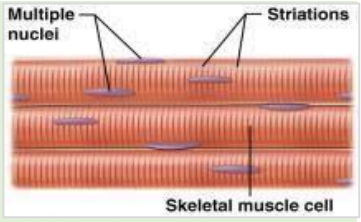
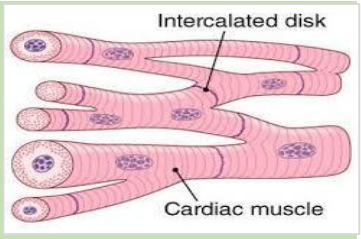
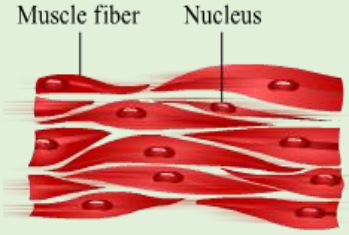
Tissues

3. Muscular tissue: tissue primarily composed of specialized **cells/fiber** that are capable of contracting to effect movement.

✓ Muscle is classified into three types according to their structure and function:

- **Skeletal muscle cells** - striated, voluntary control
- **Cardiac muscle cells** - striated, involuntary control
- **Smooth muscle cells** - nonstriated, involuntary control

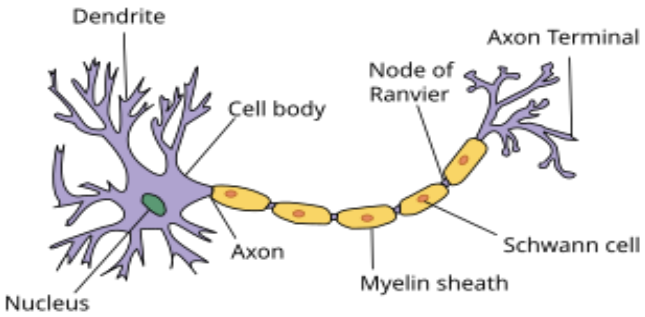
Comparison of Structure and Properties of Muscle Tissue Types

Tissue	Histology	Function	Location	Shape
Skeletal	Long cylindrical fiber, striated, many peripherally located nuclei	Voluntary movement produces heat, protects organs	Attached to bones	
Cardiac	Short, branched, striated, single central nucleus	Contracts to pump blood	Heart	
Smooth	Short, spindle-shaped, with no evident striation, the single nucleus in each fiber	Involuntary movement, moving food, involuntary control of respiration, moving secretions,	Walls of hollow organs (stomach) and passageways (respiratory tract)	

4. **Nervous tissue:** is a specialized tissue that transmits stimulus from one part to other body parts. Nervous tissue comprises two cells: **nerve cells (neurons)** and **glial cells**.

Structure of Neuron:

- **Cell Body (soma):** contains the **nucleus**, **cytoplasm**, and **cell organelles**.
- **Dendrite:** branch of the cell body and appear as thin extensions they transfer the incoming signal to the soma.
- **Axon:** This part of the neuron transmits information and extends away from the soma. It typically carries signals away from the cell body.



Types of Neurons:

1) **Unipolar** cells have only **one process** emerging from the cell. True unipolar cells are only found in invertebrate animals.
2) **Bipolar** cells have **two processes**, which extend from each end of the cell body, opposite to each other. One is the axon and one is the dendrite.
3) **Multipolar** neurons are all of the neurons that are **not unipolar or bipolar**. They have one axon and two or more dendrites (usually many more).
4) **A pseudo-unipolar** cell has a single structure that extends from the soma (like a unipolar cell), which later branches into two distinct structures (like a bipolar cell).

