

The Muscular Tissue

By

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The Muscular Tissue is Characterized by closely packed, very elongated cells or linear arrays of cells that are arranged in extensive parallel arrays .

Cells within muscle tissues are referred to as Myocytes .There are three kinds of muscles in the animal body :

1.Striated or Skeletal muscles :

Skeletal muscles fibers are multinucleated, the nuclei situated peripherally and immediately below the sarcolemma. Each skeletal muscle fiber shows distinct cross-striations ,which are visible as alternating dark or A bands (myosin filament) and light or I bands (actin filament) .

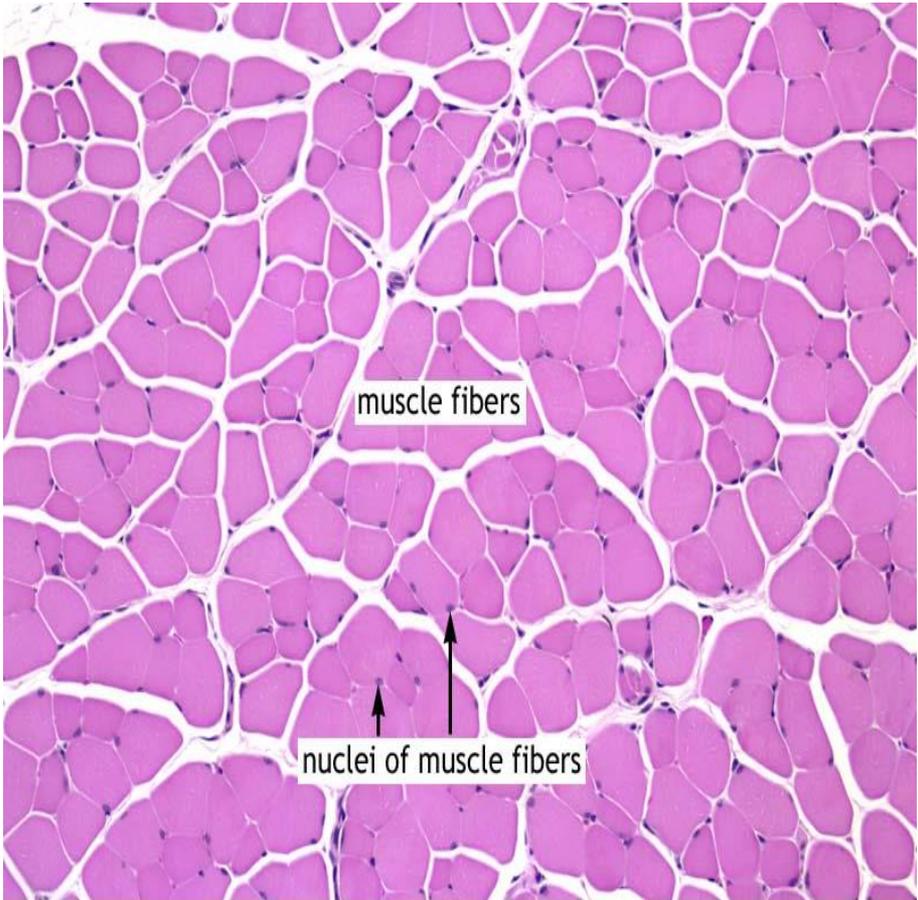
Skeletal muscle fibers are aggregated into fascicles and surrounded by connective tissue fibers.

- The whole muscle is enclosed by a dense connective tissue sheath called the epimysium.

