

Muscle Manual Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

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SAMPLE

Questions

SAMPLE

- 1. What is the proximal attachment of the anconeus muscle?**
 - A. Medial epicondyle of the humerus**
 - B. Lateral epicondyle of the humerus**
 - C. Infraglenoid tubercle of the scapula**
 - D. Coronoid process of the ulna**
- 2. Which injury is commonly associated with overtraining in athletes?**
 - A. Fracture**
 - B. Tendinitis**
 - C. Sprain**
 - D. Muscle strain**
- 3. Which nerve innervates the rhomboid major?**
 - A. Dorsal scapular nerve**
 - B. Long thoracic nerve**
 - C. Medial pectoral nerve**
 - D. Subscapular nerve**
- 4. What is the distal attachment of the subscapularis muscle?**
 - A. Medial epicondyle of the humerus**
 - B. Lesser tubercle of the humerus**
 - C. Greater tubercle of the humerus**
 - D. Anatomical neck of the humerus**
- 5. Which of the following actions is associated with the clavicular head of the pectoralis major?**
 - A. Shoulder extension**
 - B. Shoulder flexion**
 - C. Shoulder adduction**
 - D. Shoulder medial rotation**
- 6. What is the distal attachment of the teres major muscle?**
 - A. Greater tubercle of the humerus**
 - B. Medial lip of the intertubercular groove of the humerus**
 - C. Deltoid tuberosity of the humerus**
 - D. Inferior angle of the scapula**

- 7. What is one of the primary actions of the subscapularis?**
- A. Shoulder abduction**
 - B. Shoulder medial rotation**
 - C. Shoulder extension**
 - D. Shoulder lateral rotation**
- 8. What is the proximal attachment of the deltoid muscle?**
- A. Clavicle lateral portion of anterior border, acromion and spine of scapula**
 - B. Greater tubercle of the humerus**
 - C. Medial lip of the intertubercular groove**
 - D. Supraspinous fossa of scapula**
- 9. Where is the proximal attachment of the subclavius muscle located?**
- A. The junction of rib 1 and its costal cartilage**
 - B. The lower margin of the scapula**
 - C. The acromion process**
 - D. The superior aspect of the clavicle**
- 10. What is the role of the neuromuscular junction?**
- A. It stores energy for muscle contraction**
 - B. It is where a motor neuron connects to a muscle fiber for contraction communication**
 - C. It controls the heart rate and respiratory muscles**
 - D. It is a site for muscle fatigue recovery**

Answers

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- 1. B**
- 2. B**
- 3. A**
- 4. B**
- 5. B**
- 6. B**
- 7. B**
- 8. A**
- 9. A**
- 10. B**

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Explanations

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1. What is the proximal attachment of the anconeus muscle?

- A. Medial epicondyle of the humerus**
- B. Lateral epicondyle of the humerus**
- C. Infraglenoid tubercle of the scapula**
- D. Coronoid process of the ulna**

The anconeus muscle is primarily attached to the lateral epicondyle of the humerus. This muscle is small and triangular in shape, located at the elbow joint, and plays a role in extending the forearm. The attachment to the lateral epicondyle allows it to contribute to the movement of the elbow as well as provide stability during extension. In contrast, the other options represent different anatomical locations relevant to other muscles but not to the anconeus. The medial epicondyle of the humerus is associated with several flexor muscles of the forearm, while the infraglenoid tubercle of the scapula serves as an attachment point for part of the triceps brachii. The coronoid process of the ulna is the insertion point for muscles like the brachialis and also provides a surface for ligaments but does not serve as the proximal attachment for the anconeus. Thus, the proximal attachment to the lateral epicondyle is significant for understanding the muscle's role in arm movement and stability at the elbow.

2. Which injury is commonly associated with overtraining in athletes?

- A. Fracture**
- B. Tendinitis**
- C. Sprain**
- D. Muscle strain**

Overtraining in athletes is a condition that occurs when there is an imbalance between training intensity and recovery. This can lead to various types of injuries, but tendinitis is particularly associated with this phenomenon. Tendinitis is an inflammation of the tendons, often a result of overuse. When athletes engage in training that is too intense without adequate rest or recovery periods, their muscles and tendons do not heal properly. This can lead to repetitive strain injuries, with tendinitis being a common outcome due to the continuous stress placed on the tendons from high-volume or intense training regimens. In contrast, fractures, sprains, and muscle strains are usually related to acute injuries or specific incidents, whereas tendinitis more typically accumulates over time due to chronic overuse and insufficient recovery, making it a hallmark sign of overtraining syndrome. Thus, identifying tendinitis as the injury associated with overtraining emphasizes the importance of balancing workout demands with proper recovery strategies to maintain long-term athletic health.

