

# What Is the Human Muscular System?

## Worksheet

Muscles contract and relax to produce movement and maintain body position. Skeletal muscles are voluntary, smooth muscles are involuntary (organs), and cardiac muscle is found only in the heart.

## Questions

1. Skeletal muscle is under which type of control?

- A) Automatic
- B) Voluntary
- C) Involuntary
- D) Reflex only

2. Which muscle type has striations?

- A) Smooth only
- B) Cardiac only
- C) Skeletal and cardiac
- D) None

3. What is the basic contractile unit of a muscle?

- A) Fiber
- B) Fascicle
- C) Sarcomere
- D) Myofilament

4. Smooth muscle is found mainly in

- A) Bones
- B) Heart
- C) Organ walls
- D) Tendons

5. Explain how biceps and triceps work as antagonistic muscle pairs to bend and straighten your arm.

6. What is the role of tendons and ligaments in the muscular system?

7. Describe the sliding filament model of muscle contraction.

8. Define: What are the three types of muscle tissue?

9. Define: What connects muscle to bone?

10. Define: What is a motor unit?

## Answer Key

1. B) Voluntary - Skeletal muscles are controlled consciously by the somatic nervous system.
2. C) Skeletal and cardiac - Both skeletal and cardiac muscle have a striated (striped) microscopic appearance due to sarcomere arrangement.
3. C) Sarcomere - The sarcomere is the smallest unit that contracts, bounded by Z-discs.
4. C) Organ walls - Smooth muscle lines the walls of organs like the stomach, intestines, and blood vessels.
5. When the biceps contracts, it pulls the forearm up (flexion). The triceps relaxes. To straighten, the triceps contracts and the biceps relaxes (extension). This reciprocal action is called antagonistic pairing.
6. Tendons attach muscle to bone (allow movement transmission). Ligaments attach bone to bone (stabilize joints). Both are connective tissue but serve different roles.
7. Myosin heads pull actin filaments toward the center of a sarcomere (the basic muscle unit). This sliding shortens the muscle, creating contraction. ATP powers the process.
8. Skeletal (voluntary), smooth (involuntary in organs), and cardiac (heart only).
9. Tendons - made of strong collagen fibers.
10. A motor neuron and all skeletal muscle fibers it innervates - the functional unit of muscle contraction.

### **Bounlu**

All cards, step-by-step solutions and an AI tutor are in the Notek app.  
Promy turns exam dates into automatic reminders.