

SNS COLLEGE OF PHARMACY AND HEALTH SCIENCES

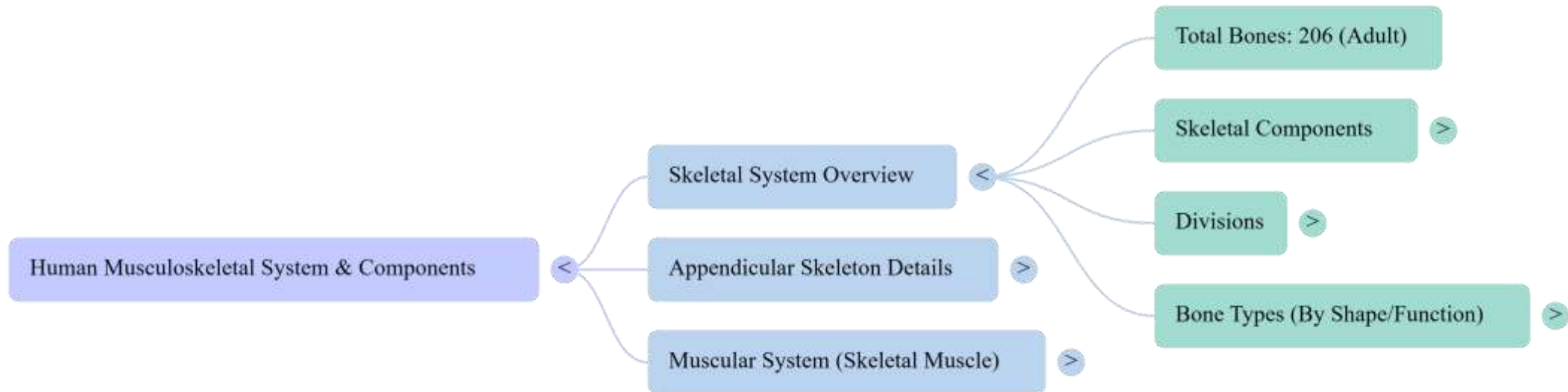
Affiliated To The Tamil Nadu Dr. MGR Medical University, Chennai
Approved by Pharmacy Council of India, New Delhi. Coimbatore -641035

COURSE NAME : HUMAN ANATOMY & PHYSIOLOGY (BP301 T)