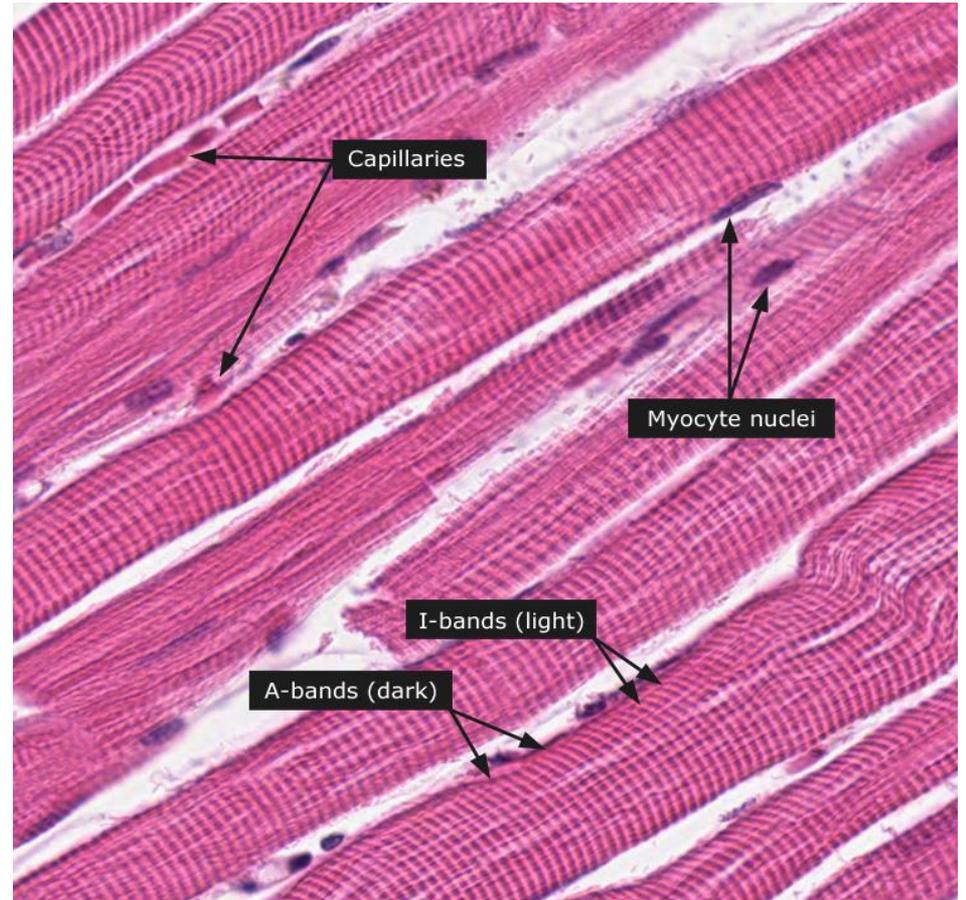
- Fibrous sheaths that surround the fascicles are called the perimysium . Small blood vessels, the lymphatics and the nerves are all found in the perimysium.
- Each muscle fiber is surrounded by loose connective tissue called endomysium contain capillaries and nerve fibers .

The collagen fibres of these connective tissue wrappings merge with the tendons, or periosteum. Tendons link the muscle to bone, on which the muscle pulls.

The striated muscle are usually found connected to the skeleton and their movement is controlled by the will of the animal. Hence they are called skeletal or voluntary muscles.

