands and kidneys), **reproduction** (testes and ovaries).
- 5-Epithelial cells have the ability to regenerate through mitosis to replace cells that are damaged as a result of performing various functions.

The epithelial tissues are divided into two types:

- 1- Simple Epithelial Tissues (consists of a single layer of cells)
- 2- Stratified epithelial Tissues (consists of two or more layers of cells)

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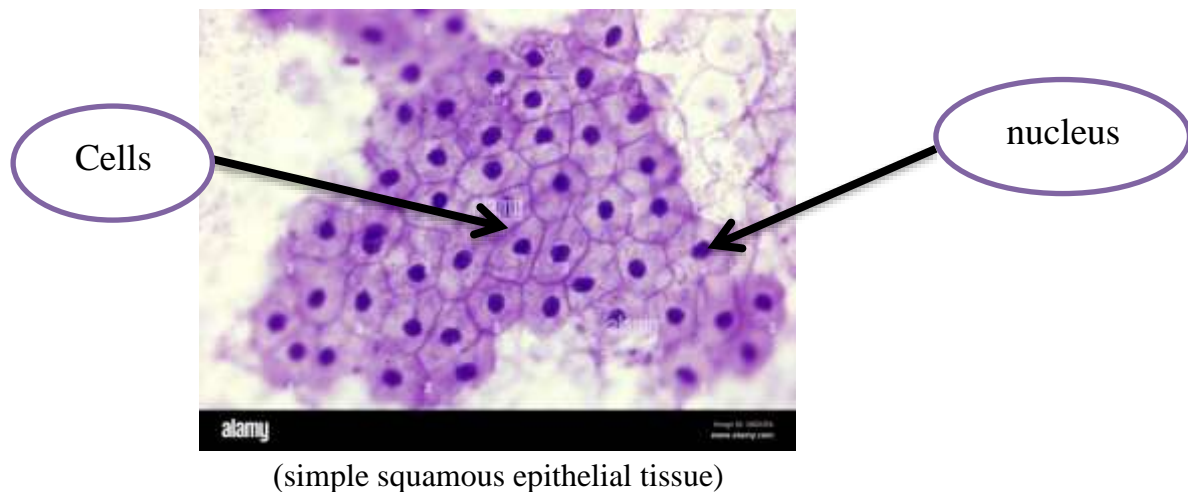
### simple epithelial tissues

#### 1- simple squamous epithelial tissue

**cell shape:** cells are very thin, similar to fish scales(irregular edges)

**The nucleus:** central and large.

**Location and function:** often found in the lungs, and blood vessels(help in the transport process) and the complex type is found in the vagina, esophagus, and mouth (plays an important role in protection).

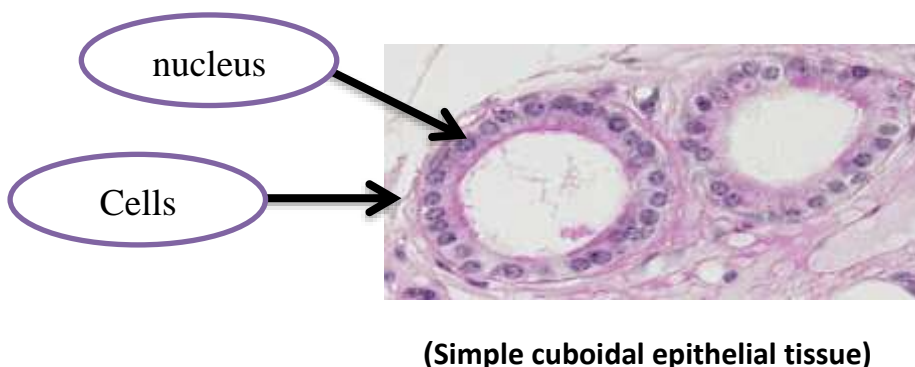


#### 2- Simple cuboidal epithelial tissue

**cell shape:** consisting of a single layer of cuboidal (cube-like) cells.

**The nucleus:** large, spherical, and central

**Location and function:** often found in the kidney tubes, and some gland ducts, as it plays an important role in excretion and absorption.