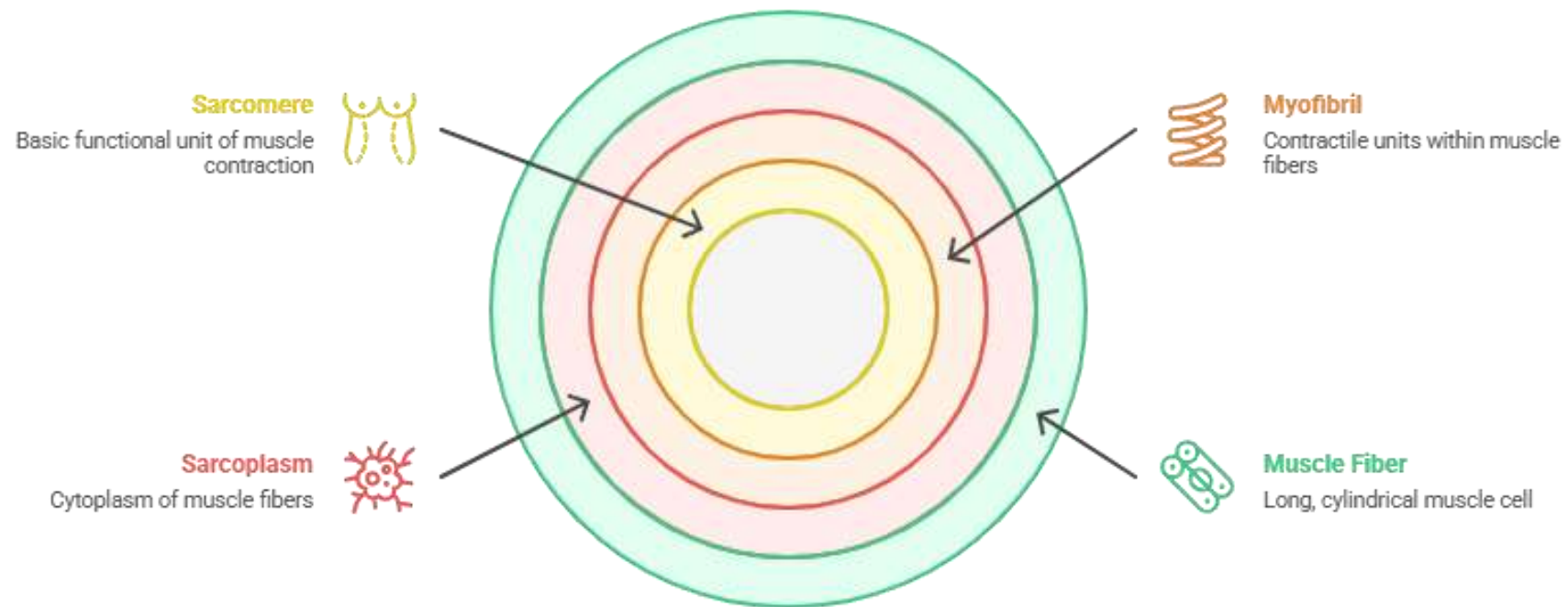
YEAR : I SEM/I YEAR

TOPIC : ORGANISATION OF SKELETAL MUSCLE

MIND MAP

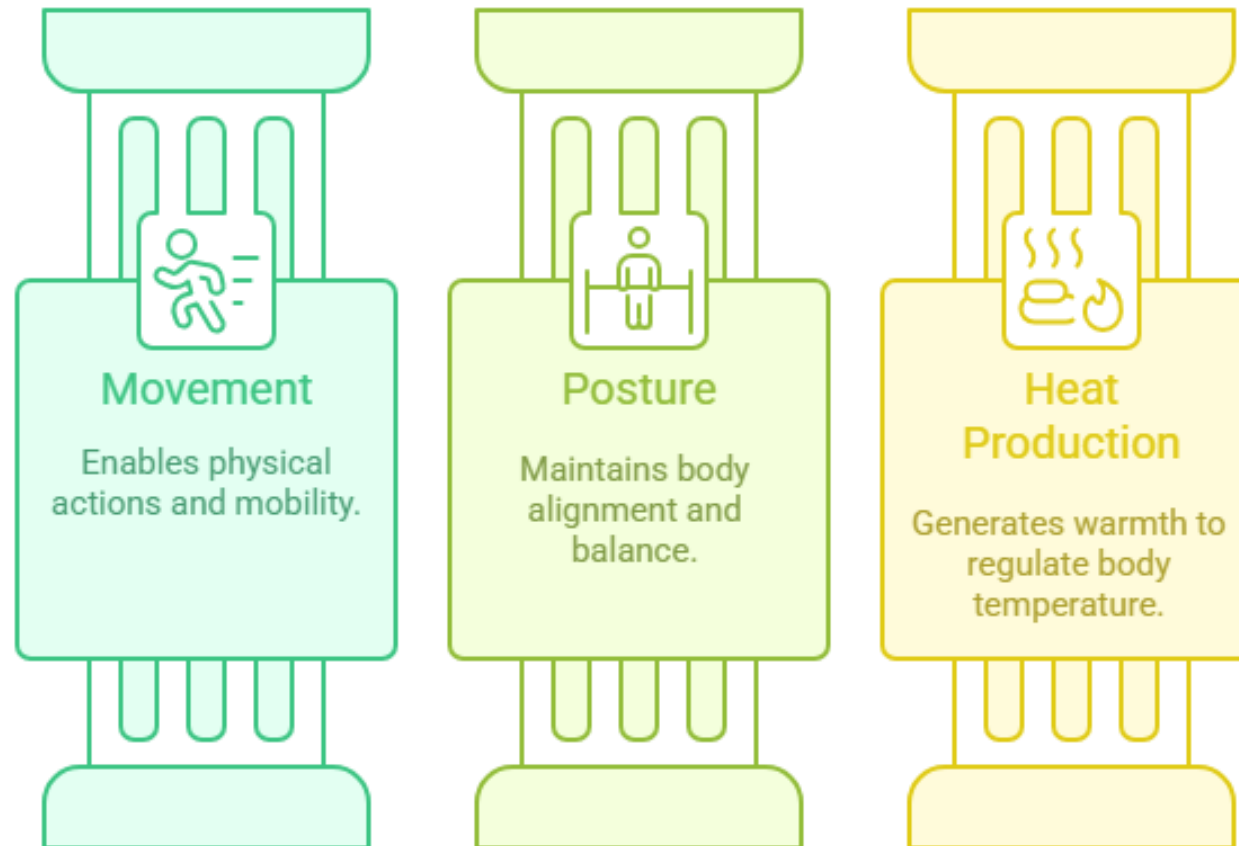


Muscle Fiber Structure



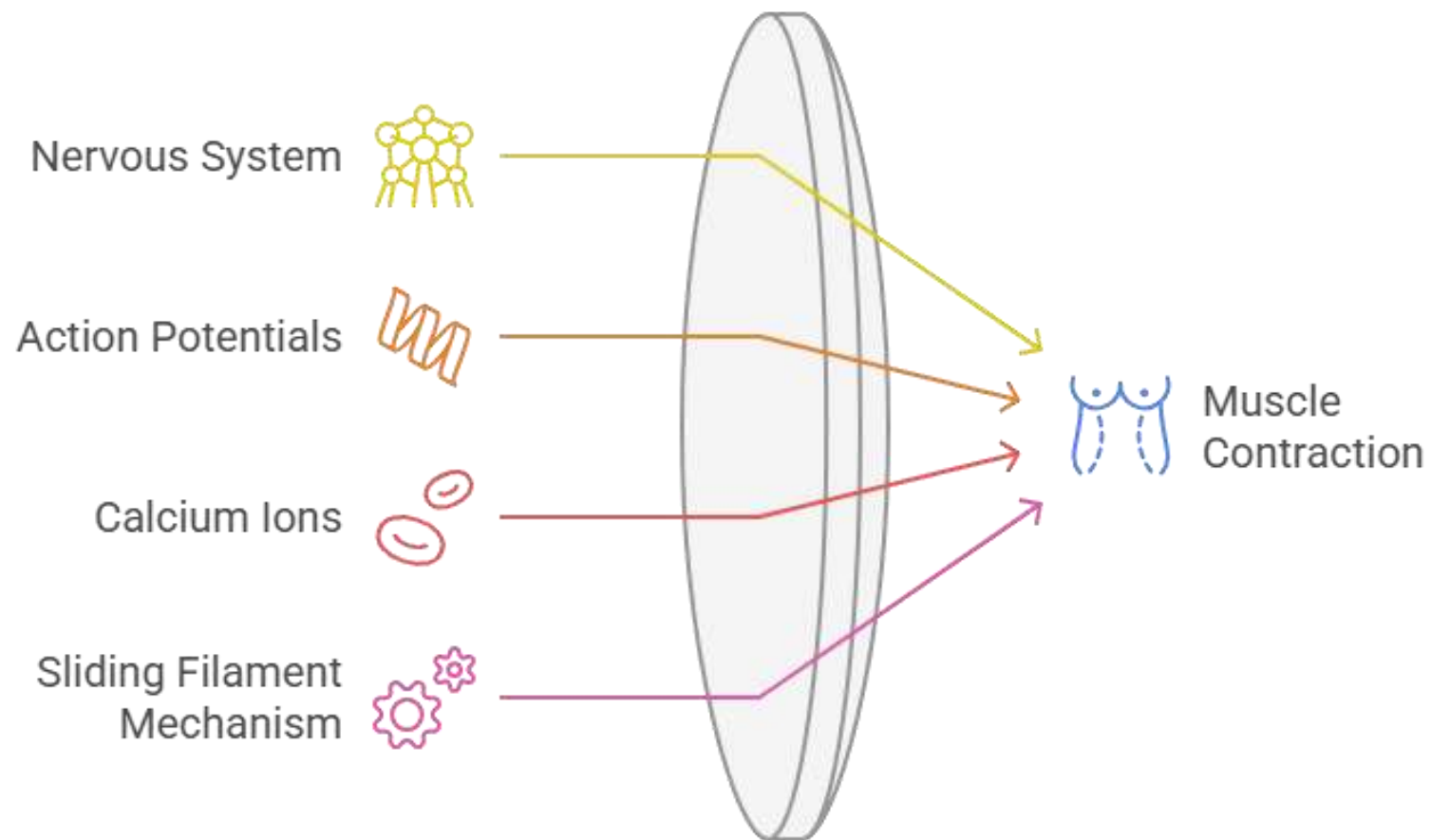
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Skeletal Muscle Functions