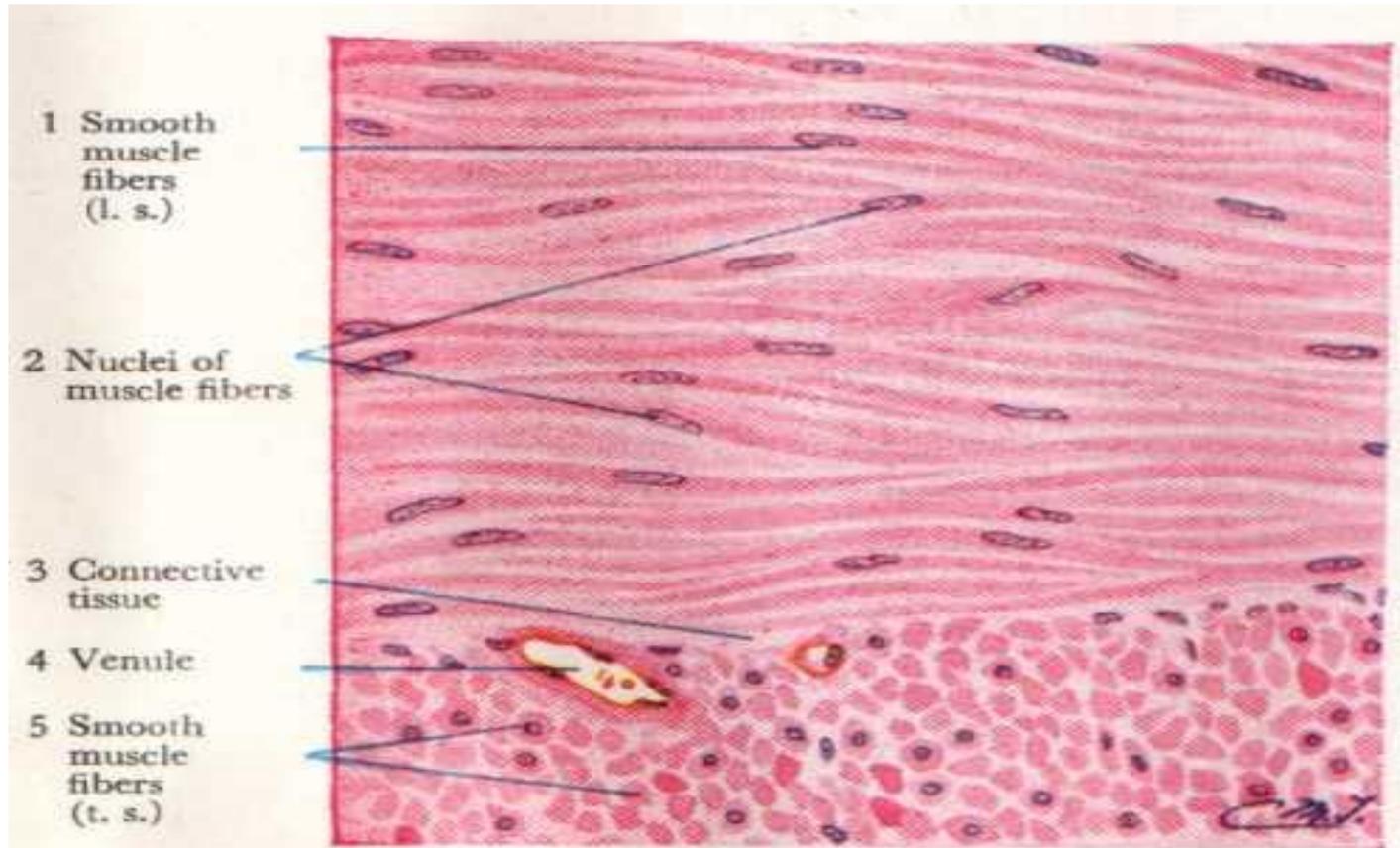


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2. Unstriated or Smooth Muscles:

In which the cells do not exhibit cross striation. Each muscle fiber is long, spindle shaped cell with pointed ends and a thickened central part housing the nucleus. The unstriated muscle are usually found in the walls of the viscera and work without the interference of the will of the animal. Hence they are also called visceral or involuntary muscles. (found in blood vessels, lining digestive tract organs and uterus).



3.Cardiac Muscles :

The cardiac muscle fibers are also cylindrical ,but not much elongated . Each fiber has one ovoid central nucleus , the cardiac fiber branch and unite with each other .

Every two connected fibers have a darkly stained transverse band in between them known as the **intercalated discs**(gap junctions) are important for cell- to cell communication and required for coordinated muscle contraction and maintenance of circulation , intercalated discs contain alternating dark and light bands .

The cardiac muscle are found only in the wall of the heart and contract rhythmically .

