

- Skeletal muscle: voluntary. Attached by tendons to bones. Cylindrical and long. Several cells fuse => multiple nuclei at periphery of muscle. Fibers alternating dark and light bands due to placement of actin and myosin => striped appearance.
- Smooth muscles: no striations. One nucleus per spindle-shaped cell. Involuntary. In walls of viscera like intestine, bladder... (visceral muscle). Slower than skeletal but withstands more contraction time.
- Cardiac muscle: found only in heart. Between smooth and skeletal. Has striations but is involuntary. Single central nucleus. Cells are branched and seemingly fused. Bound end to end by intercalated disks (adhesion and gap junctions).

Nervous tissue:

Made of neurons and neuroglia (support and nourish neurons). Function: sensory input, integration of data and motor output.

- Neurons: made of dendrites (extension that receives input from other cells), cell body (nucleus and most cytoplasm) and axon (extension that conducts impulses). Axons covered by myelin, white fatty substance. Fiber = axon + myelin sheath.
- Neuroglia: x9 than neurons. More than half the volume of brain. Might communicate with neurons and themselves even without extensions. Ex:
 - o Microglia: also engulfs bacteria and cellular debris
 - o Astrocytes: also produce GDNF (glial-derived neurotrophic factor)
 - o Oligodendrocytes: form myelin sheath in brain and spinal cord
 - o Otherwise, schwann cells (neuroglia) encircle long nerve fibers and form myelin sheath.

Epithelial tissue:

tightly packed cells that form a continuous layer. Covers surfaces and lines body cavities.

Protective function. Can serve with secretion, filtration and excretion. Exposed to environment from one side and bounded by basement membrane (different than plasma membrane) from other side. Basement layer anchors cell to below connective tissue and made of carbohydrates and proteins.

- Simple epithelia: single layer of cells
 - o Squamous: flattened cells. Line air sacs in lungs and walls of blood vessels. Allow exchange of material.
 - o Cuboidal: cube shaped. In glands and ovaries and kidneys where urine is formed. Have microvilli is they absorb. Increase surface area of cells. Have lots of mitochondria if they do active transport.
 - o Columnar: cells like rectangular pillars with nuclei at bottom. Lines the digestive tract where absorption takes place when microvilli expand surface area. Also found in oviduct.
- Pseudostratified columnar: each cell touches base but they seem stratified (layered). In windpipe and trachea. They secrete mucus and cilia moves upwards to carry wastes up to mouth. Smoking makes cilia motion stop => chronic inflammation => bronchitis