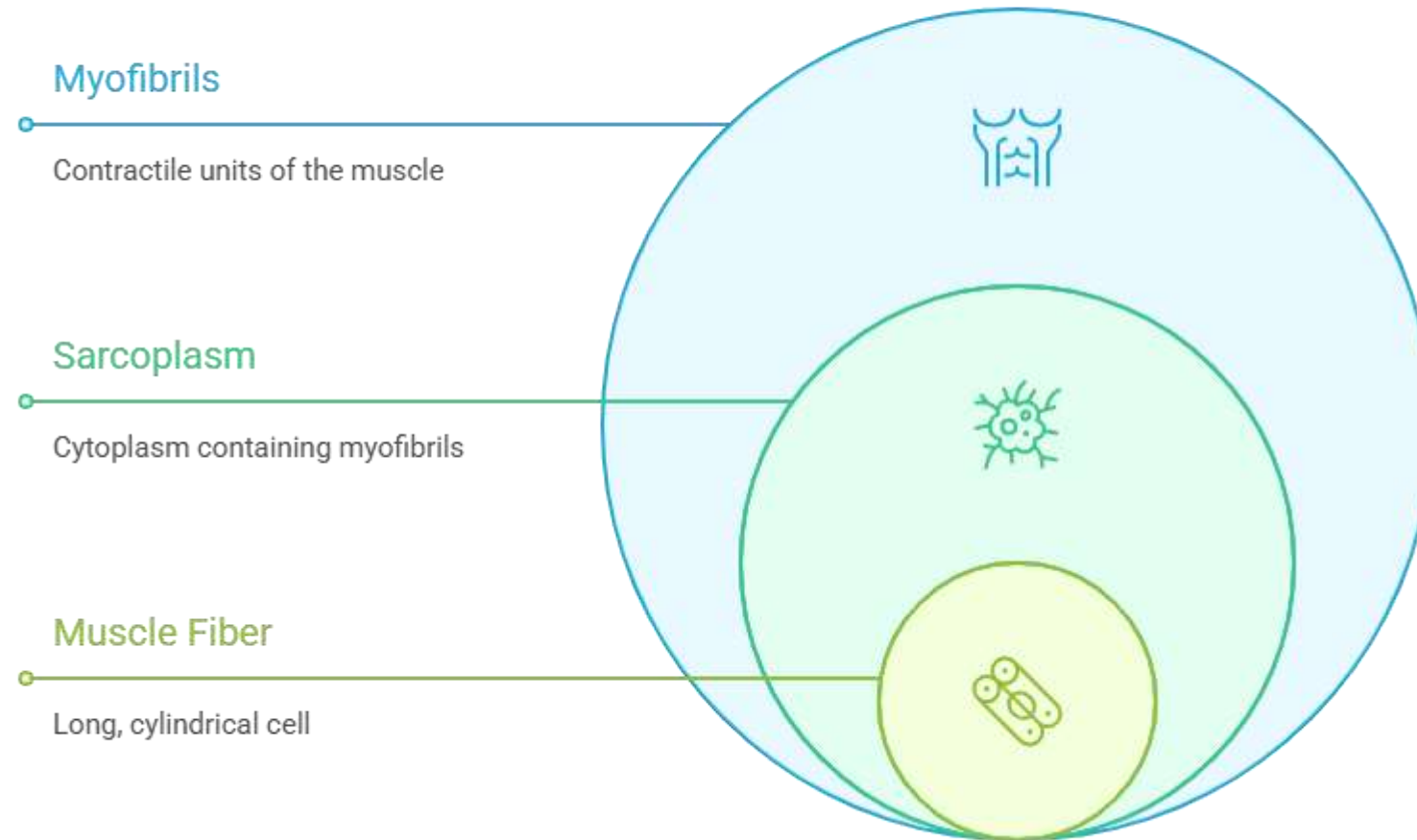
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Orchestrating Muscle Movement



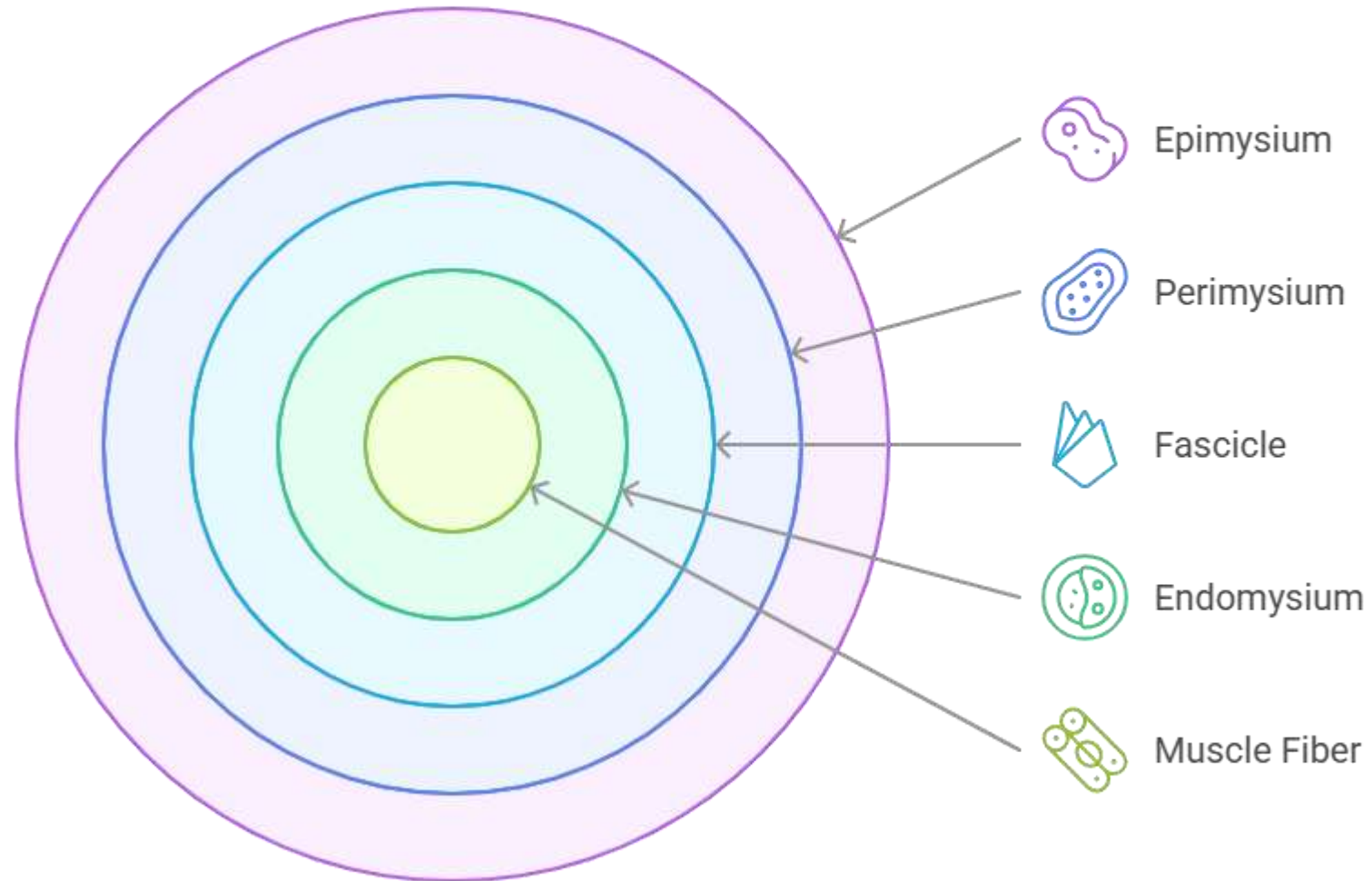
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Muscle Fiber Structure



