

Skeletal muscle histology: Skeletal muscle is **an excitable, contractile tissue responsible for maintaining posture and moving the orbits, together with the appendicular and axial skeletons**. It attaches to bones and the orbits through tendons. Excitable tissue responds to stimuli through electrical signals.

Muscle terminology

myofiber or myocyte: a muscle cell
sarcolemma: the plasma membrane of a muscle cell
sarcoplasm: the cytoplasm of the muscle cell
sarcoplasmic reticulum: the endoplasmic reticulum of a muscle cell
sarcosome: the mitochondria of a muscle cell
sarcomere: the contractile or functional unit of muscle

Muscle function:

1. contraction for locomotion and skeletal movement
2. contraction for propulsion
3. contraction for pressure regulation

Muscle classification: muscle tissue may be classified according to a morphological classification or a functional classification.

Morphological classification (based on structure)

There are two types of muscle based on the morphological classification system

1. Striated
2. Non striated or smooth.

Functional classification

There are two types of muscle based on a functional classification system

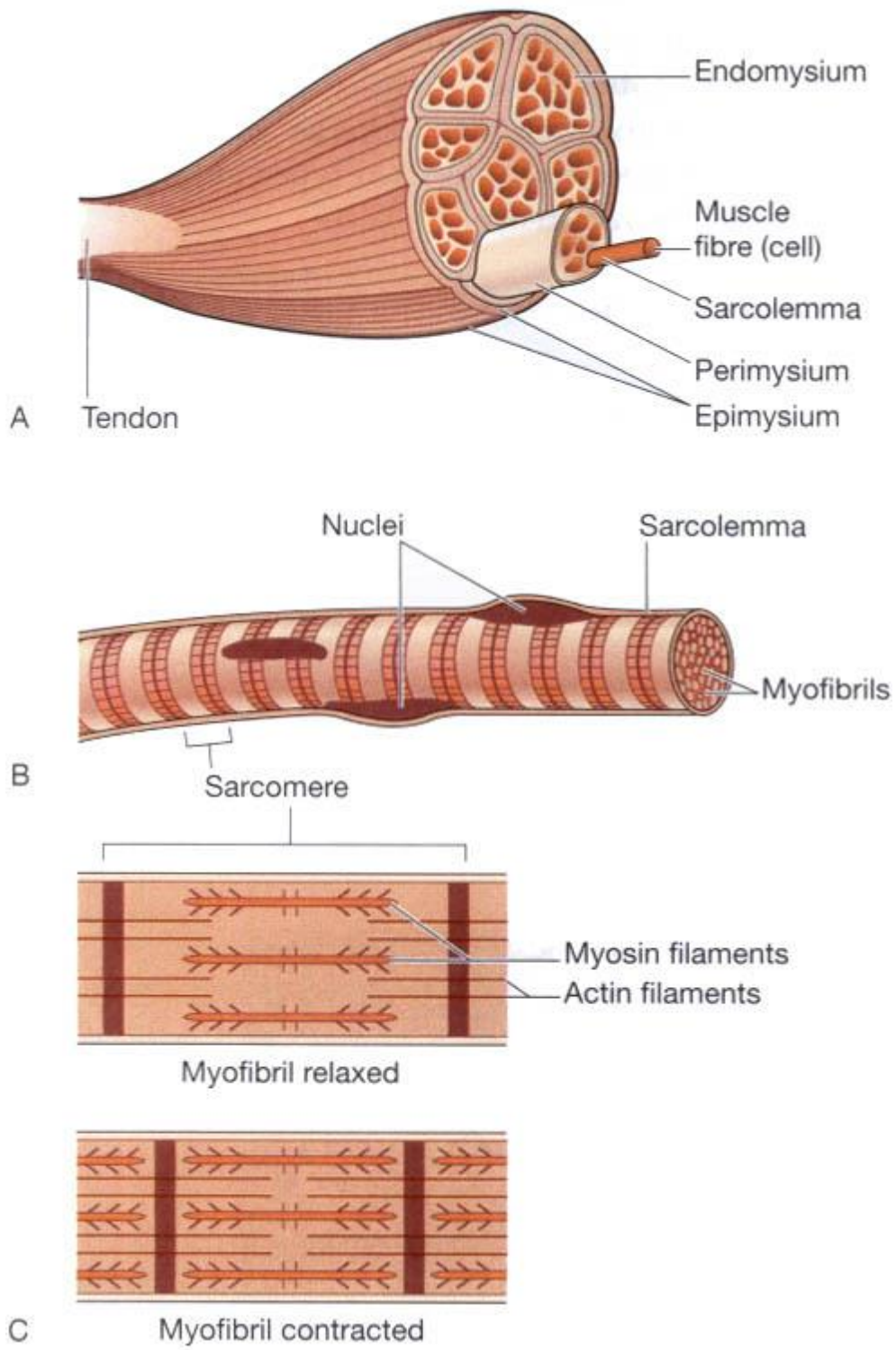
1. Voluntary
2. Involuntary.

Types of muscle: there are generally considered to be three types of muscle in the human body.

Skeletal muscle: which is striated and voluntary
Cardiac muscle: which is striated and involuntary
Smooth muscle: which is non striated and involuntary

Characteristics of skeletal muscle

Skeletal muscle cells are elongated or tubular. They have multiple nuclei and these nuclei are located on the periphery of the cell. Skeletal muscle is striated. That is, it has an alternating pattern of light and dark bands that will be described later.



Shapes of skeletal muscles:

1. Parallel or fusiform: as their name implies their fibers run parallel to each other. These muscles contract over a great distance and usually have good endurance but are not very strong. Examples: Sartorius muscle and rectus abdominus muscle.
2. Convergent: the muscle fibers converge on the insertion to maximize the force of muscle contraction. Examples: Deltoideus muscle and Pectoralis Major muscle.
3. pennate: many fibers per unit area. These types of muscles are strong but they tire or quickly. There are three types of pennate muscle.
 - unipennate
 - bipennate
 - multipennete
4. Circular: the muscle fibers surrounded opening to act as a sphincter. Examples: Orbicularis oris and Orbicularis oculi muscles.
5. fusiform: some texts classify parallel muscles that are slightly wider in their middle (spindle shaped) as fusiform. This term will not be used in this course.