

# Skeletal Muscles



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# Skeletal Muscles



## **Skeletal Muscles**

Skeletal muscle is also known as voluntary muscle. It is the muscular tissue that is attached to the bones and is involved in the functioning of the different parts of the body.

# Skeletal Muscle



## **Structure of Skeletal Muscles**

The skeletal muscles consist of bundles of muscle fibers called fasciculi. These fasciculi are cylindrical in shape. The fasciculi are held together by connective tissue called endomysium.

The muscle fibers are surrounded by blood vessels and a number of layers of other tissues enclosing it.

- Each muscle fiber is 1.2 inch long and 0.004 inch in diameter
- Each fiber contains numerous myofibrils
- Each myofibril is formed of alternate light and dark cross bands
- Dark band is called A band having light zone at the center called H zone
- A band is formed of thick myosin filaments
- Light band is called I band and has a dark membrane at the center called Z line
- I band is formed of thin actin filaments

# Skeletal Muscle



## **Structure of Skeletal Muscles.. Contd..**

- Dark bands of adjacent myofibrils lie side by side similarly light bands also lie side by side , so forming a striations or stripes and so called striated or striped muscle fibers
- The part of myofibril between two adjacent Z line is known as sarcomere

# Skeletal Muscles



## **Types of Skeletal Muscles**

There are two types of skeletal muscles

- **Red Muscles**
  - Red muscles are red due to the presence of red pigment called myoglobin in high amount. These muscles are smaller in diameter and have a large number of mitochondria. Red muscles have a large number of blood capillaries in it.
- **White Muscles**
  - White muscles are bigger in diameter and have a small amount of myoglobin in it. They also have a lesser number of mitochondria.