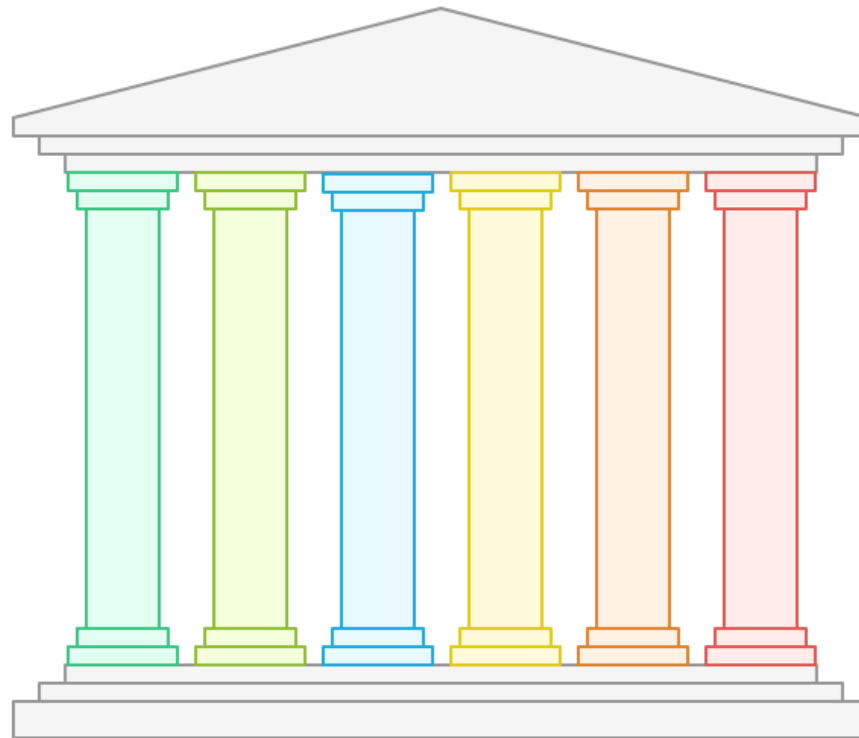
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Skeletal Muscle Structure



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Understanding Muscle Dynamics



Macroscopic Muscle Structure

Focuses on the whole muscle and its components visible to the naked eye.



Microscopic Muscle Structure

Explores the sarcomeres and myofilaments that form the basis of muscle tissue.



Nervous System Role

Describes how the nervous system initiates and controls muscle contractions.



Action Potentials

Explains the electrical signals that trigger muscle contractions.



Calcium Ions

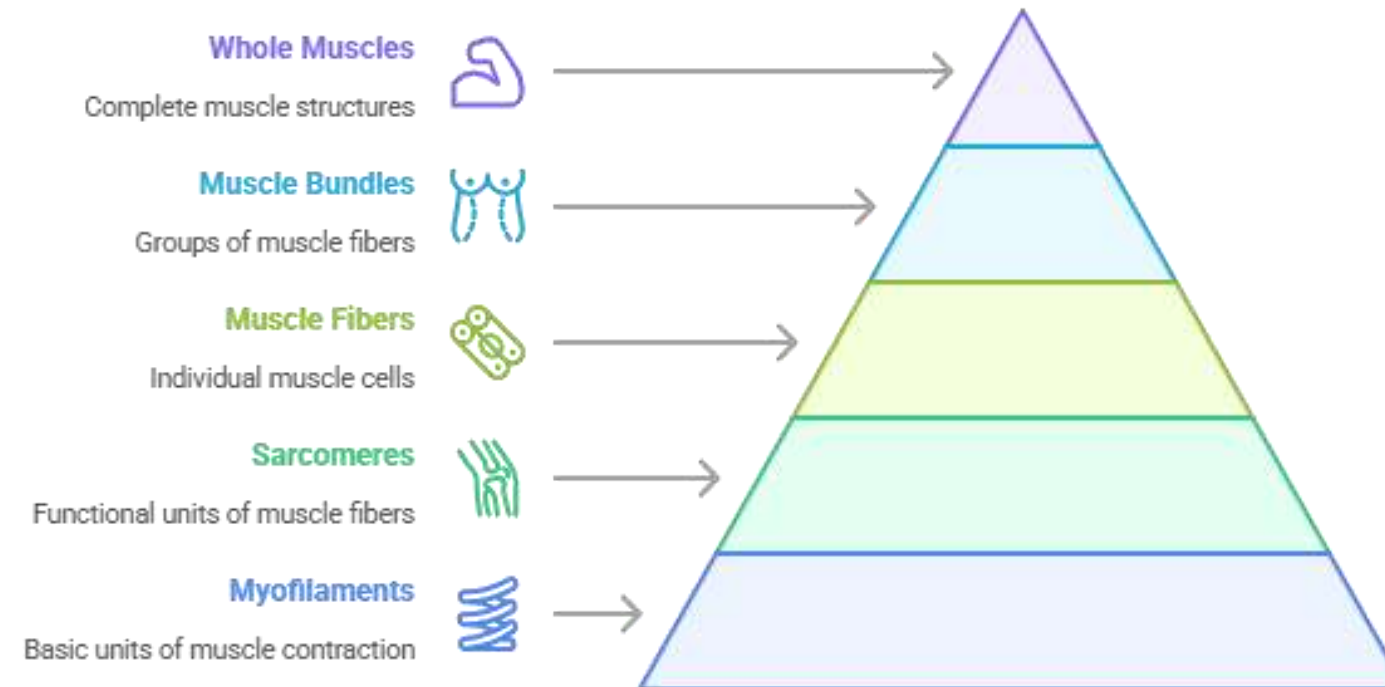
Highlights the crucial role of calcium in initiating the sliding filament mechanism.



