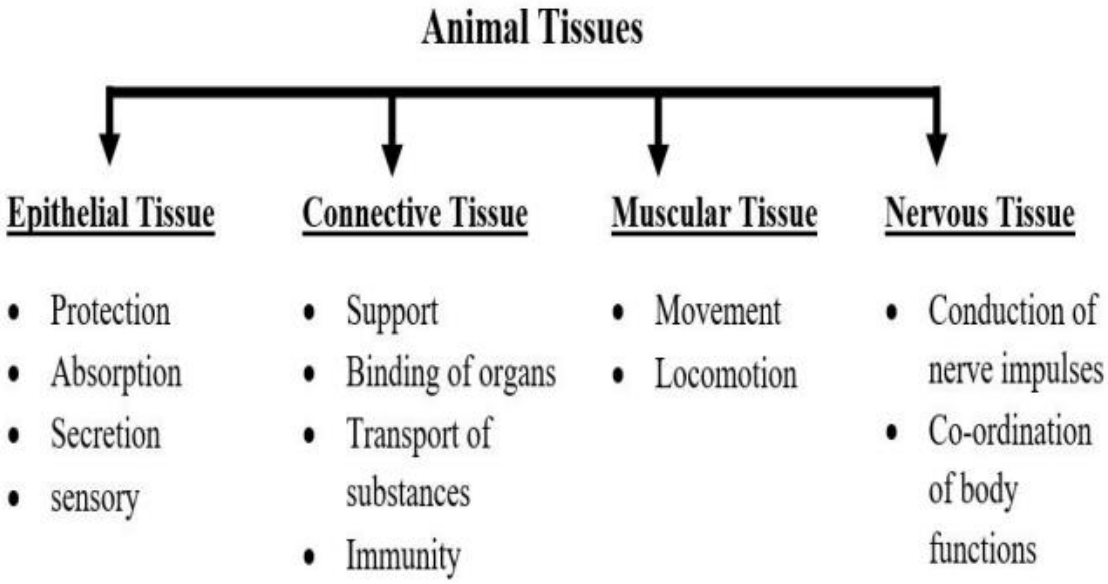
# Types of Animal Tissues

An animal's body is built of differentiated cells as well as stem cell that retain the potential to divide and yield specialized cells.

- Groups of cells with a common structure and function make up tissues.
- Different tissues make up organs, which together make up organ systems.

**Tissue :** A group of cells similar in structure, function and origin.

In a tissue cells may be dissimilar in structure and function but they are always similar in origin.




## 1- Epithelial Tissue:

Word epithelium is composed of two words Epi – Upon, Thelio – grows. A tissue which grows upon another tissue is called Epithelium.

– Cells are either single layered or multilayered.

– Cells are compactly arranged and there is no intercellular matrix.

– Cells of lowermost layer always rest on a non-living basement membrane.

– Cells are capable of division and regeneration throughout the life.

– Free surface of the cells may have fine hair cilia or microvilli or may be smooth.

– Epithelial tissue is non-vascularized.

Due to absence/less of intercellular spaces blood vessels, lymph vessels are unable to pierce this tissue so blood circulation is absent in epithelium. Hence cells depend for their nutrients on underlying connective tissue.

Between epithelium & connective tissue, a thin non-living acellular basement membrane is present which is highly permeable.

- There are two types of epithelial tissues:
- Simple Epithelium and Compound Epithelium.

**SIMPLE EPITHELIUM:**

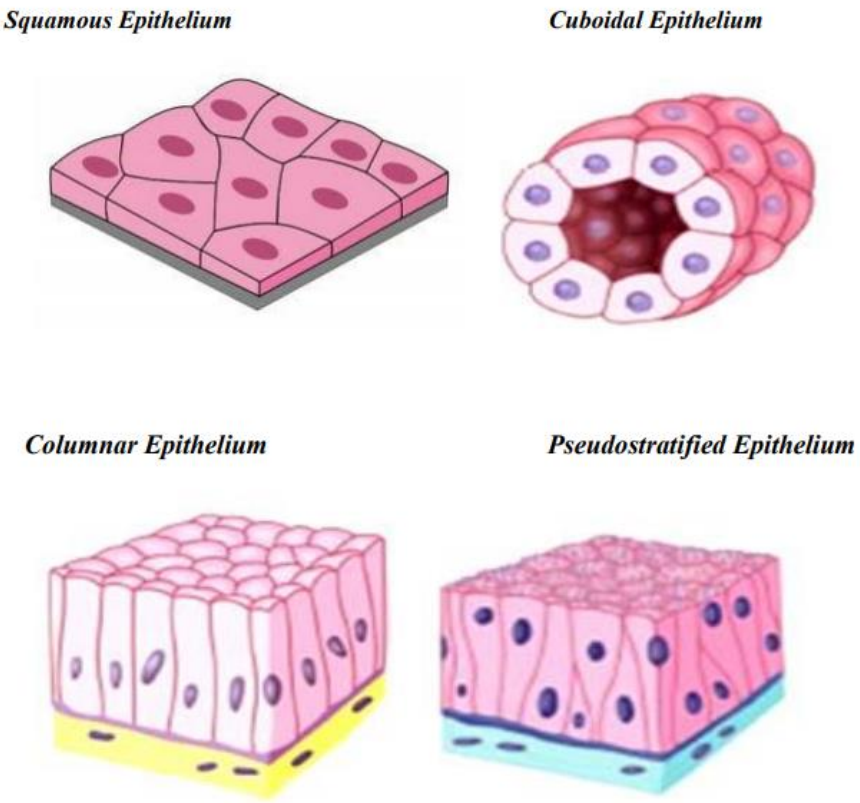
- It is usually composed of a single layer of cells.
- They are found in the lining of body cavities, ducts and tubes.
- simple epithelium is divided into:

