# Tissues

**Tissue:** a group of cells with similar structures functioning together as a unit.

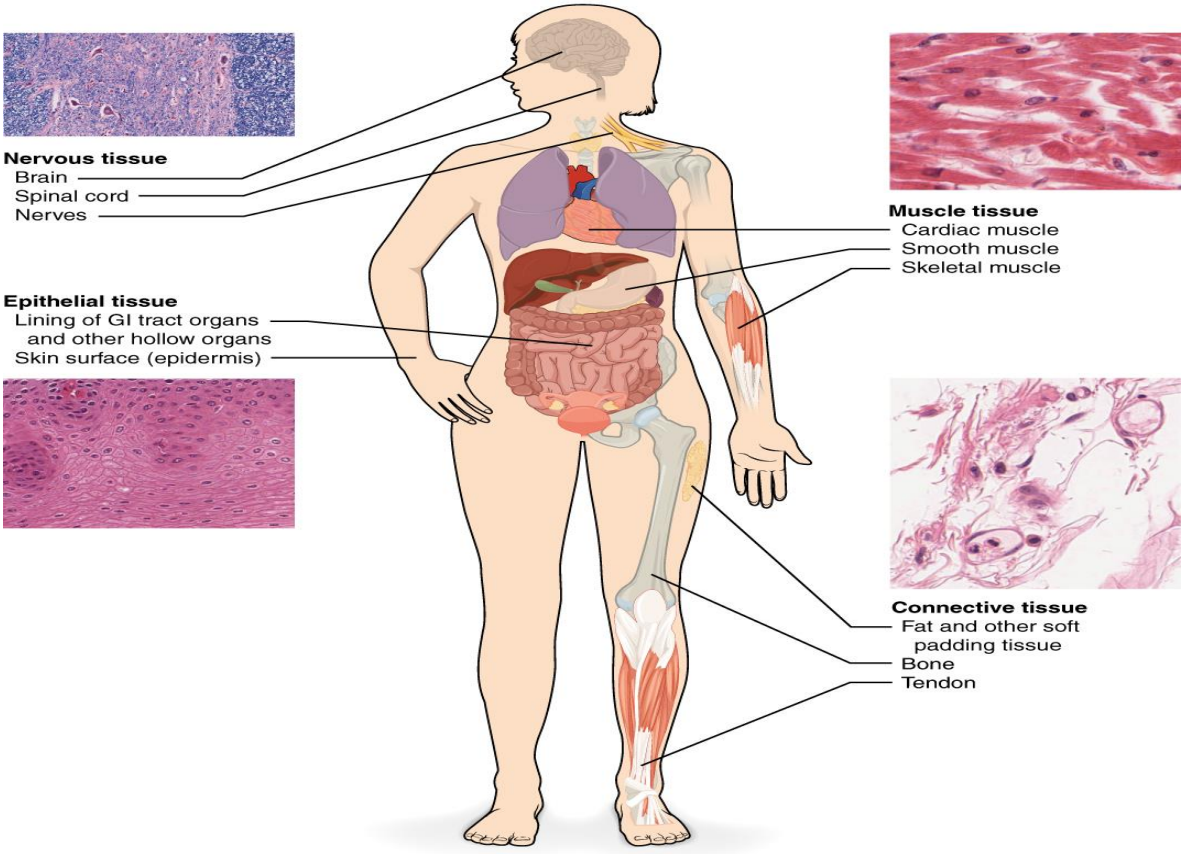
➢ **There are four main tissue types in the body:**

**1- Epithelial tissue**

**2- Connective tissue**

**3- Muscular tissue**

**4- Nervous tissue**




**1- Epithelial tissue:** consists of tightly packed sheets of cells that **cover** surfaces—including the outside of the body—and **line** body cavities. For instance, the outer layer of your skin is an epithelial tissue, and so is the lining of your small intestine.

Two major characteristics of epithelial tissue divide it into subclasses: the **shape** of the cells and the presence of **layers**.