# Skeletal Muscles



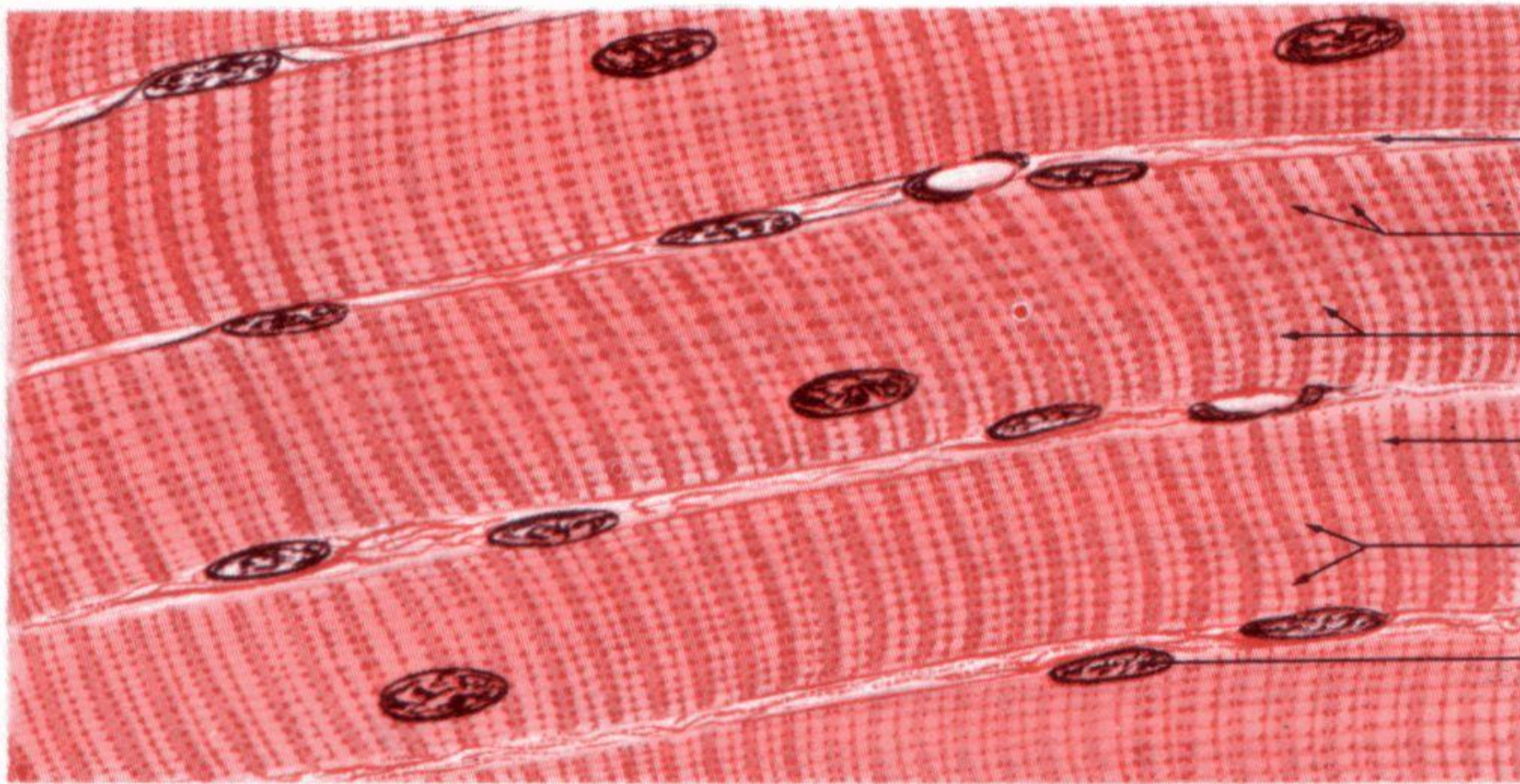
## **Function of Skeletal Muscles**

The important functions of skeletal muscles are

- The skeletal muscles are responsible for body movement
- The body posture is maintained by the skeletal muscles
- Skeletal muscles protect the internal organs and tissues from any injury and also provide support to these delicate organs and tissues
- These also support the entry and exit points of the body. The sphincter muscle present around the anus, mouth and urinary tract etc. contract and expand to reduce or increase the size of the openings and facilitates the swallowing, excretion etc.
- The skeletal muscles also regulate the body temperature. It is the contraction of skeletal muscle, which converts energy into heat during exercise.