## Lec . 7

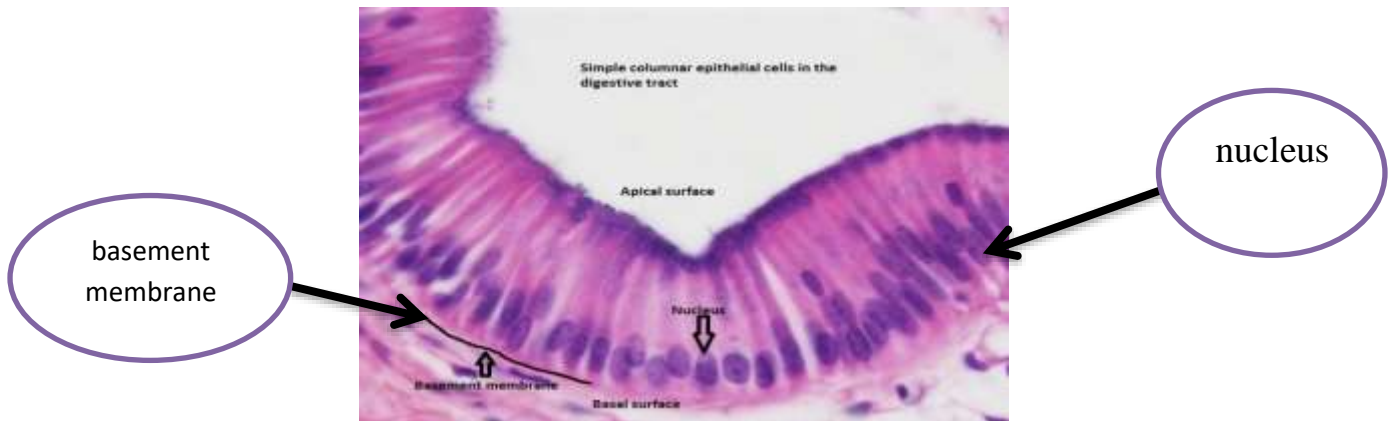
### 3- Simple columnar epithelium

#### A- non-ciliated columnar epithelium

**cell shape:** The cells have a vertical shape.

**The nucleus:** is oval and basal.

**Location and function:** found in the digestive tract, uterus, and others to assist in the absorption process.



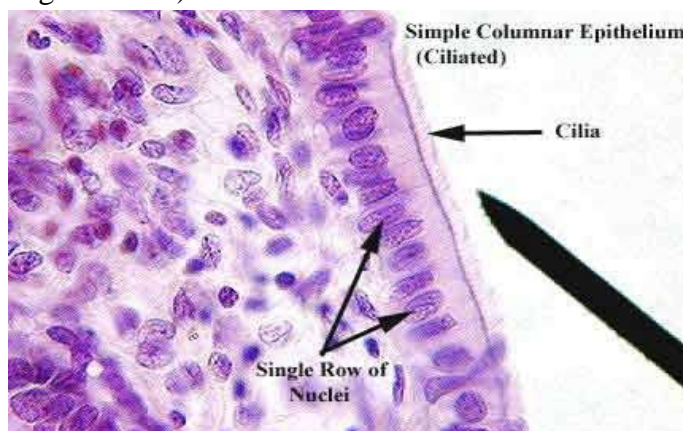
(non-ciliated columnar epithelium)

#### B- Ciliated columnar epithelial

**cell shape:** The cells are columnar and contain cilia at their apex.

**The nucleus:** is oval and basal.

**Location and function:** found mainly in the **tracheal and bronchial** regions of the respiratory system and also in the fallopian tubes of the female reproductive system (**cilia** work with goblet cells to propel mucus from the lungs, preventing particulate matter from causing infection) .



(Ciliated columnar epithelial)