Chapter 6  The Muscular System

Overview of Muscle Tissues
1. A or cardiac, B or smooth.  2. A or cardiac, C or skeletal.  3. B or smooth.  4. C or skeletal.  5. A or cardiac.
6. A or cardiac.  7. C or skeletal.  8. C or skeletal.  9. C or skeletal.

2. A. Smooth muscle.  B. Cardiac muscle.


Microscopic Anatomy of Skeletal Muscle
4. 1. G or perimysium.  2. B or epimysium.  3. I or sarcomere.  4. D or fiber.  5. A or endomysium.
6. H or sarcolemma.  7. F or myofibril.  8. E or myofilament.  9. K or tendon.  10. C or fascicle.

Figure 6–2: The endomysium is the connective tissue that surrounds each muscle cell (fiber).

5. Figure 6–3: In the student art of a contracted sarcomere, the myosin filaments should nearly touch the Z discs and the opposing actin filaments should touch each other.

Skeletal Muscle Activity
6. Depolarization.

7. Figure 6–4:

8. 1.  2.  4.  3.  7.  4.  2.  5.  5.  6.  3.  7.  6.


10. 1. G or tetanus.  2. B or isotonic contraction.  3. I or many motor units.  4. H or few motor units.
5. A or fatigue.  6. E or isometric contraction.
12. Your rate of respiration (breathing) is much faster and you breathe more deeply.
13. Check #1, #3, #4, and #7.

Muscle Movements, Types, and Names
14. Figure 6–5:

16. 1. C or prime mover. 2. B or fixator. 3. D or synergist. 4. D or synergist. 5. A or antagonist. 6. B or fixator.

Gross Anatomy of the Skeletal Muscles

20. **Figure 6–8:** 1. F. 2. E. 3. A. 4. B. 5. E.


22. **Figure 6–10:** 1. E. 2. D. 3. F. 4. A. 5. G. 6. B.
25. 1. 4. 2. 5. 3. 17. 4. 16. 5. 7. 6. 6. 7. 19. 8. 14. 9. 18. 10. 12. 11. 11. 12. 10. 13. 21.
14. 1. 15. 2. 16. 3. 17. 15. 18. 20. 19. 13. 20. 9. 21. 8.
26. 1. 2. 1. 2. 1. 3. 5. 4. 9. 5. 7. 6. 4. 7. 12. 8. 3. 9. 8. 10. 10. 11. 11. 12. 6.

Developmental Aspects of the Muscular System

The Incredible Journey

At the Clinic
29. Tendons attaching at the anterior wrist are involved in wrist and finger flexion. Malcolm will lose his ability to make a fist and grasp a baseball.
30. The hamstrings can be strained (pulled) when the hip is flexed and the knee is vigorously extended at the same time.
31. The rectus abdominis is a narrow, medially placed muscle that does not extend completely across the iliac regions.
   No, if the incision was made as described, the rectus abdominis was not cut.
32. The latissimus dorsi and the trapezius, which together cover most of the superficial surface of the back, are receiving most of the massage therapist’s attention.
33. The chances are good that the boy has Duchenne muscular dystrophy. This condition is fatal when it impairs the respiratory muscles.
34. By reducing the size of the abdomen, the abdominal contents are forced into a smaller space which would increase the intra-abdominal pressure. The rise in intra-abdominal pressure would, in turn, force the vertebrae to move farther apart, reducing vertebral compression and pressure on the nerve fibers that transmit pain.
35. Chemical A would be a better muscle relaxant because it prevents stimulation of the muscle cells by preventing ACh from binding to the ACh receptors on the sarcolemma. Chemical B would lead to greater muscle irritability and stronger, more sustained muscle contraction, exactly the opposite of what we are seeking to accomplish.