## Shapes of cells:

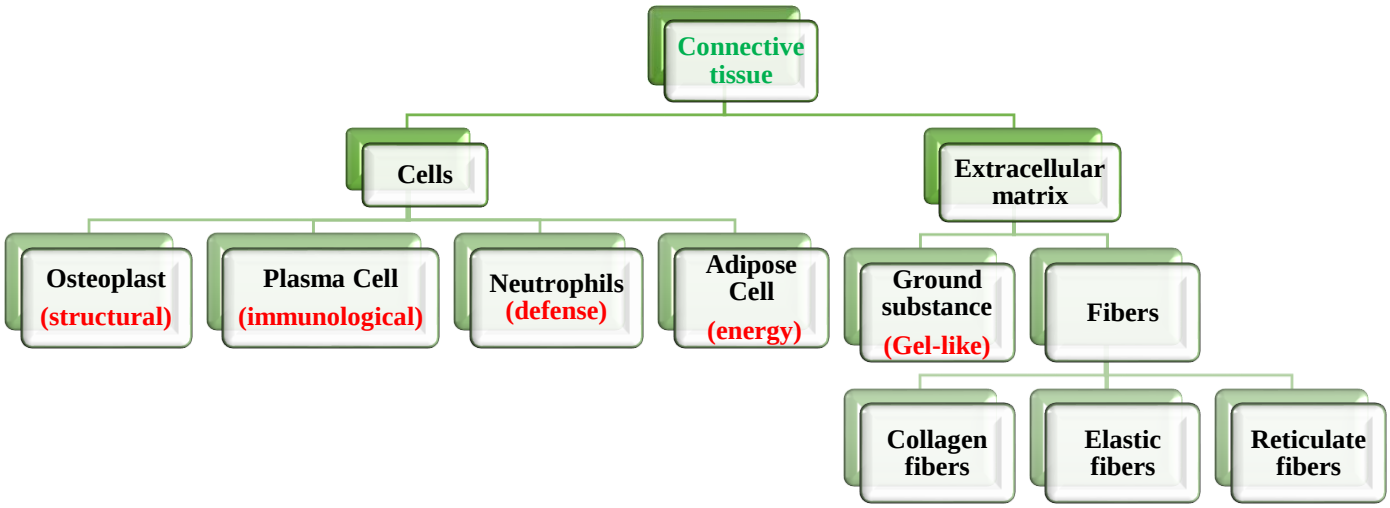
Squamous cells | Cuboidal cells | Columnar cells

## Layers:



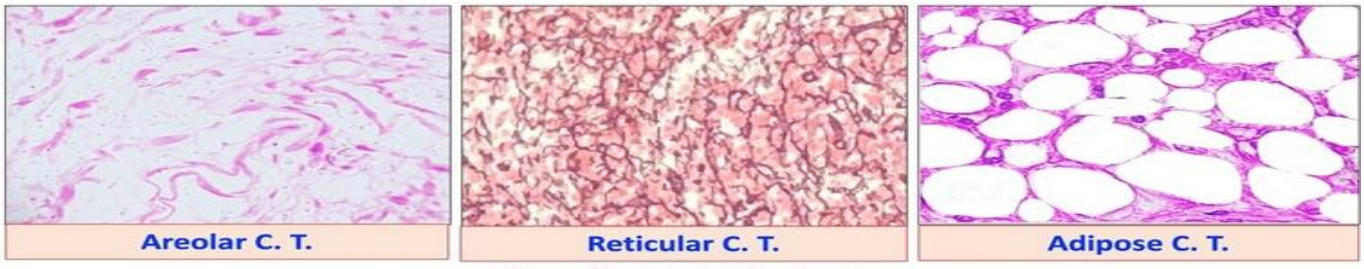

- **Simple Epithelium:** it is composed of one layer of a cell that has a secretory or an absorptive function.
- **Compound (Stratified) Epithelium:** It comprises two or more layers of cells and has a protective function.

2- **Connective tissue:** is the most abundant tissue type in the body. In general, connective tissue consists of **cells** and an **extracellular matrix**. The **extracellular matrix** is made up of a ground substance and protein fibers.

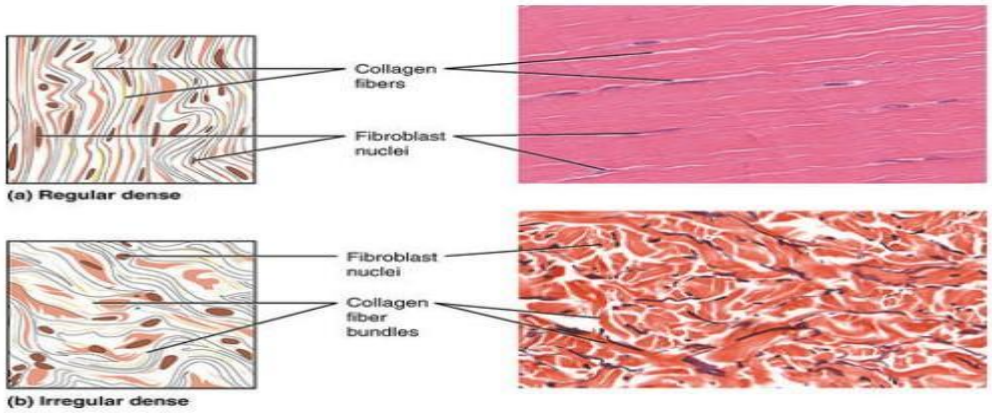



## • Proper connective tissue:

1. **Loose Connective Tissue:** **Areolar**, **Adipose**, and **Reticular tissue.**
2. **Dense Connective Tissue:** **Regular** and **Irregular** tissue.

