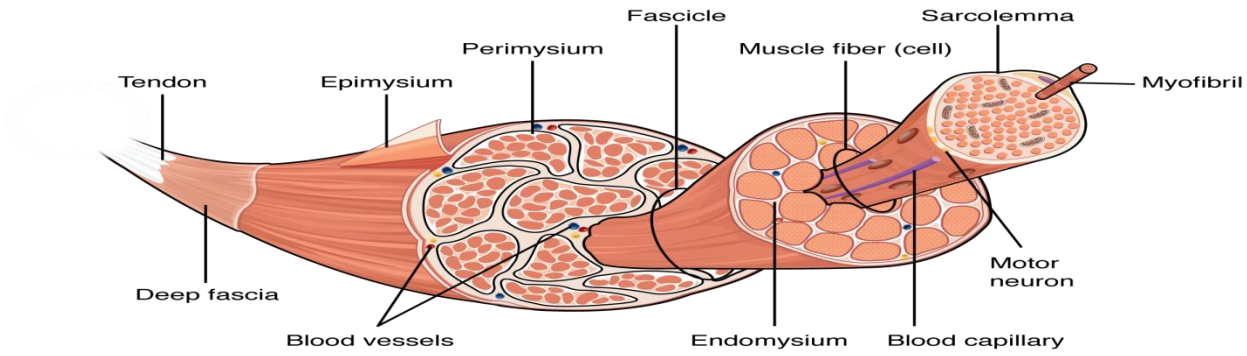
- Visceral muscles are located in the inner walls of hollow visceral organs of the body like the alimentary canal, reproductive tract, etc. They do not exhibit any striation and are smooth in appearance. Hence, they are called smooth muscles (nonstriated muscle). Their activities are not under the voluntary control of the nervous system and are therefore known as involuntary muscles. They assist, for example, in the transportation of food through the digestive tract and gametes through the genital tract.
- Cardiac muscles are the muscles of heart. Many cardiac muscle cells assemble in a branching pattern to form a cardiac muscle. Based on appearance, cardiac muscles are striated. They are involuntary in nature as the nervous system does not control their activities directly.

Skeletal muscle structure

- The skeletal muscles connect to bones by tendons.
- Each organized skeletal muscle in our body is made of a number of muscle bundles or fascicles. Each fascicle is enclosed by tough connective tissue called perimysium which separates one fascicle to other.
- The fascicles are grouped into discrete muscle surrounded by a thin connective tissue layer called epimysium. Outside epimysium a collagenous connective tissue layer called fascia is located which separates the muscles.
- Each muscle bundle contains a number of muscle fibres. Skeletal muscle fibres are long cylindrical multinucleated cells that reach from one end of the muscle to the other. Each muscle fibre is lined by the plasma membrane called sarcolemma enclosing the sarcoplasm. Outside sarcolemma each muscle fibre is surrounded by a connective tissue called endomysium. It separates one fibres to next. Sarcolemma has multiple inward extensions that form a set of T tubules (transverse tubules).



- Muscle fibre is a syncitium as the sarcoplasm contains many nuclei. The endoplasmic reticulum, i.e., sarcoplasmic reticulum of the muscle fibres is the store house of calcium ions. Striated muscle fibres contain numerous mitochondria and glycogen granules for the supply of adequate energy. Sarcoplasm also contains a protein pigment called myoglobin which can take up, store and give up oxygen like hemoglobin.
- A characteristic feature of the muscle fibre is the presence of a large number of parallelly arranged long protein bundles or filaments in the sarcoplasm myofibrils.
- Each myofibril has alternate dark and light bands on it.