# Skeletal Muscle



Sarcolemma

Anisotropic substance

Isotropic substance

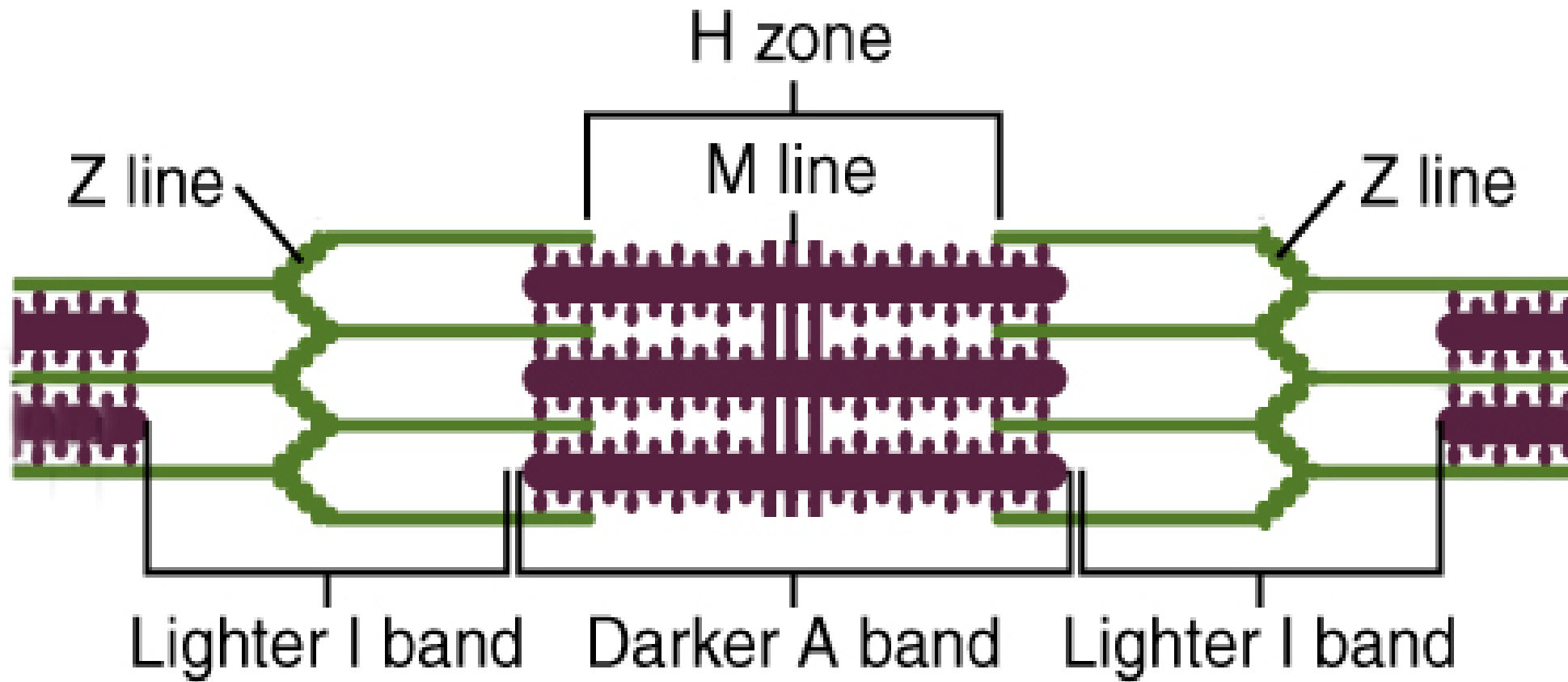
Intermediate line

Myofibrils

Nucleus

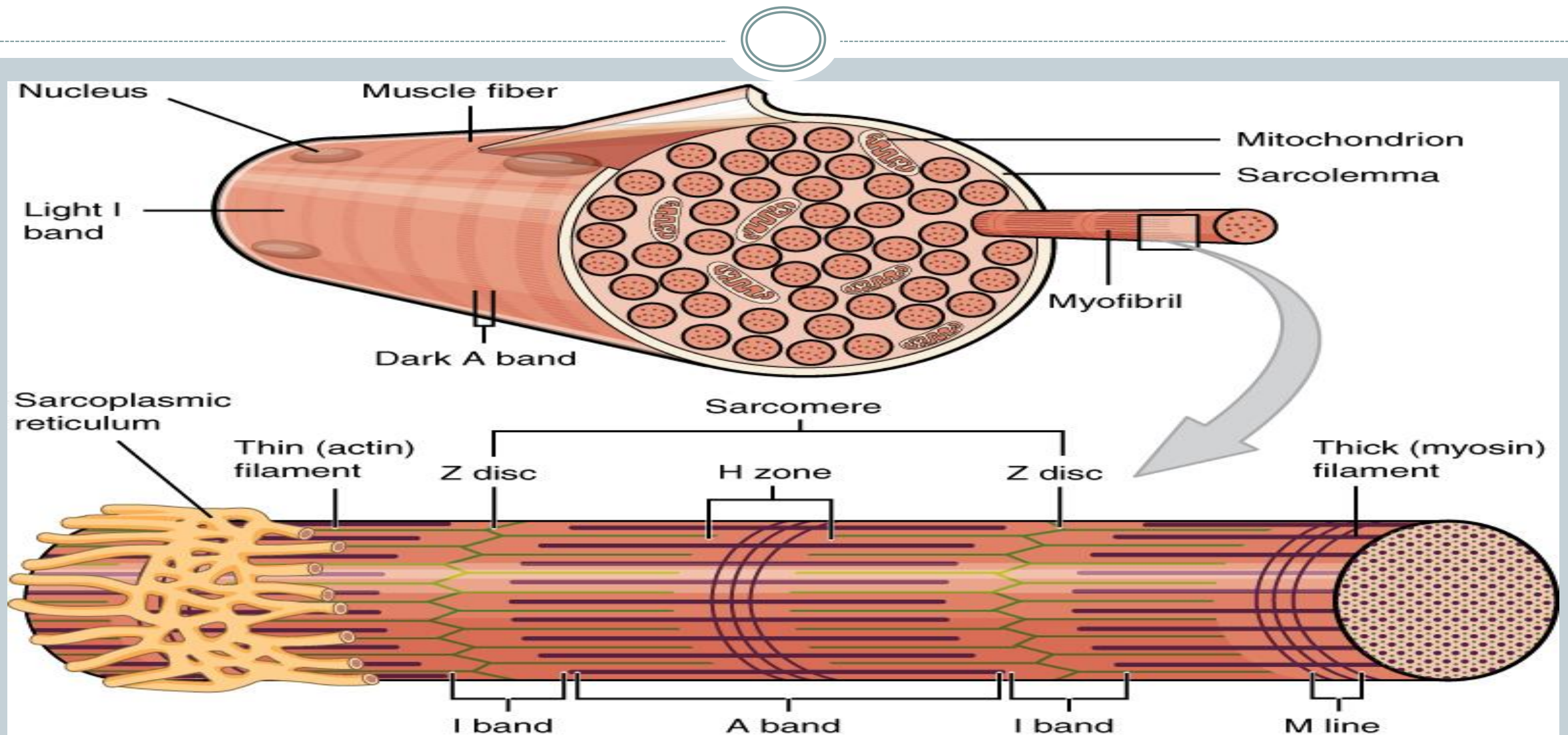
Skeletal or striated voluntary muscle tissue.

# Skeletal Muscle





# Skeletal Muscle



*Thank You*