Sliding Filament Mechanism

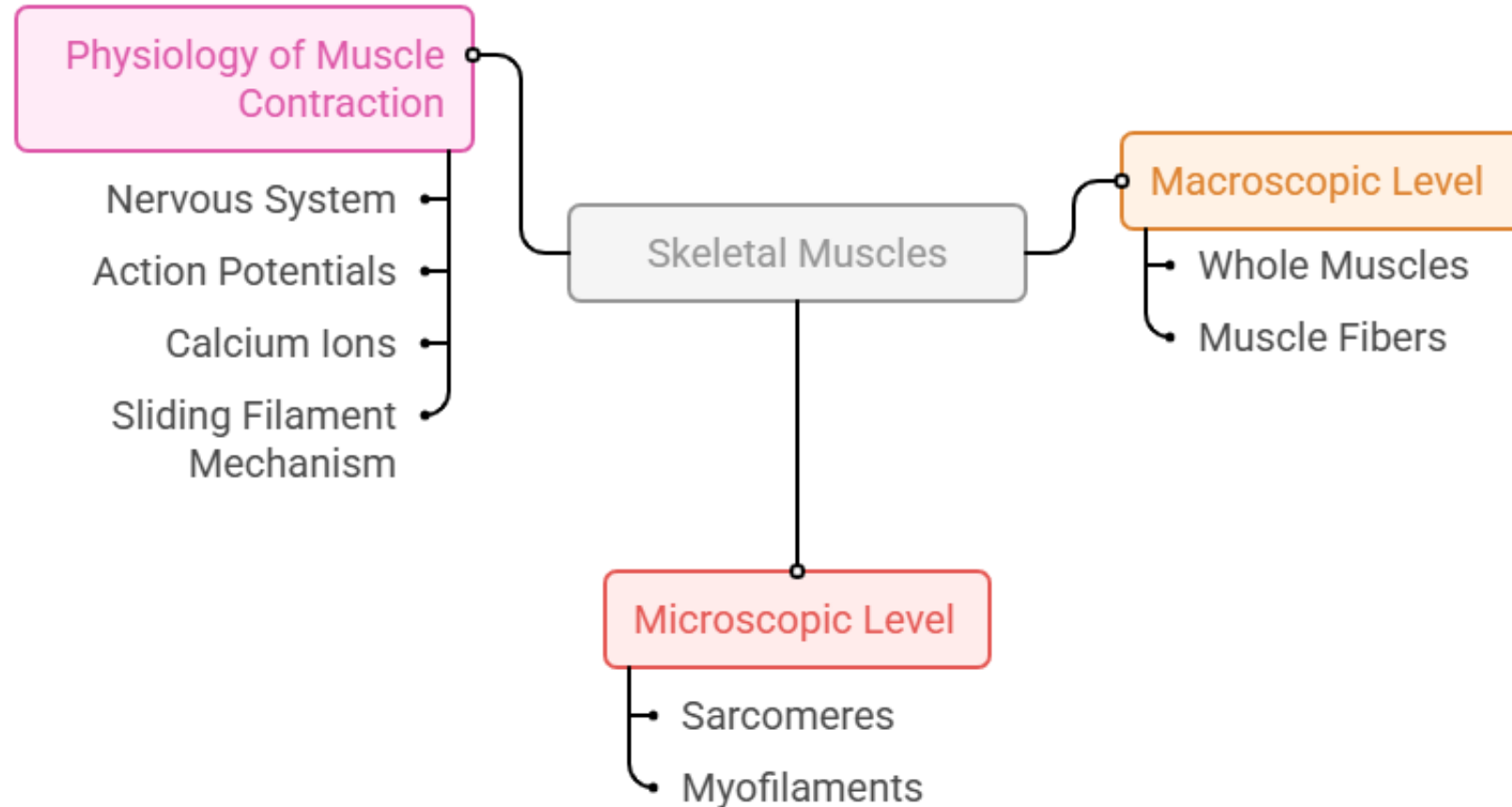
Details the process by which actin and myosin filaments interact to cause muscle contraction.

Muscle Contraction Hierarchy



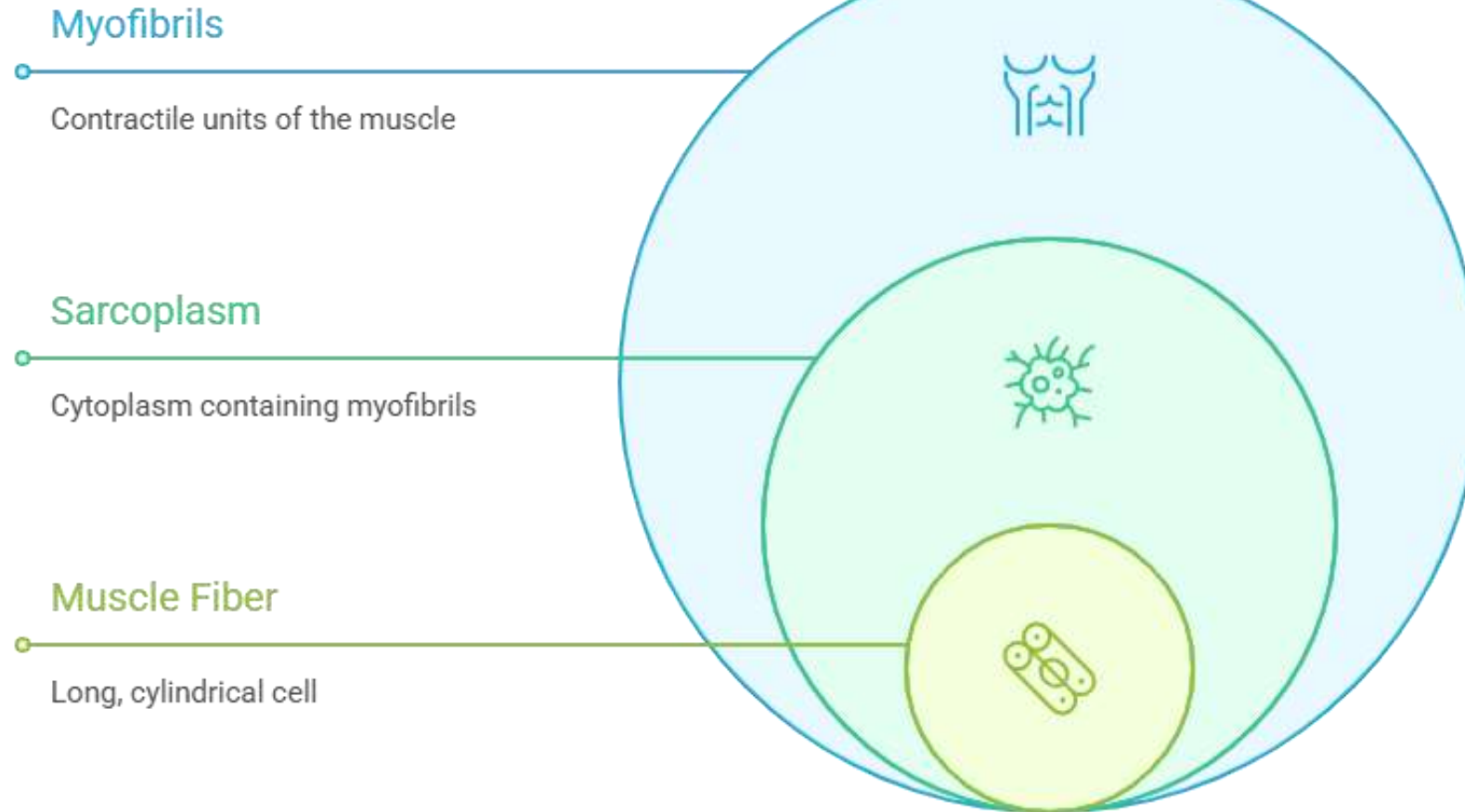
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Organization and Physiology of Skeletal Muscles



