

What Is the Muscular System?

Worksheet

The muscular system consists of skeletal, smooth, and cardiac muscle tissue that contracts to produce movement, stability, and heat. Skeletal muscles pull on bones via tendons, following the sliding filament mechanism of contraction.

Questions

1. Which muscle type is found only in the heart?

- A) Skeletal
- B) Smooth
- C) Cardiac
- D) Visceral

2. What ion triggers skeletal muscle contraction?

- A) Sodium
- B) Calcium
- C) Potassium
- D) Chloride

3. Which structure connects a muscle to a bone?

- A) Ligament
- B) Tendon
- C) Cartilage
- D) Nerve

4. What describes the biceps and triceps working together?

- A) Synergistic pair
- B) Antagonistic pair
- C) Fixator pair
- D) Isolated pair

5. The human body has about 600 skeletal muscles. What are the three types of muscle tissue, and which type is under voluntary control?

6. During a bicep curl, the biceps brachii shortens while the triceps relaxes. What term describes this paired muscle action?

7. A muscle fiber receives a nerve signal, and calcium ions are released, triggering contraction within milliseconds. What is this mechanism called?

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

9. Define: Which muscle type is voluntary?

10. Define: What connects muscle to bone?

Answer Key

1. C) Cardiac - Cardiac muscle is found only in the heart and is involuntary.
2. B) Calcium - Calcium ions bind troponin, exposing binding sites for myosin.
3. B) Tendon - Tendons attach muscle to bone, allowing force transfer.
4. B) Antagonistic pair - They're an antagonistic pair - one contracts while the other relaxes.
5. Three types: skeletal, smooth, cardiac Only skeletal muscle is voluntary (consciously controlled)
6. This is an antagonistic pair The biceps (agonist) contracts while the triceps (antagonist) relaxes to allow the movement
7. This is the sliding filament theory Calcium binds troponin myosin heads bind actin filaments slide fiber shortens
8. Skeletal, smooth, and cardiac muscle.
9. Skeletal muscle - it's under conscious control.
10. Tendons.

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