3. Which nerve innervates the rhomboid major?

- A. Dorsal scapular nerve**
- B. Long thoracic nerve**
- C. Medial pectoral nerve**
- D. Subscapular nerve**

The rhomboid major muscle is primarily innervated by the dorsal scapular nerve, which arises from the roots of the brachial plexus. This specific nerve is responsible for providing motor innervation to the rhomboid major, allowing it to perform its function of retracting the scapula and stabilizing it against the thoracic wall. Understanding the role of the dorsal scapular nerve is crucial, as it not only innervates the rhomboid major but also supplies the rhomboid minor and the levator scapulae, which are involved in similar movements of the scapula. In contrast, the other nerves listed are associated with different muscle groups. The long thoracic nerve innervates the serratus anterior muscle, which plays a significant role in scapular protraction and stabilizing the scapula. The medial pectoral nerve mainly innervates the pectoralis major and pectoralis minor, which are chest muscles not directly involved with the actions of the rhomboids. The subscapular nerve provides innervation to the subscapularis and teres major muscles, which are located in the shoulder area and are involved in shoulder movement rather than scapular retraction. Thus, the specific

4. What is the distal attachment of the subscapularis muscle?

- A. Medial epicondyle of the humerus**
- B. Lesser tubercle of the humerus**
- C. Greater tubercle of the humerus**
- D. Anatomical neck of the humerus**

The subscapularis muscle is one of the four rotator cuff muscles, primarily responsible for its role in shoulder movements. Its distal attachment is specifically to the lesser tubercle of the humerus. This attachment point is crucial as it allows the subscapularis to function effectively in medially rotating and adducting the arm. The lesser tubercle serves as a pivotal site for muscle attachment, ensuring the muscle can exert its force optimally. This design supports various shoulder functions, including stabilization of the shoulder joint during movements. The alignment of the muscle fibers also aids in engaging the joint both in dynamic and static states. Understanding this specific attachment enhances your comprehension of both muscle function and the broader biomechanics of shoulder movement, highlighting the significance of muscular attachments in anatomical and functional contexts.

5. Which of the following actions is associated with the clavicular head of the pectoralis major?

- A. Shoulder extension**
- B. Shoulder flexion**
- C. Shoulder adduction**
- D. Shoulder medial rotation**

The clavicular head of the pectoralis major is primarily involved in shoulder flexion. This muscle head originates from the medial half of the clavicle and, when activated, plays a crucial role in lifting the arm forward, which is the definition of shoulder flexion. The actions related to the pectoralis major as a whole include medial rotation and adduction of the shoulder, but these movements are primarily attributed to the sternal head. The distinction is important; while the entire pectoralis major contributes to these actions, the specific role of the clavicular head is most pronounced in flexing the shoulder joint, especially when the arm is moved from a position of extension to flexion. Thus, the association of shoulder flexion with the clavicular head of the pectoralis major accurately reflects its anatomical function and contribution to arm movement.

6. What is the distal attachment of the teres major muscle?

- A. Greater tubercle of the humerus**
- B. Medial lip of the intertubercular groove of the humerus**
- C. Deltoid tuberosity of the humerus**
- D. Inferior angle of the scapula**

The teres major muscle has its distal attachment at the medial lip of the intertubercular groove of the humerus. This anatomical feature is significant as the intertubercular groove serves as a conduit for tendons of the shoulder muscles and allows for the muscle to contribute to the movements of the shoulder joint, such as adduction and medial rotation of the arm. By attaching to this specific area, the teres major plays an integral role in the stability and function of the shoulder, connecting the scapula to the humerus effectively. The other options do not accurately represent the distal attachment of the teres major. The greater tubercle serves as a point of attachment for other muscles like the rotator cuff, while the deltoid tuberosity is specifically for the deltoid muscle. The inferior angle of the scapula refers to another part of the scapula itself rather than a point of muscle attachment relevant to the motion facilitated by the teres major.