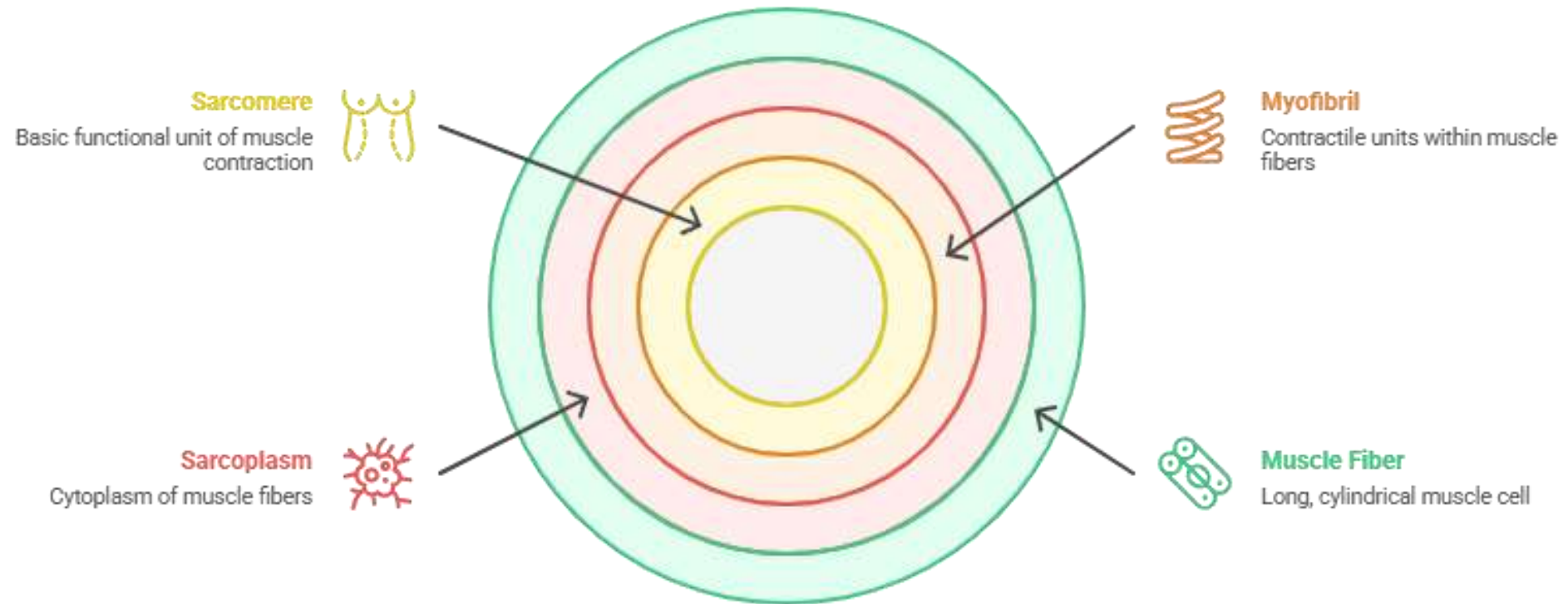
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Muscle Fiber Structure



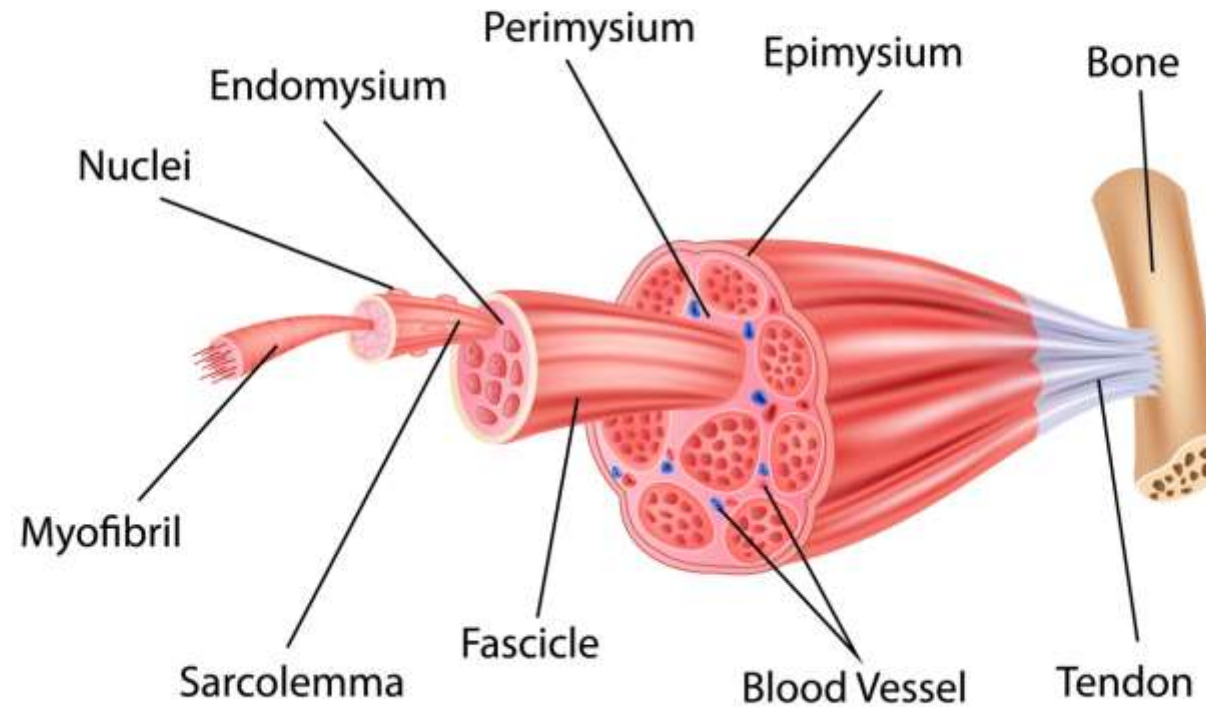
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Muscle Fiber Structure



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Structure of Skeletal Muscle



