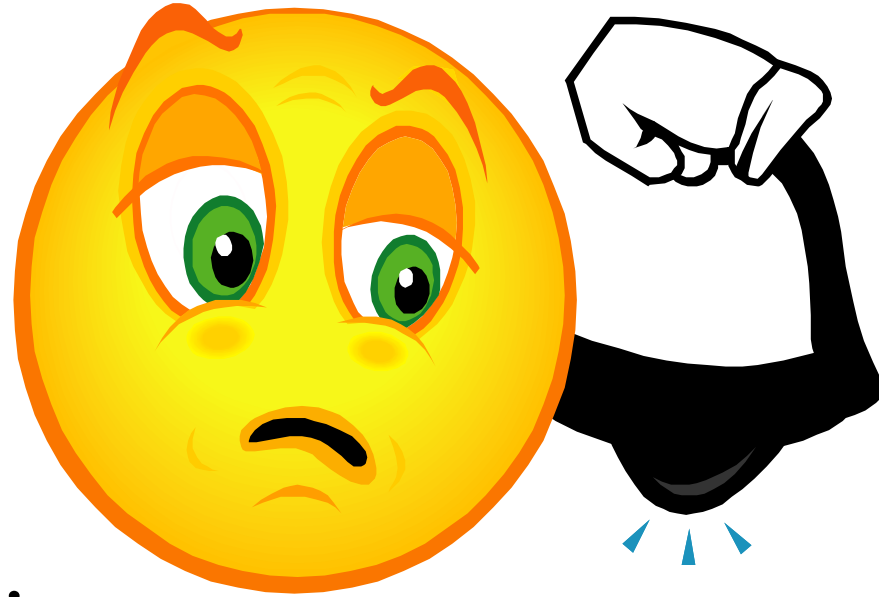


# MUSCULAR SYSTEM



**3 main responsibilities:**

# Muscular System

- **3 Main Functions**

1. Posture
2. Physical movement
3. movement of internal organs

- **3 Types of Muscle**

1. Skeletal – moves bones
2. Cardiac – heart muscle
3. Smooth – Internal organs

## Types of Muscle



Smooth muscle



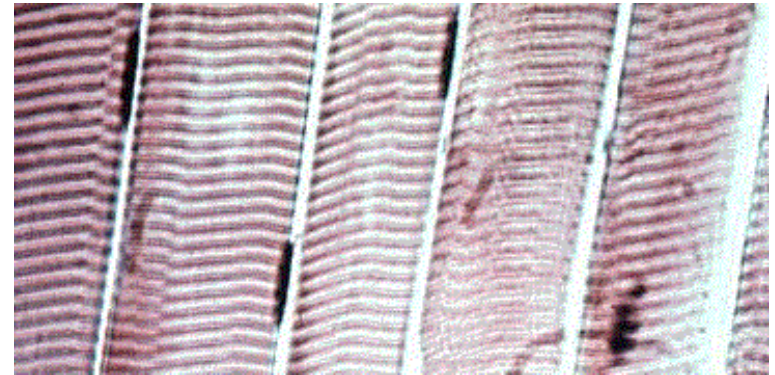
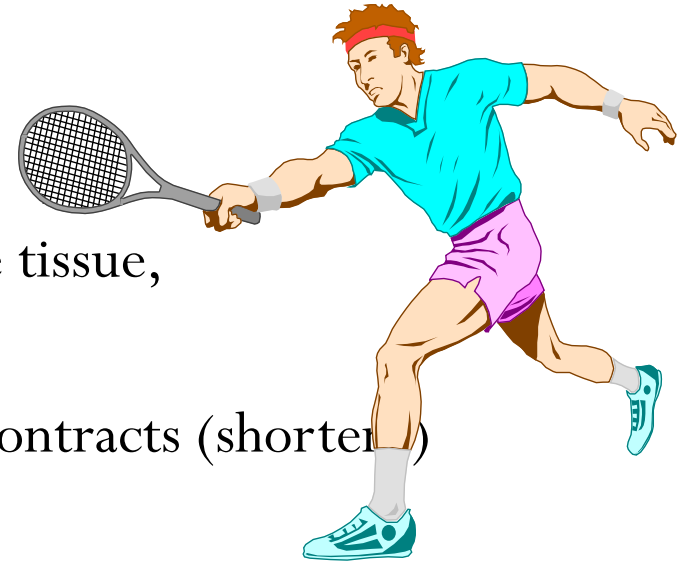
Skeletal muscle



