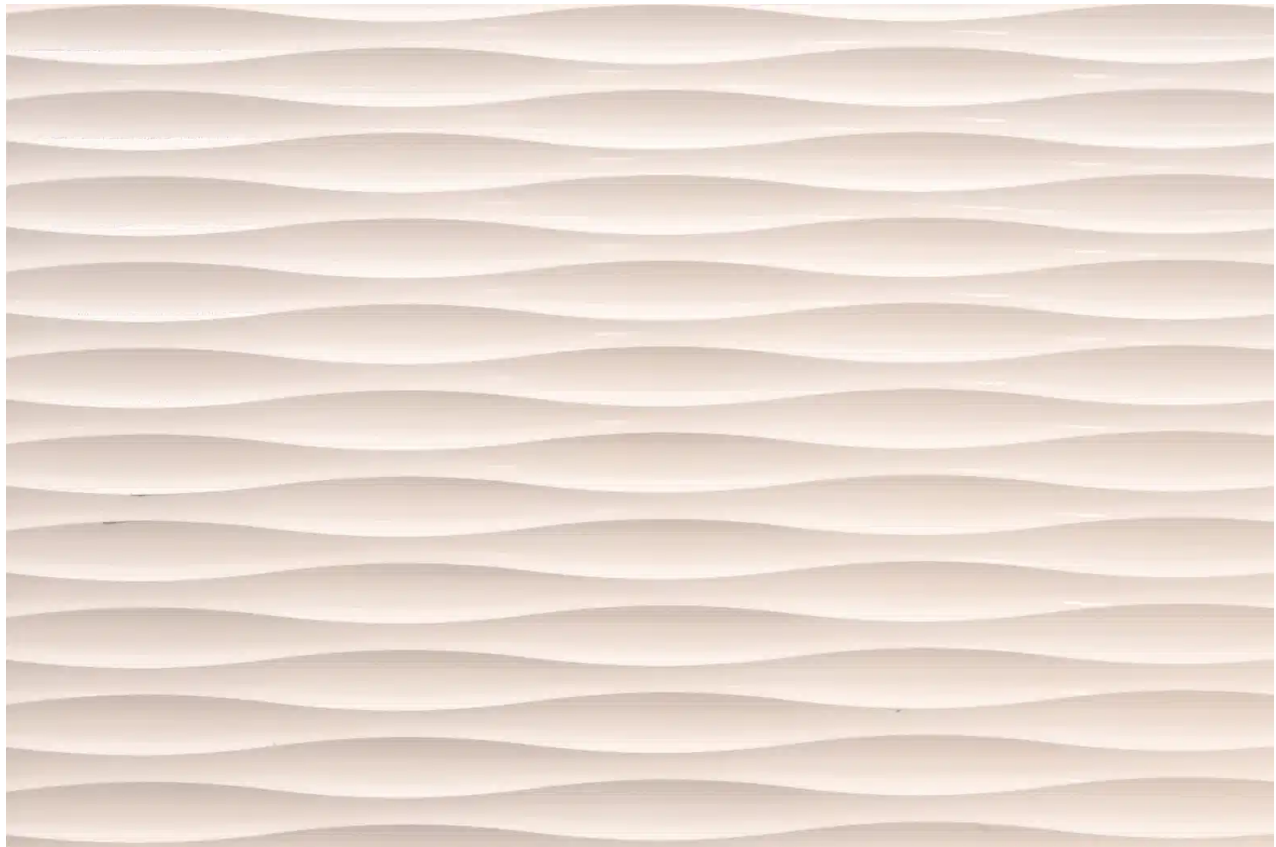




## Priya's Learning Centre

# Animal Tissues



**Based on their functions, animal tissues can be classified as:**

1. Epithelial Tissue
2. Connective Tissue

3. Muscular Tissue
4. Nervous Tissue

### Epithelial Tissues:

- They are the covering or protective tissues in the animal body.
- It covers most of the organs and cavities in the animal body.
- It also forms a barrier to keep the organs separate.
- The skin, the lining of mouth, the lining of blood vessels, lung alveoli and kidney tubules are made up of epithelial tissues.
- They are tightly packed with almost no intercellular space between them.

**Based on their functions, different epithelia show different structures. They can be classified as:**

1. **Simple squamous epithelium** – It is a simple flat kind of epithelium. It is found in cells lining blood vessels, lungs alveoli, lining of mouth and oesophagus.
2. **Stratified squamous epithelium** – They are arranged in a pattern of layers to prevent wear and tear. They are found in the skin.
3. **Columnar epithelium** – It is tall, pillar-like epithelium. It is present in the inner lining of intestines.
4. **Ciliated Columnar Epithelium** – Some columnar epithelial tissues have hair like structures called cilia. The movement of cilia can move mucus.
5. **Cuboidal Epithelium** – It has cube shaped cells. It forms the lining of kidney tubules and ducts of salivary glands.
6. **Glandular Epithelium** – Sometimes, a portion of the epithelium tissue folds inward, and a multicellular gland is formed. This is known as 'Glandular Epithelium'.

### Connective Tissue:

- The cells are loosely packed and embedded in an intercellular matrix.
- The matrix can be jelly like, fluid, dense or rigid.
- The nature of matrix depends on the function of that particular connective tissue.

**Connective Tissues can be classified as:**

1. **Blood** – It has a fluid matrix called plasma. Plasma contains salts, proteins and hormones.
2. **Bone** – It is strong and non-flexible. The cells are embedded in a hard matrix made up of calcium and phosphorous.
3. **Ligament** – It is elastic and has considerable strength. It contains very little matrix.
4. **Tendons** – It is fibrous tissue with great strength but limited flexibility.
5. **Cartilage** – It is a solid matrix composed of proteins and sugars.
6. **Areolar connective tissue** – It fills the space inside the organs, supports internal organs and helps in repair of tissues.
7. **Adipose tissue** – The cells are filled with fat globules.

### Muscular Tissue:

- It consists of elongated cells called muscle fibres.
- Muscles contain special proteins called contractile proteins, which contract and relax to cause movement.

### Types of Muscular Tissues:

1. **Striated Muscles** – The cells are long, cylindrical, unbranched and multinucleate. They are also called voluntary muscles or skeletal muscles.
2. **Unstriated Muscles** – The cells are long with pointed ends and uninucleate. They are found in iris, ureters, bronchi of the lungs, etc.
3. **Cardiac Muscles** – These are found in heart. These heart muscles are cylindrical, branched and uninucleate.

### Nervous Tissues:

- The cells of these tissues are called nerve cells or neurons.
- A neuron consists of nucleus and cytoplasm.
- Each neuron has a single, long part called axon and many branched parts are called dendrites.
- The brain, spinal cord and nerves are composed of nervous tissues.
- They are specialised in responding to stimuli.