Muscle Fiber

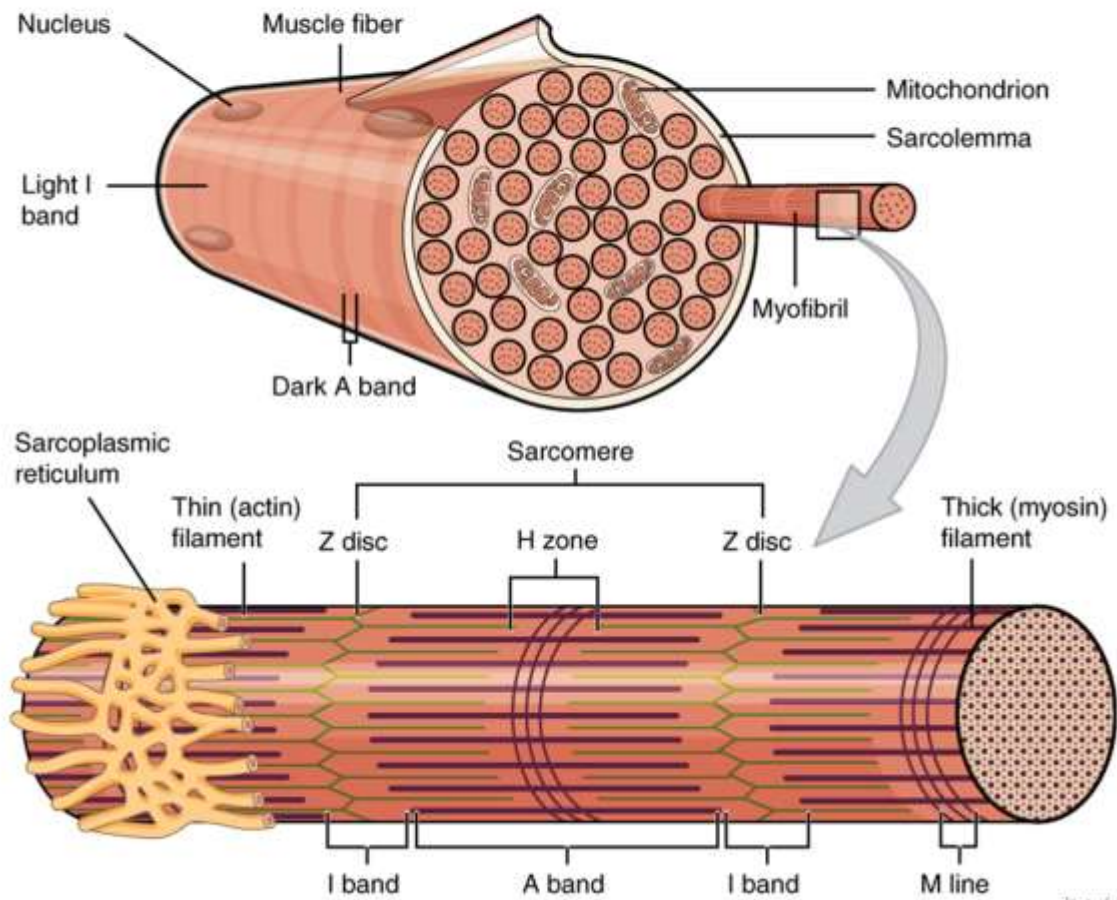
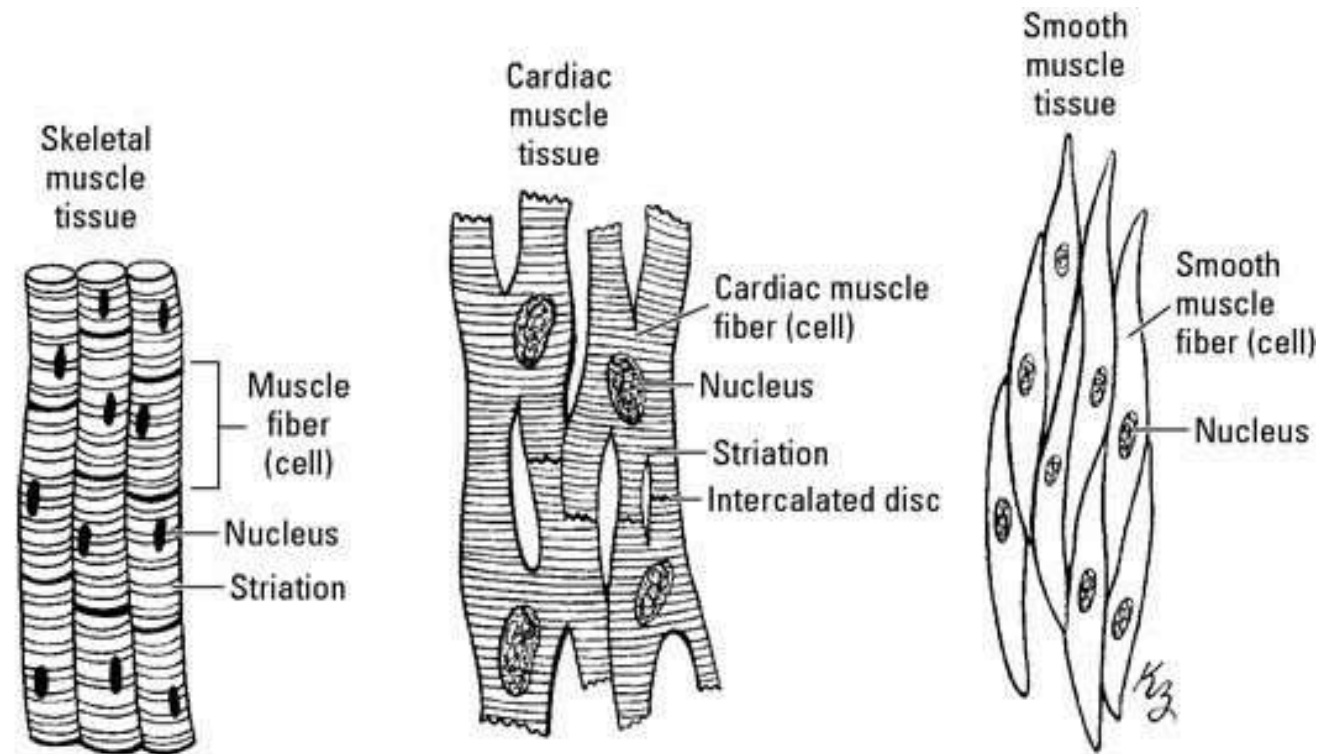


