

The Skeletal and Muscular Systems

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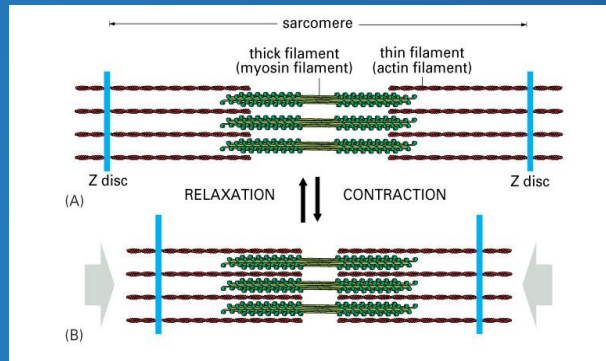


The Muscular System

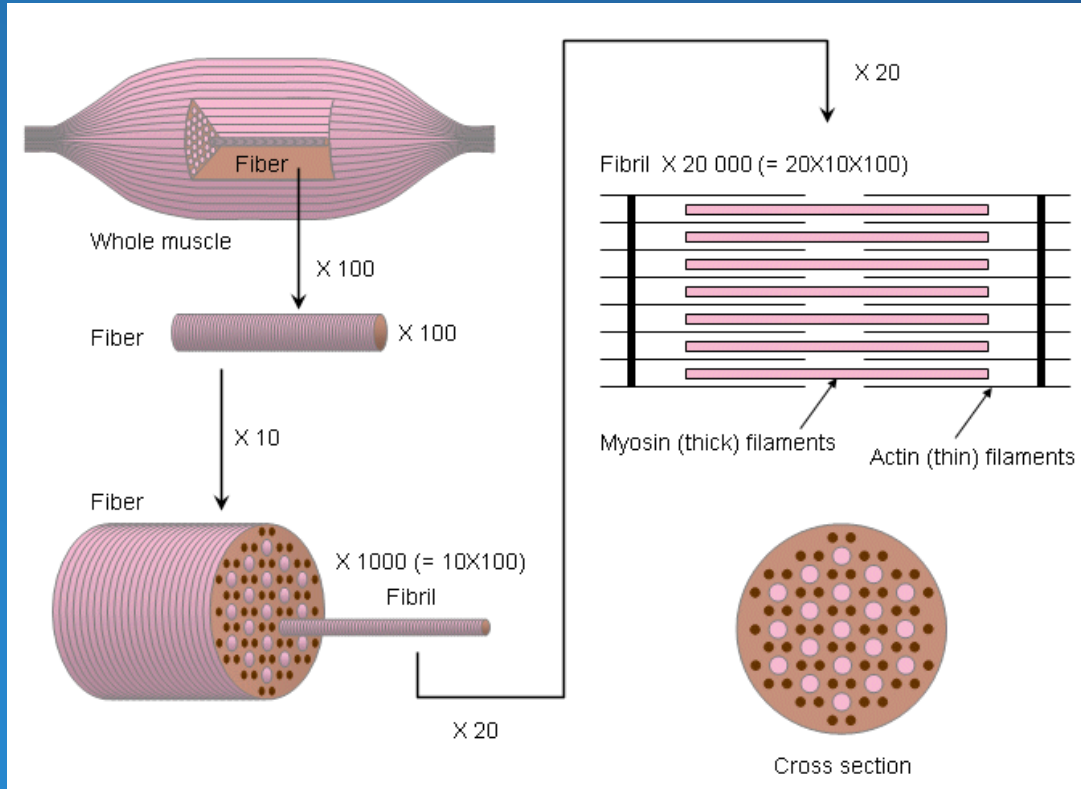
- Composed of 3 types of muscle: skeletal, smooth, and cardiac muscle
- Skeletal muscle is used for movement like walking (ex. quadriceps and calf muscles)
- Smooth muscle is in digestive and circulatory systems, found in intestines and blood vessels
- Cardiac muscle is found in the heart