Cardiac muscle

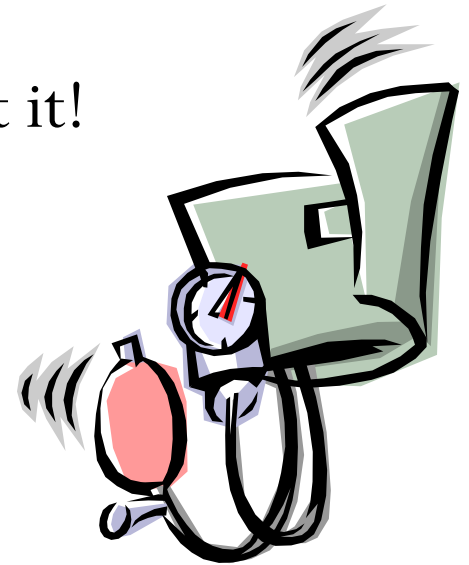
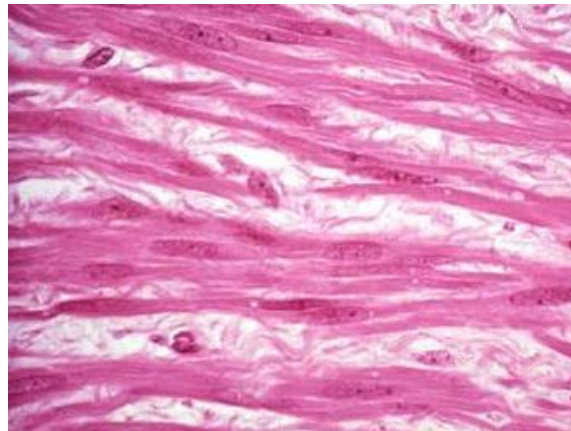
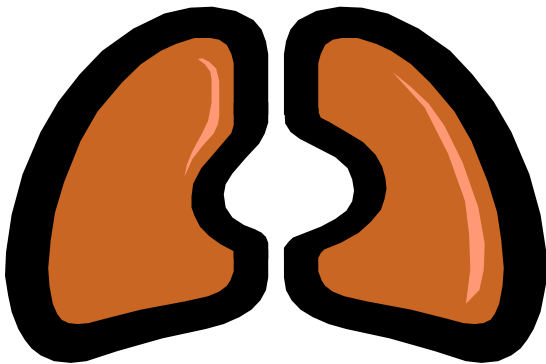
# Skeletal Muscle

- **moves bones-** How?
  - Muscles connected to bone by connective tissue, Called **tendons**
  - By “**working in pairs**” = one muscle contracts (shortens) the opposite relaxes (lengthens)
- **Striated-** what does that mean?
  - Under microscope, bands of muscle appear striped.
- **Voluntary** –under conscious control
- **contraction only** -*work in pairs*
- react quickly; tire easily
- Multi-nucleated- Why?



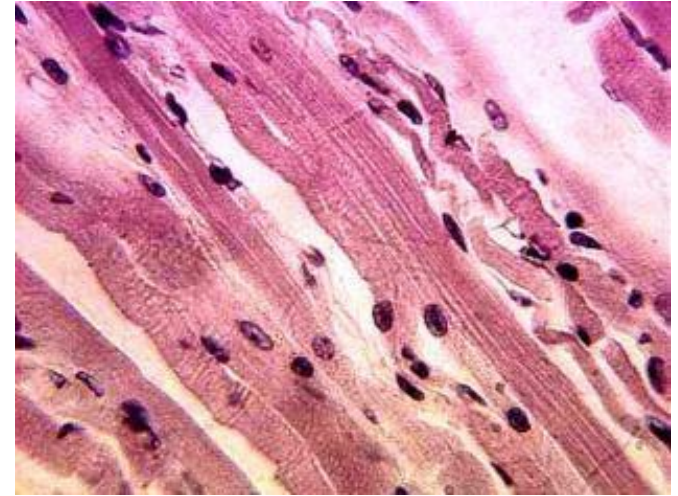
# Smooth Muscle

- Moves internal organs
  - Examples: breathing, blood pressure, digestive system
- Not striated, instead they are flat
- Involuntary- you don't have to think about it!
- Reacts *slowly*; tires *slowly*



# Cardiac Muscle

- Heart muscle aka cardiac muscle tissue
- Striated and branched- overlapping Y-shaped bands
- Involuntary- you don't have to think about it!
- Reacts quickly- immediate response to stress/ changes in body
- *Does not tire!*



# Extended Learning

- Did you know there are over 600 muscles in the body?
- The term muscle is derived from Latin *musculus*, meaning “little mouse.”
- Tendons are a connective tissue that attach muscles to bones across a joint
- Slow twitch fibers carry oxygen more efficiently; work well for aerobic sports
- Fast twitch fibers fatigue rapidly (less oxygen) but contract rapidly and powerfully.
- Muscle makes up about 50% of body weight and is denser than fat.

# Curiosity Questions:

- Which muscle is the strongest relative to its size?
- Which muscle does the most work?
- What diseases or disorders affect the muscles?