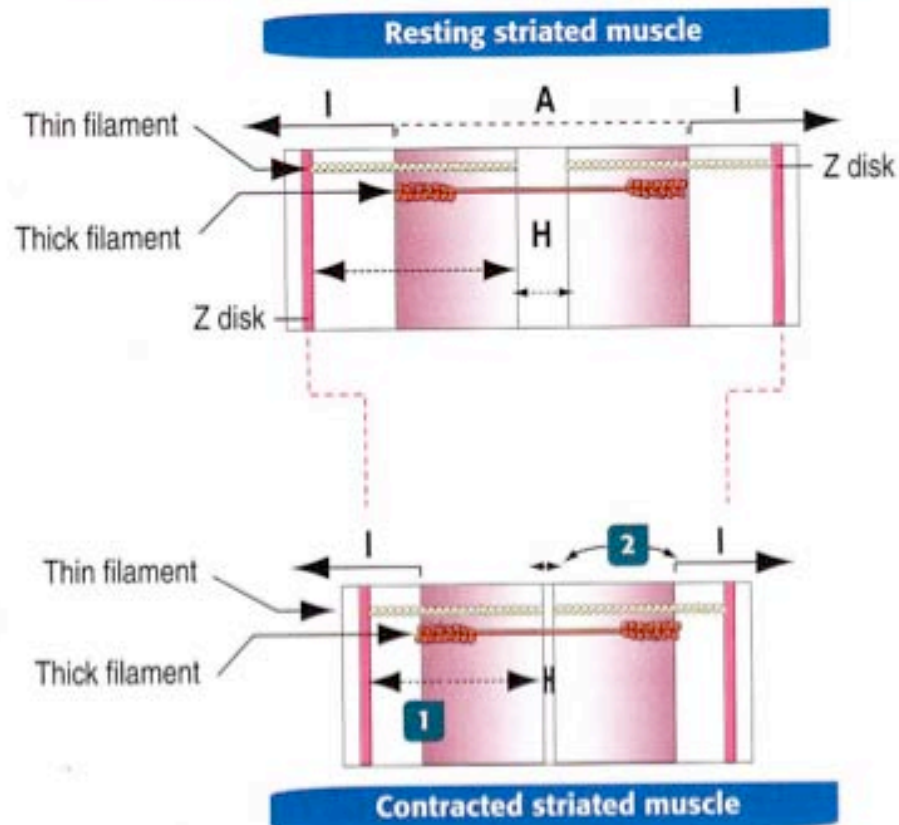


# Muscle Review

- Contractile Mechanisms
  - anatomy of a sarcomere
- Differences between contraction/structure in different muscle types
  - compare and contrast between heart and skeletal muscle