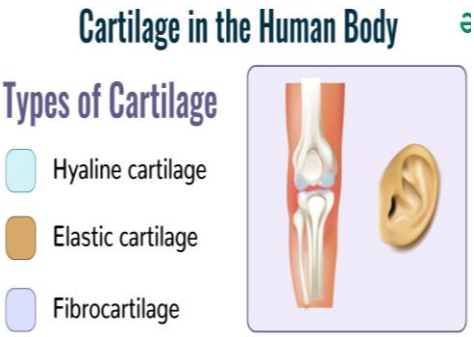



Types of loose connective tissues




## • Specialized connective tissues:

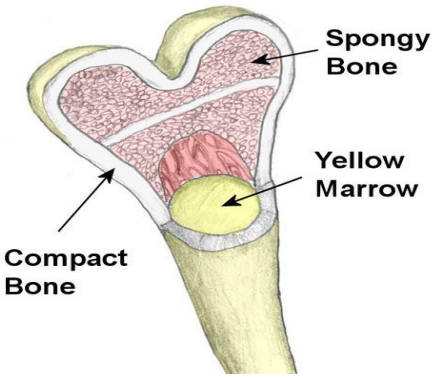
1. **Cartilage:** is a strong, flexible connective tissue that protects joints and bones. There are three types of cartilage in your body:

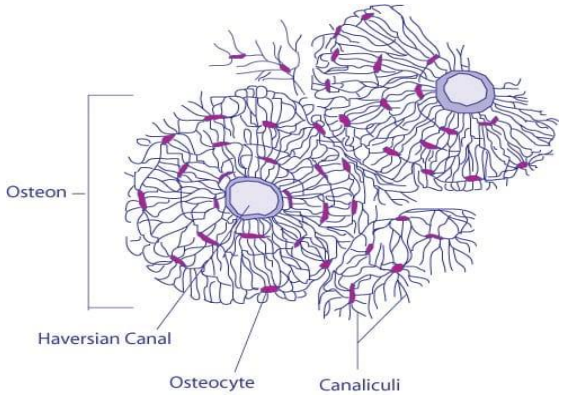



- Hyaline cartilage.
- Elastic cartilage.
- Fibrocartilage.

2. **Bone:** is a mineralized connective tissue that exhibits the cells of the bone known as **osteocytes**. There are two types of bone:

- Sponge Bone
- Compact Bone



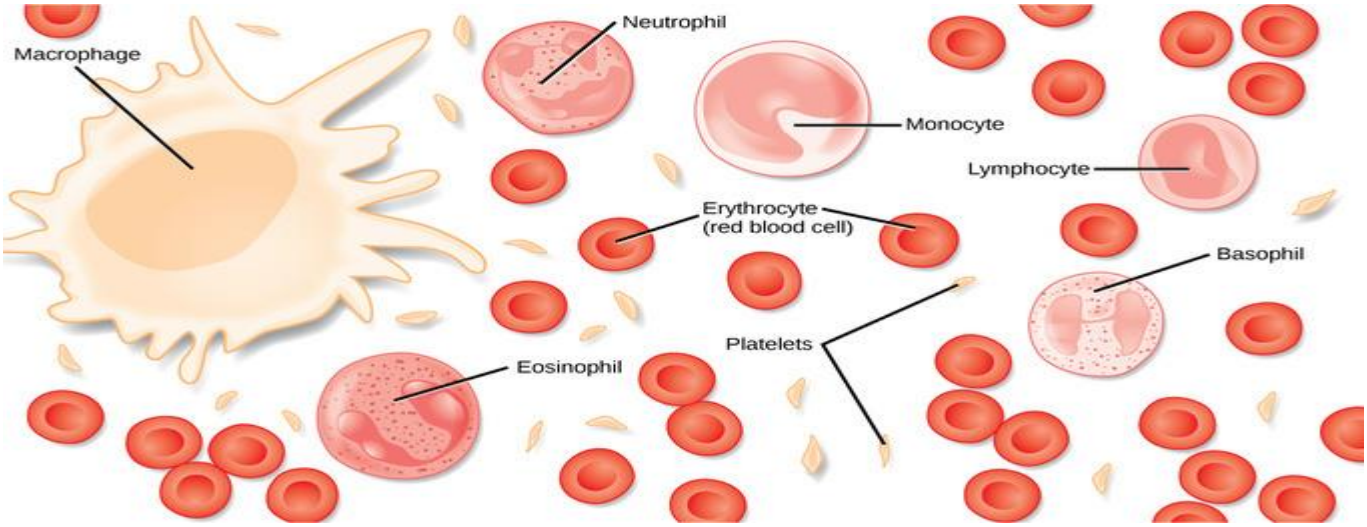

3. **Blood** is made up of various cells present in the **plasma**. It contains red blood cells (**RBCs**), white blood cells (**WBCs**), and platelets.

The components of blood:

- **Erythrocytes:** lose their nuclei and mitochondria when they are released from the bone marrow
- **Leukocyte:** **Granulocytes** are neutrophils, eosinophils, and basophils.

**Agranulocytes** are lymphocytes and monocytes.

- **Platelet or thrombocyte:** participates in the stages leading up to coagulation of the blood to stop bleeding through damaged blood vessels.




4. **Lymph:** contains a liquid matrix and **WBCs** or **lymphocytes,** which help fight infection.