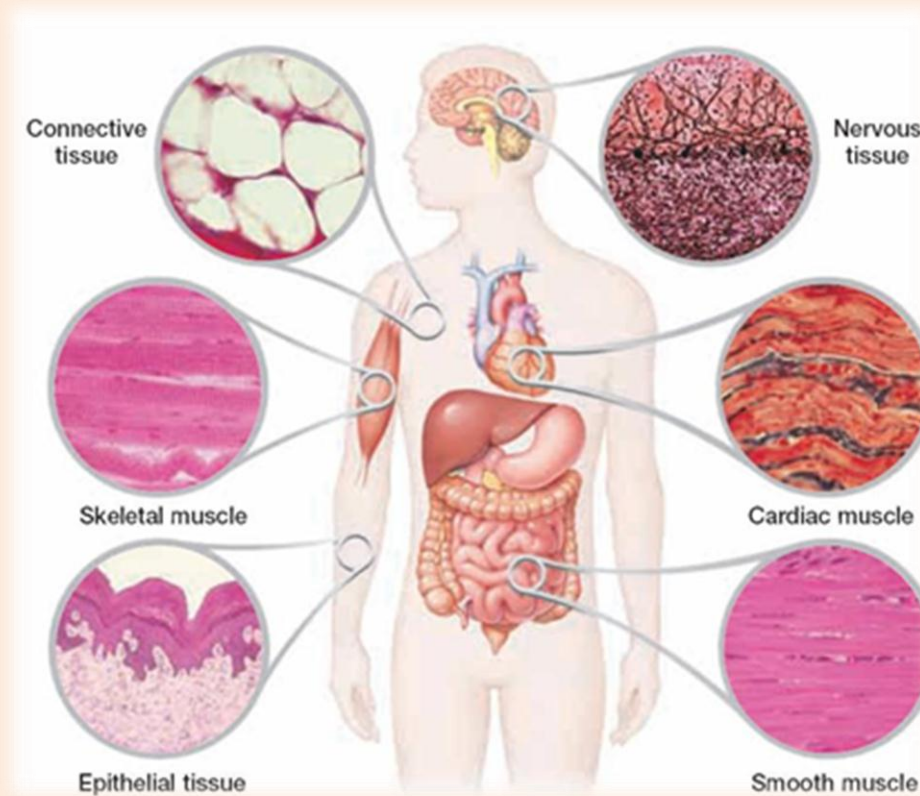


ANIMAL TISSUES

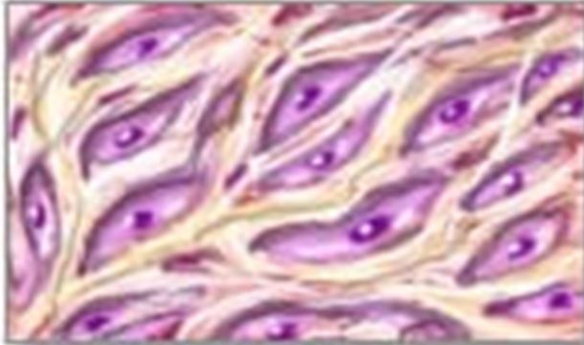


The **structure** of animal tissue is directly related to its **function**.

Animals have groups of cells in the tissue, which are combined together to perform as an organ.

Tissues are groups of cells with a basic structure and function.

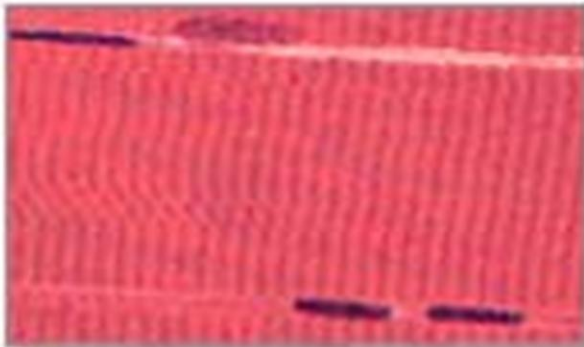
There are four major types of tissues:



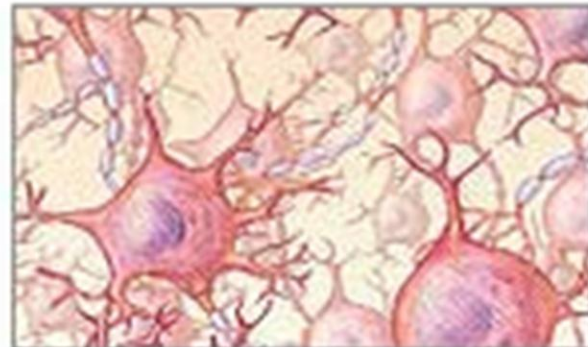
Connective tissue



Epithelial tissue



Muscle tissue



Nervous tissue

Epithelial tissue



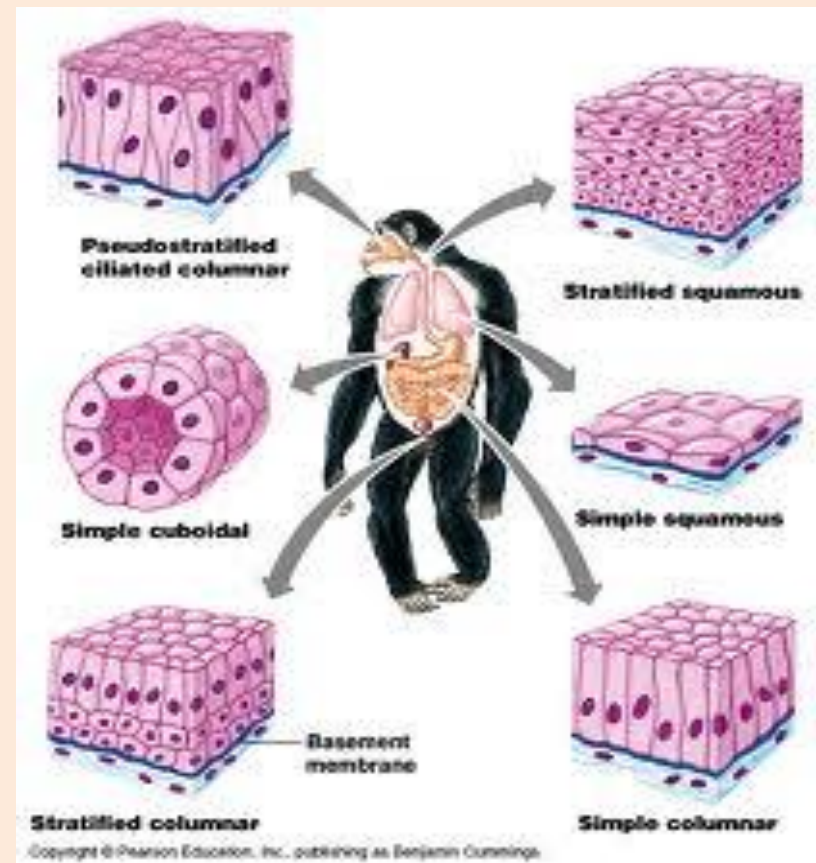
Is a tissue that is made up of tightly packed cells that **line organs and body cavities**. Its cells are closely joined without much material between them.

It acts as a **barrier** against mechanical injury, invading microorganisms, and fluid loss.

Epithelial tissue can be classified considering two criteria: the number of cell layers and the shape of the cells on the free surface.

Types:

- Simple epithelium
- Stratified epithelium
- Pseudostratified
- Cubiodal
- Columnar
- Squamous.