7. What is one of the primary actions of the subscapularis?

- A. Shoulder abduction**
- B. Shoulder medial rotation**
- C. Shoulder extension**
- D. Shoulder lateral rotation**

The subscapularis is one of the four rotator cuff muscles and is primarily responsible for shoulder medial rotation. This muscle is located on the anterior (front) surface of the scapula and inserts onto the lesser tubercle of the humerus. When it contracts, it pulls the humerus inward towards the body, resulting in the inward or medial rotation of the shoulder joint. This action is crucial in various movements, such as reaching across the body or during certain throwing activities, making it an essential component in shoulder stability and function. Understanding this function of the subscapularis also highlights its role in maintaining proper shoulder mechanics and preventing dislocations, especially during activities that demand a lot of shoulder movement. The other options, while related to shoulder movement, describe actions that the subscapularis does not perform: abduction and lateral rotation are facilitated by other muscles, while shoulder extension is primarily the role of muscles such as the latissimus dorsi and teres major.

8. What is the proximal attachment of the deltoid muscle?

- A. Clavicle lateral portion of anterior border, acromion and spine of scapula**
- B. Greater tubercle of the humerus**
- C. Medial lip of the intertubercular groove**
- D. Supraspinous fossa of scapula**

The deltoid muscle has a proximal attachment that is crucial for its function in shoulder movement. This muscle originates from three distinct points: the lateral portion of the anterior border of the clavicle, the acromion, and the spine of the scapula. These three attachment sites allow the deltoid to cover a significant portion of the shoulder and contribute to its ability to abduct, flex, and extend the arm. The attachment to the clavicle provides stability and a robust anchoring point for the anterior fibers, while the acromion and spine of the scapula serve as the lateral and posterior attachments, respectively, allowing the deltoid to act on the humerus in multiple planes of motion. This arrangement is essential for the deltoid's role in various shoulder movements, including raising the arm and rotating the shoulder. Other choices do not accurately represent the proximal attachment of the deltoid, as they refer to different structures or locations relevant to other muscles or parts of the shoulder anatomy. The greater tubercle of the humerus, for instance, is where some of the rotator cuff muscles attach; the medial lip of the intertubercular groove is associated with the biceps brachii; and the supraspin

9. Where is the proximal attachment of the subclavius muscle located?

- A. The junction of rib 1 and its costal cartilage**
- B. The lower margin of the scapula**
- C. The acromion process**
- D. The superior aspect of the clavicle**

The subclavius muscle is a small muscle that plays a role in stabilizing the clavicle during shoulder movements. Its proximal attachment, or origin, is specifically located at the junction of the first rib and its costal cartilage. This anatomical positioning allows the subclavius to effectively stabilize and protect the underlying structures, such as the brachial plexus and subclavian vessels, which are crucial for upper limb function. Understanding the proximal attachment is essential because it helps in comprehending how the muscle contributes to movements and stability in the shoulder girdle. The other options given might refer to locations associated with different structures or muscles within the shoulder region, but they do not pertain to the subclavius, which distinctly originates at the first rib junction.

10. What is the role of the neuromuscular junction?

- A. It stores energy for muscle contraction**
- B. It is where a motor neuron connects to a muscle fiber for contraction communication**
- C. It controls the heart rate and respiratory muscles**
- D. It is a site for muscle fatigue recovery**

The neuromuscular junction plays a crucial role in muscle contraction by serving as the communication point between a motor neuron and a muscle fiber. At this junction, the motor neuron releases the neurotransmitter acetylcholine, which then binds to receptors on the muscle fiber's membrane. This binding triggers an action potential in the muscle cell, leading to a series of events that ultimately result in muscle contraction. Understanding this mechanism is essential because it highlights how the nervous system controls voluntary muscle movements. Without the proper functioning of the neuromuscular junction, signals from the nervous system would not effectively reach muscle fibers, impeding movement and coordination. The other choices refer to various aspects of muscle function and physiology but do not accurately describe the role of the neuromuscular junction in muscle contraction. For instance, while energy storage (such as ATP and phosphocreatine) is crucial for muscle activity, it does not describe the specific role of the neuromuscular junction. Similarly, control of heart rate and respiratory muscles involves different neural pathways and junctions, and recovery from muscle fatigue pertains to metabolic and physiological processes that occur post-exercise, not the communication mechanism at the neuromuscular junction.