- Squamous epithelium

- Cuboidal epithelium

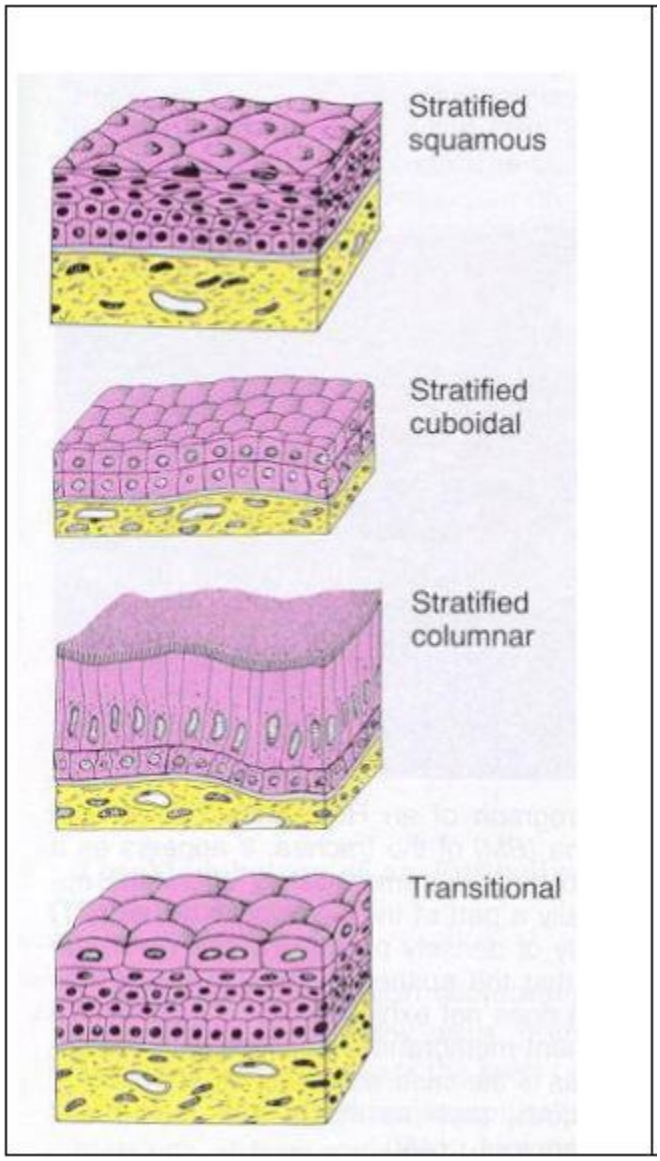
- Columnar epithelium

- Pseudo-stratified epithelium




## STRATIFIED EPITHELIUM:

A stratified epithelium consists of several layers of cells:




## 2- CONNECTIVE TISSUE :

All connective Tissue in the body are developed from Mesoderm.

Only connective Tissue constituted 30% of total body weight. (Muscle – 50%, Epithelium – 10% Nervous – 10%).

Function of the connective tissue:

1- Fill spaces.
2- Attach epithelium to other tissues.

3- Protect and cushion organs.
4- Provide mechanical support.

**– On the basis of matrix connective tissue is of 3 types:**

1. Connective Tissue Proper – Matrix soft and fibrous

2. Connective Tissue Skeleton – Dense and mineralized matrix. Due to deposition of minerals it becomes hard.

3. Connective tissue Vascular – Liquid and fibers free matrix