Connective tissue

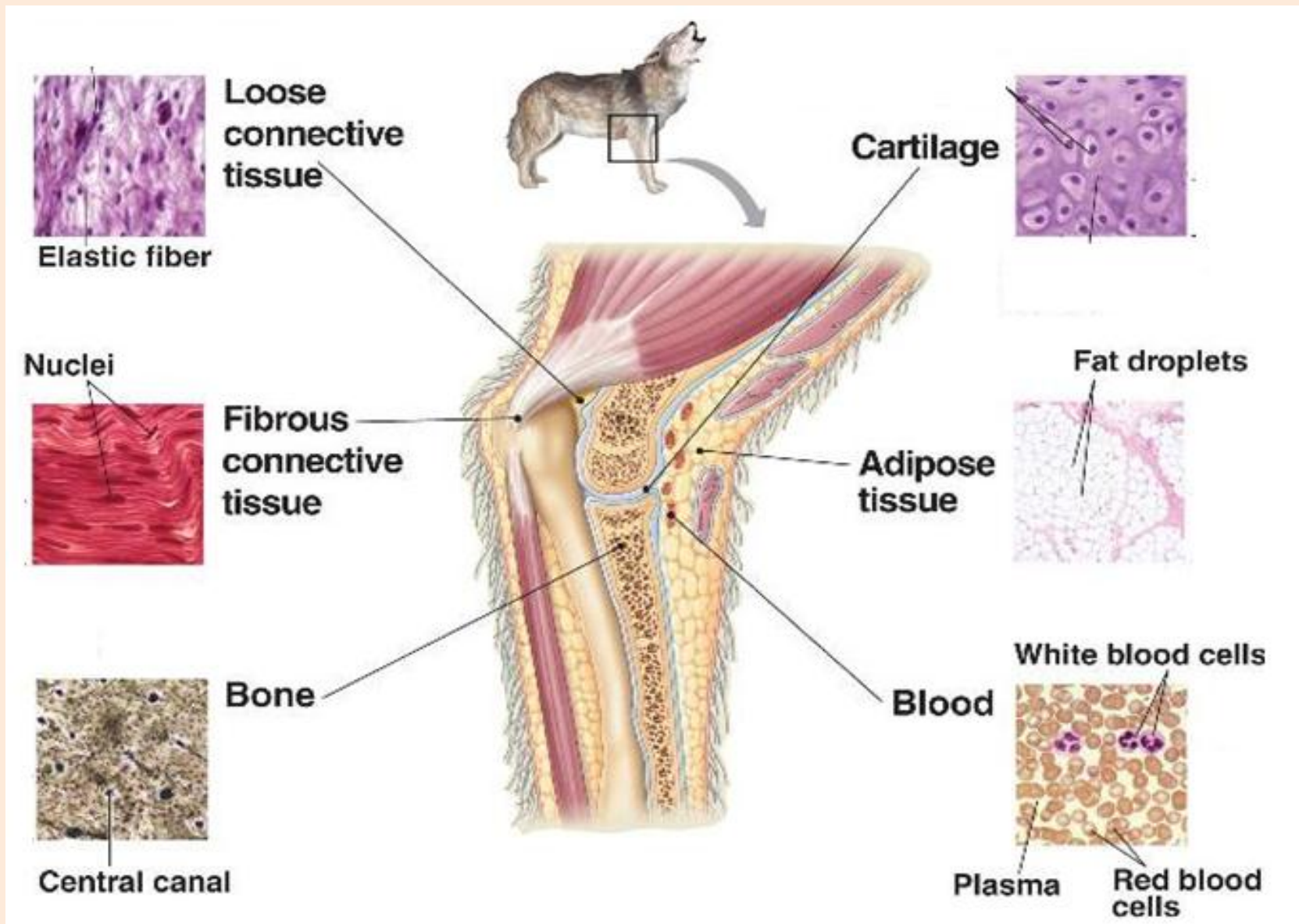


Tissue that works mainly to **bind** and **support** other tissues.

They have sparse populations of cells scattered through an extracellular matrix. This extracellular matrix is a web of fibers that can be liquid, solid or jellylike.

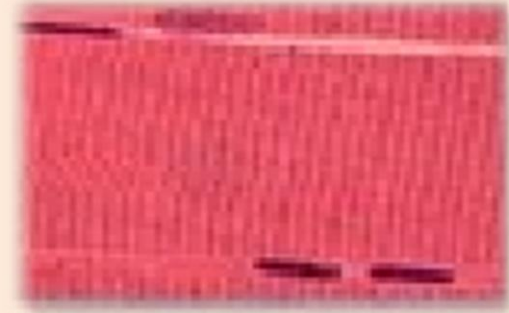
There are a few major types of connective tissue.

- **Loose** (Wraps and cushions organs. Under the skin)
- **Adipose** (Function as storage)
- **Dense** (Tendons and ligaments)
- **Cartilage** (example: ends of bones and nose)
- **Bone** (Solid because of the Calcium carbonate. Has blood supply and nerves running through the Haversian canal systems).
- **Blood** (Liquid, contains red blood cells, white blood cells and platelets)



Muscle tissue

Is made up of long, excitable cells that are capable of considerable contraction. These are arranged in a parallel pattern.

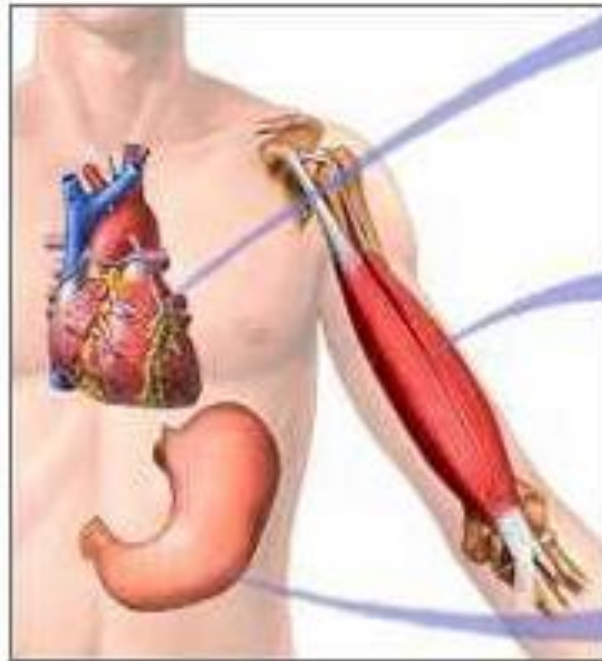


There are a large number of microfilaments that are made of contractile proteins actin and myosin.