## Length of the sarcomere during muscle contraction and relaxation

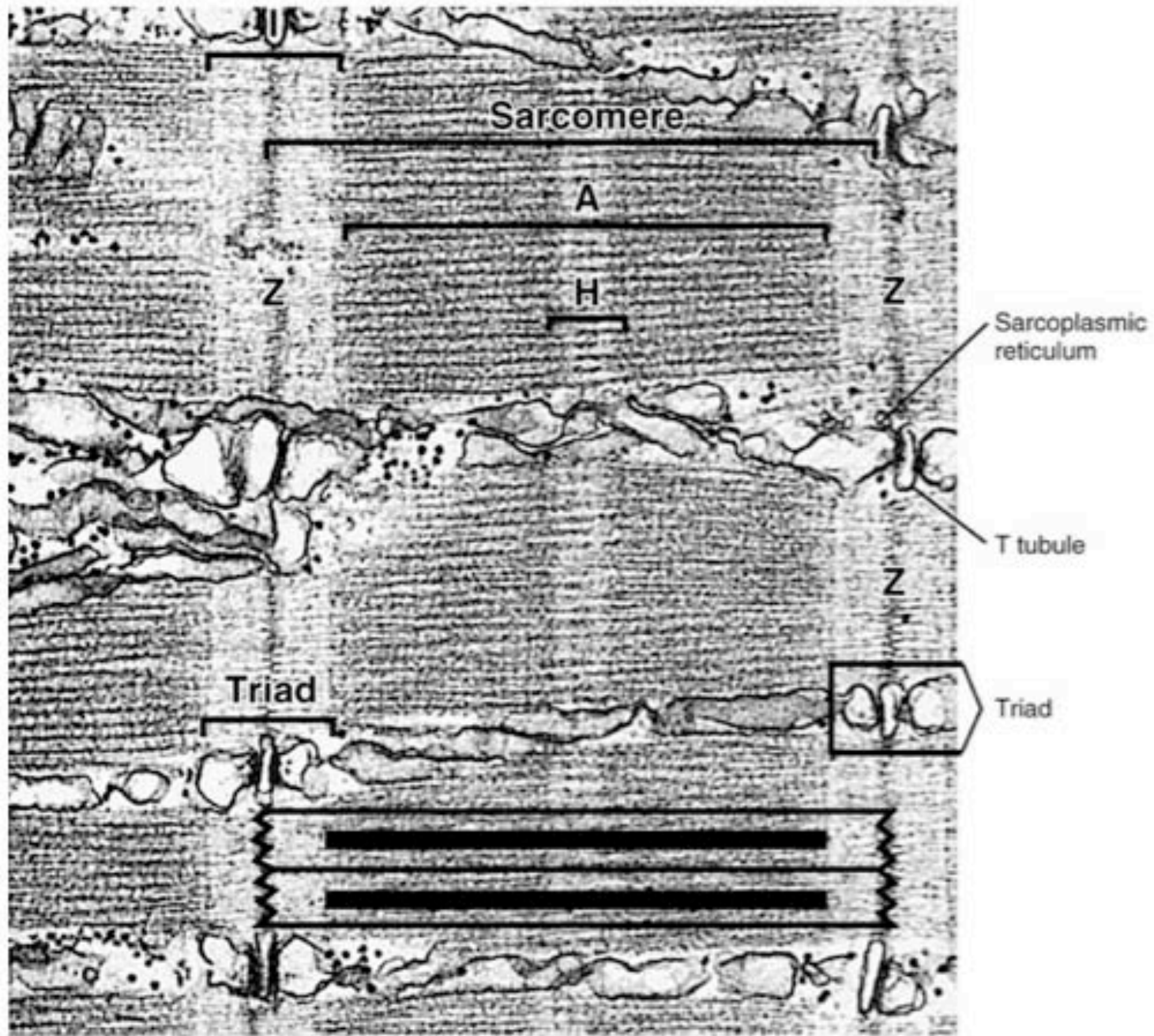


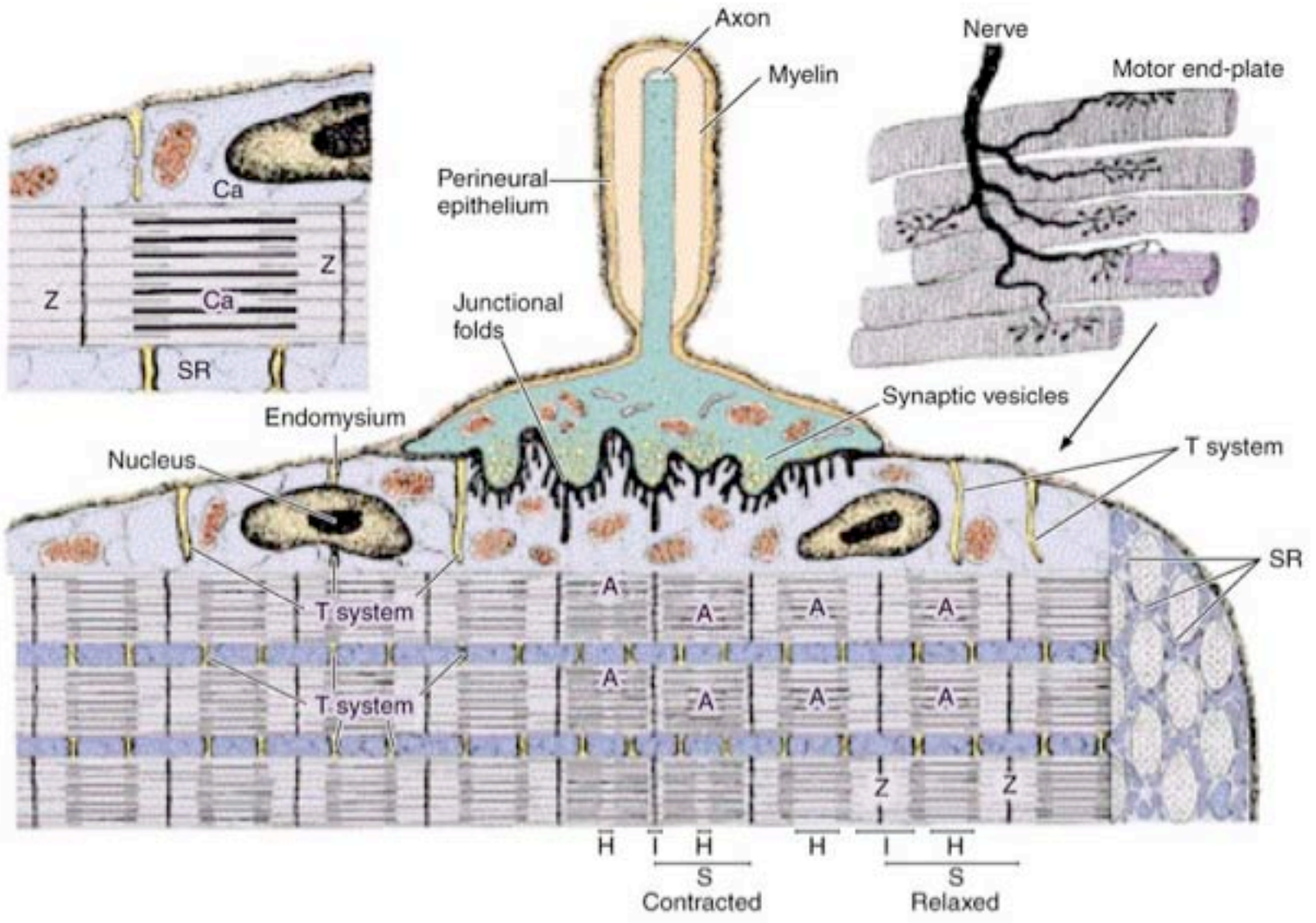
### During muscle contraction

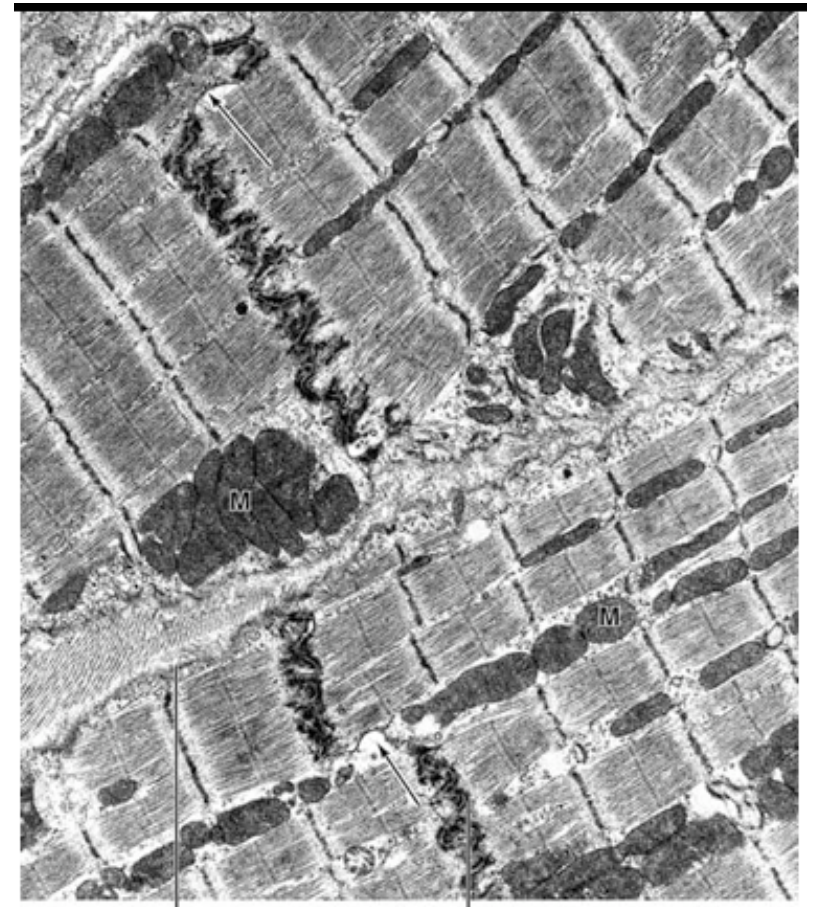
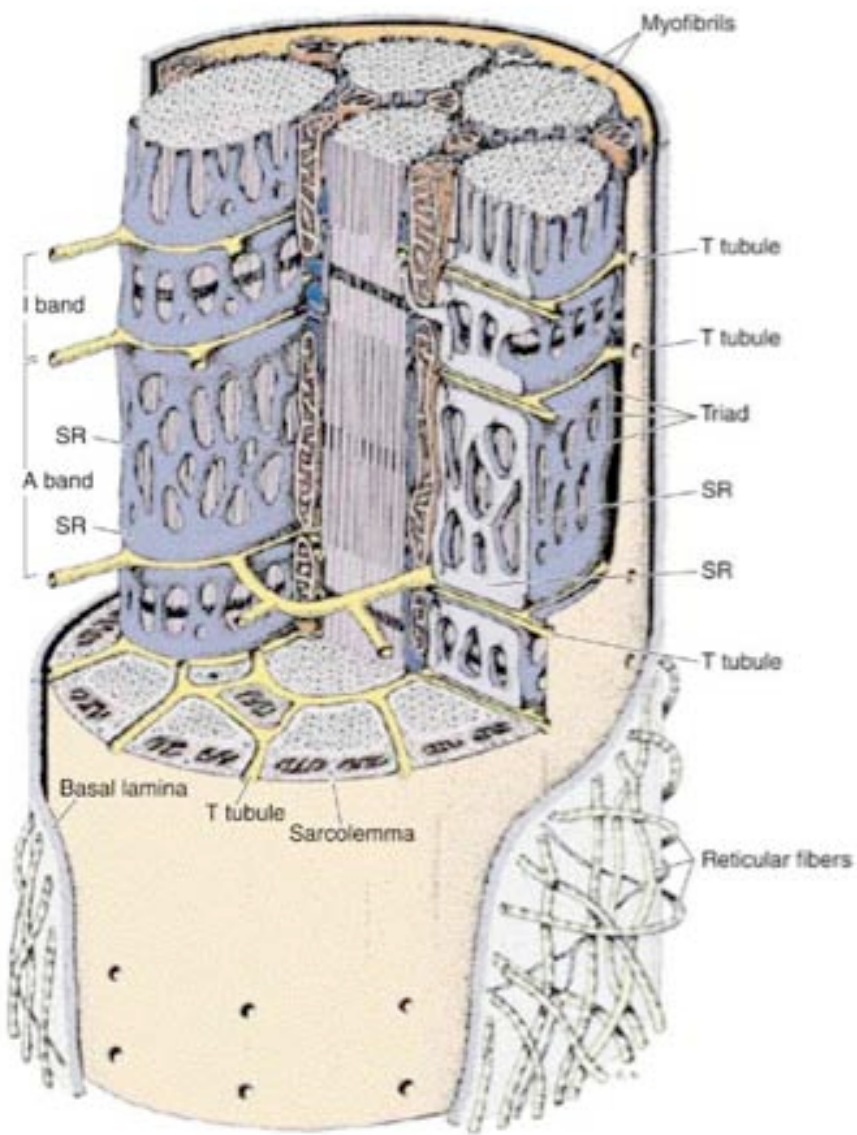
- 1** The length of the thick and thin filaments does not change. This is demonstrated by **the constant length of the A band and the distance between the Z band and the adjacent edge of the H zone.**
- 2** The length of the sarcomere decreases because thick and thin filaments slide past each other. This is demonstrated by **a reduction in the length of the H zone and the I band.**

The A band represents the distribution of the myosin thick filaments. The H band indicates the myosin tail regions of the thick filaments is not overlapping with thin filaments.

Thin filaments are attached to the Z disk. Two half-I bands—containing thin filaments—are seen at the right and left side of the Z disk.







Fibrils of reticular fibers

Intercalated disk

Name the major differences in skeletal and cardiac muscle.

Skeletal muscle



Cardiac muscle



How do these differences indicate muscle function?