How The Muscles Work

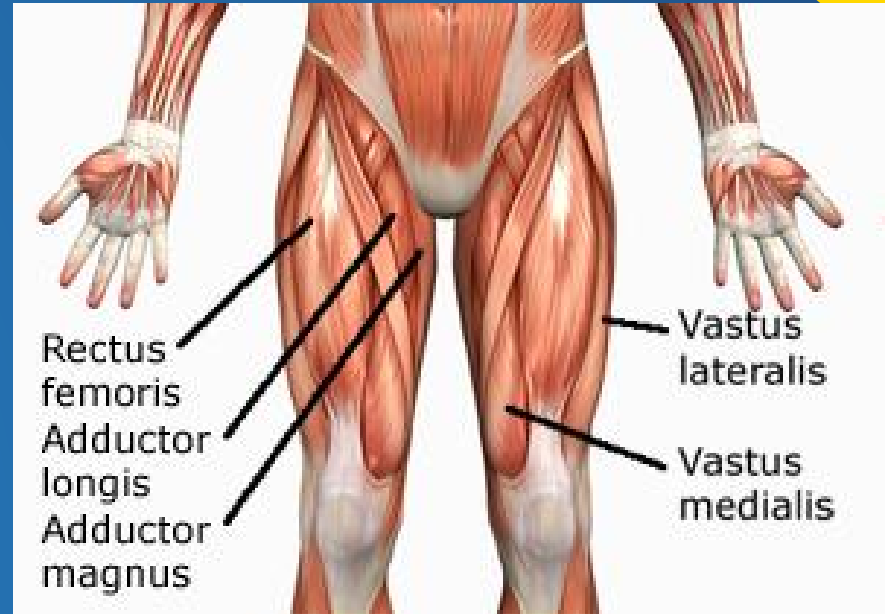
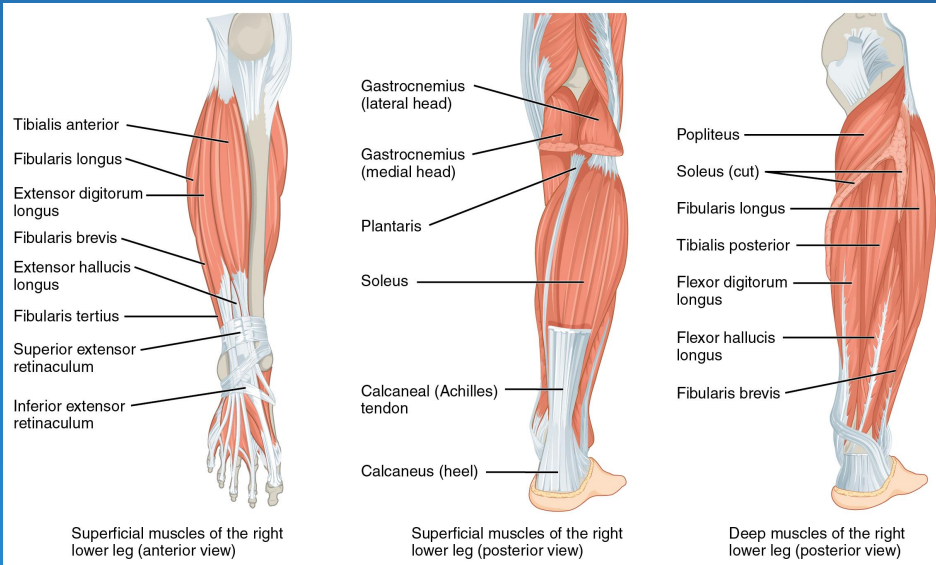
- Contractions:
 - Myosin and Actin in the thick and thin filaments cause the muscle to contract.
 - The Sliding Filament Model of Muscle Contraction
 - Thin filament slides over thick filaments.



Muscle Structure



The Muscles In The Leg



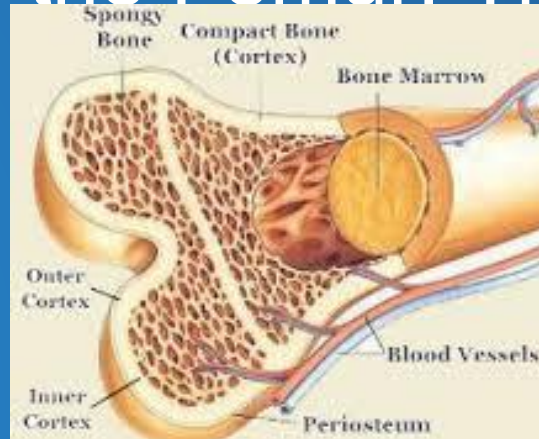
The Skeletal System

- Function:
 - 206 bones that provide structure, movement, protection, as well as blood cell protection and storage.



Structure

- The bone has four layers.
 - Periosteum, Compact Bone, Spongy Bone, & Marrow
- We showed the Femur, Tibia, & Fibula

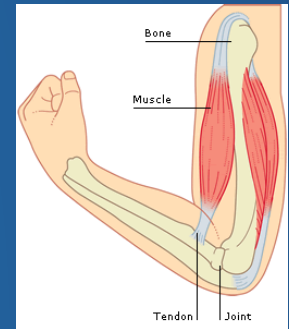


Support and Movement

- Support: The bones are able to sustain up to five times the weight of steel while staying light.
- Movement: The various joints inside the body provide a wide range of motion. They work with the muscular system to allow the skeleton to move.

How They Work Together

- The muscles and bones are grouped together to form the musculoskeletal system
 - The muscles pull our bones and allow them to move while the bones provide a place for the muscles to attach.
 - Without each other, the two systems would be unable to function.



What Our Model Displays

- Our model displays the functions of both the muscular and skeletal system
 - Muscular: How the muscles are attached to the bone and how they relax and contract.
 - Skeletal: How the bone reacts to the muscles' movement, provides structure and support, and how the marrow functions.

Our Model Plan

- PVC pipe “bone”
- Door hinge “knee joint”
- Athletic band “muscles”
- Braided rope “tendons”



Our Completed Model



The slide features a dark blue background with decorative geometric patterns on the left and right sides. These patterns consist of overlapping, colorful shapes (yellow, magenta, cyan, and grey) that resemble stylized arrows or chevrons pointing towards the center. The text is centered in the upper half of the slide.

**And now a
demonstration!**

Credits:

EC - Director of Acquiring Materials/Presentation Creation Director
Ronan - Exhibition Question Manager/Presentation Creation Assistant
Sawyer - Construction Co-Director
Gabby - Construction Co-Director
Bronte - CFO
Austin - Elastics/Junction Expert
Rosalie - Construction GM
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