Since this is needed for **movement** it is one of the most abundant tissues in most animals.

There are three types of muscle tissue:

- Skeletal muscle, which is normally responsible for the **voluntary movement** in the body.
- Cardiac muscle that forms the wall of the heart. This muscle relays signals from cell to cell during a heartbeat.
- Smooth muscle which is found in the digestive track, bladder, arteries, and other internal organs. **Involuntary movement**.



Cardiac muscle cell

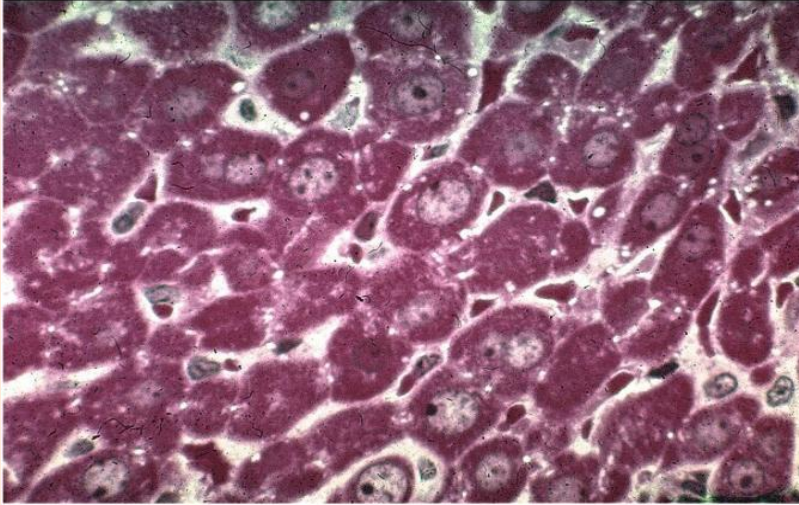


Skeletal muscle cell

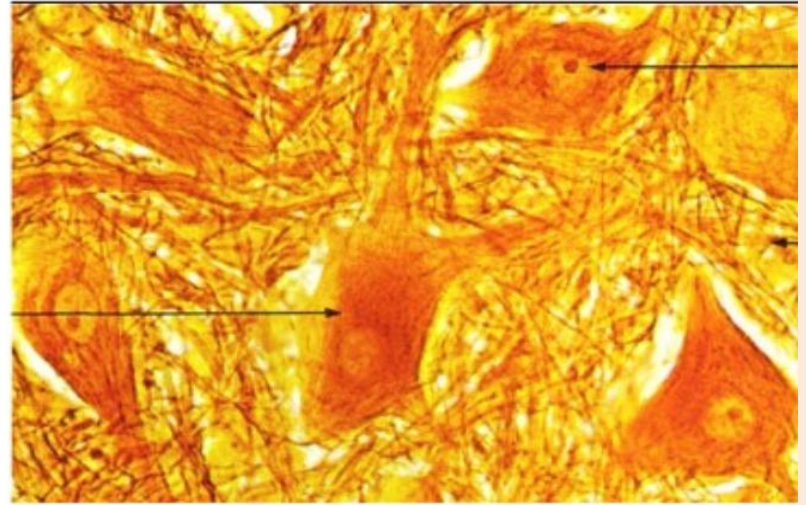


Smooth muscle cell

Some tissues



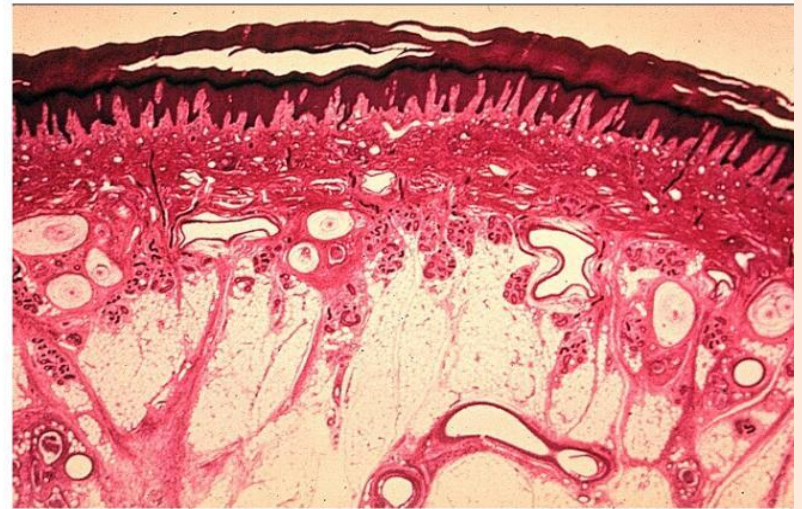
Liver



Brain



Lymphocyte and RBC's



Skin