Image via <http://philischatz.com/>

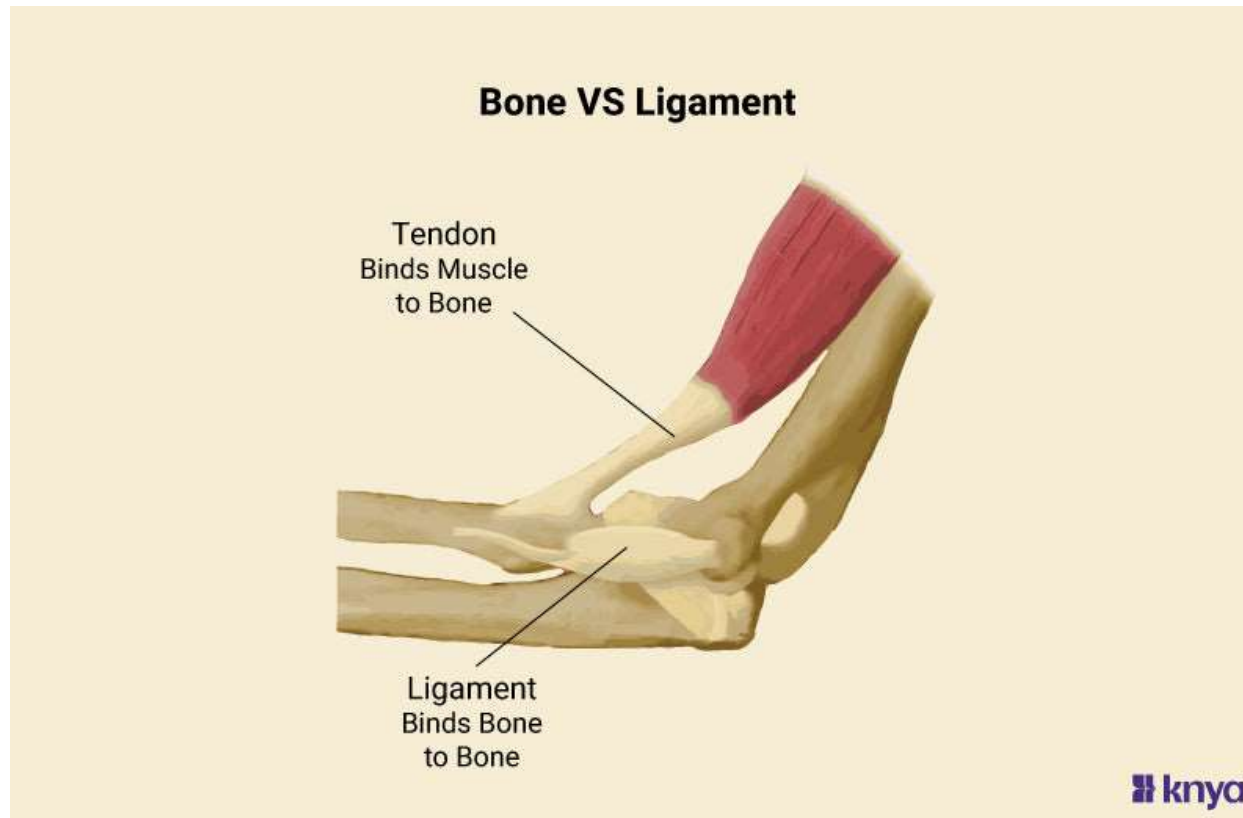
TYPES OF MUSCLE TISSUE





CLASS ASSESSMENTS

DIFFERENCE BETWEEN BONE VS LIGAMENT?



CLASS ASSESSMENTS



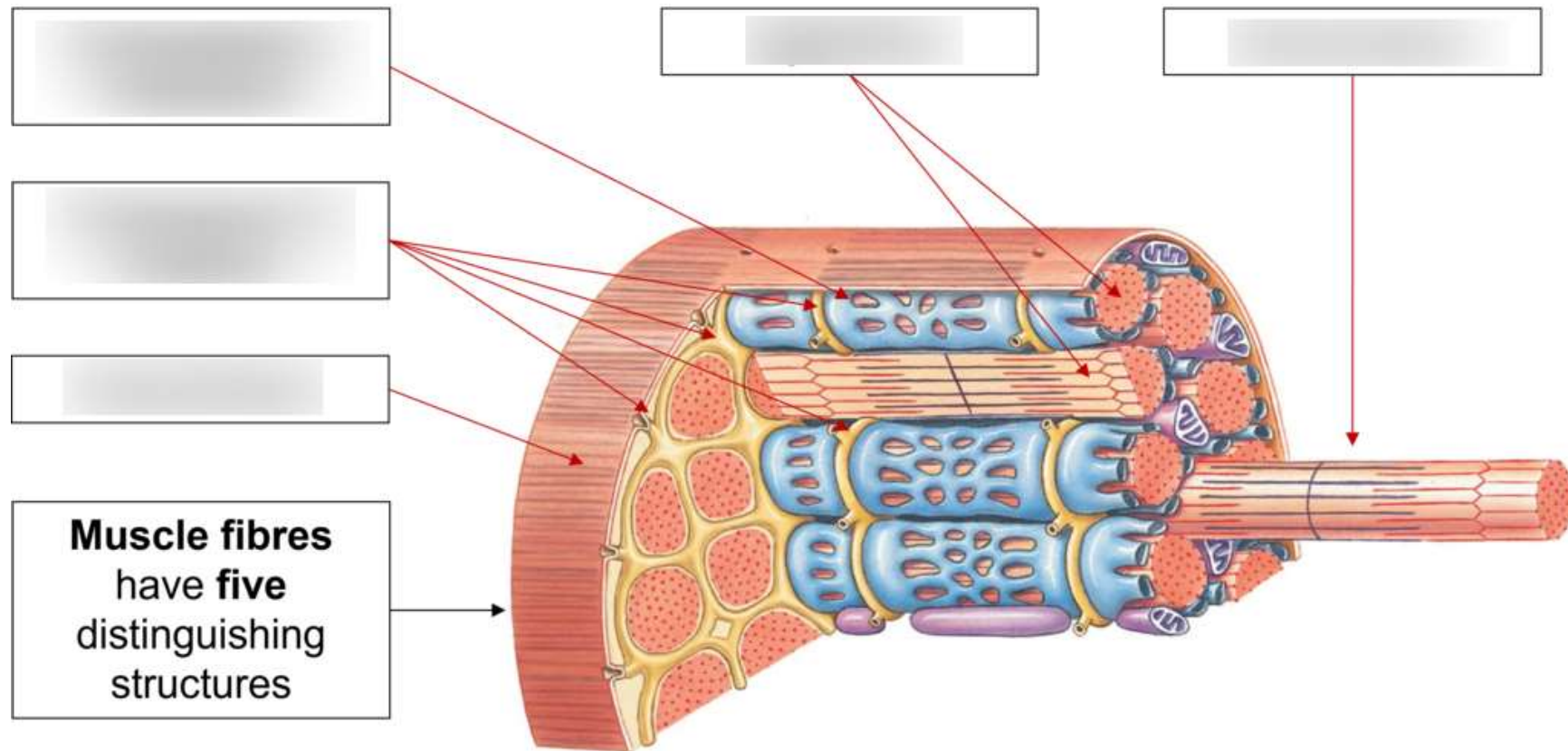
IDENTIFY THE TYPE OF MUSCLE?





CLASS ASSESSMENTS

MARK THE PARTS OF SKELETAL MUSCLE?



SUMMARY

Organisation of Human Skeletal System

- Total **206 bones** in adults, divided into two major parts.
- **Axial Skeleton** (80 bones): skull, vertebral column, sternum, and ribs – forms the central upright axis.
- **Appendicular Skeleton** (126 bones): pectoral girdle, pelvic girdle, and all limb bones – responsible for movement.
- Bones are connected by **joints** (movable, slightly movable, immovable).
- **Cartilage** present at joints, in growing bones, and flexible areas (nose, ear).
- Supported by **ligaments** (bone to bone) and **tendons** (muscle to bone)

REFERENCE

- ✓ Essentials of Medical Physiology, K. Sembulingam & P. Sembulingam (Jaypee Brothers Medical Publishers)
- ✓ A Textbook of Human Anatomy and Physiology-I, SIA Publishers
- ✓ Human Anatomy & Physiology Gerard J. Tortora & Bryan H. Derrickson (Wiley)
- ✓ Ross and Wilson anatomy and physiology in health and illness, Anne Waugh & Allison Grant.

