National Academy of Sports Medicine (NASM) Corrective Exercise Specialist (CES) Practice Exam (Sample)

Study Guide

Everything you need from our exam experts!

Questions

1. In a client who has had a Cesarean section, which muscle group may be weak as a result of this surgical procedure?

A. Obliques

B. Abdominal complex

C. Hip flexors

D. Lower back muscles

2. Which common postural deviation can corrective exercise help address?

A. Rounded shoulders

B. Flat feet

C. Swayback posture

D. Lumbar lordosis

3. What is the primary function of the Posterior Oblique Subsystem?

A. To stabilize the lumbar spine

B. To transfer forces from the transverse plane to the sagittal plane during walking or running

C. To enhance upper body strength

D. To improve flexibility of the hips

4. If a client shows an upper extremity movement impairment syndrome, which muscles are likely tight?

A. Lower trapezius, serratus anterior

B. Upper trapezius, levator scapulae

C. Infraspinatus, teres minor

D. Subscapularis, latissimus dorsi

5. What type of movement pattern might a client with knee valgus demonstrate?

A. Hip flexion and internal rotation

B. Plantar flexion and inversion

C. Adduction and external rotation

D. Protraction of the scapula

6. What condition is considered an absolute contraindication for self-myofascial release?

A. Advanced diabetes

B. Chronic arthritis

C. Hypertension

D. Muscle strains

7. Which muscle eccentrically decelerates humeral external rotation, abduction, and flexion?

A. Teres Minor

B. Teres Major

C. Latissimus Dorsi

D. Infraspinatus

8. What is the last component of the Corrective Exercise Continuum?

A. Activation techniques

B. Rehabilitation strategies

C. Integration techniques

D. Assessment methods

9. What is a benefit of using dynamic warm-ups before training?

A. Increases flexibility and range of motion

B. Increases blood flow and prepares muscles for activity

C. Enhances mental focus and concentration

D. Reduces the risk of injury during static stretches

10. Which muscle concentrically accelerates external rotation of the humerus?

A. Teres Minor

B. Deltoid

C. Infraspinatus

D. Teres Major

Answers

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

Explanations

1. In a client who has had a Cesarean section, which muscle group may be weak as a result of this surgical procedure?

A. Obliques

B. Abdominal complex

C. Hip flexors

D. Lower back muscles

After a Cesarean section, the abdominal complex is often weakened due to the surgical procedure that involves an incision through the abdominal wall. The layers of abdominal muscles are cut during the surgery, which can lead to atrophy or decreased strength in this muscle group as it heals. This weakening can affect the overall stability and function of the core, impacting posture and movement patterns. While the obliques and other muscles of the abdominal region may also be affected, the term "abdominal complex" encompasses all layers of the abdominal musculature, including the rectus abdominis, obliques, and transversus abdominis. Therefore, focusing on the strength of the entire abdominal complex is crucial in a corrective exercise program for individuals recovering from a Cesarean section. It is important to note that hip flexors and lower back muscles may also experience changes due to compensation patterns or changes in movement; however, the primary focus for weakness directly resulting from the surgical procedure itself lies within the abdominal complex.

2. Which common postural deviation can corrective exercise help address?

A. Rounded shoulders

B. Flat feet

C. Swayback posture

D. Lumbar lordosis

Swayback posture is characterized by an excessive anterior tilt of the pelvis and a posterior shift of the thoracic spine, leading to a tightening of certain muscle groups and the lengthening of others. This deviation can result in discomfort and potential injury over time if not addressed. Corrective exercise can effectively target this postural issue by incorporating specific interventions that focus on strengthening weakened muscles and stretching tight muscles. For example, exercises that strengthen the abdominal muscles and glutes can help to realign the pelvis, while stretches for the hip flexors and chest can alleviate the tightness that contributes to swayback posture. This balance between strength and flexibility is essential in restoring proper alignment and function, making corrective exercise a valuable approach to addressing this specific postural deviation. While rounded shoulders, flat feet, and lumbar lordosis are also common postural deviations that can benefit from corrective exercise, swayback posture requires particular attention to specific muscle imbalances that corrective strategies are designed to address effectively.

3. What is the primary function of the Posterior Oblique Subsystem?

A. To stabilize the lumbar spine

B. To transfer forces from the transverse plane to the sagittal plane during walking or running

C. To enhance upper body strength

D. To improve flexibility of the hips

The primary function of the Posterior Oblique Subsystem is to transfer forces from the transverse plane to the sagittal plane during activities such as walking or running. This subsystem is a group of muscles, including the latissimus dorsi and the contralateral gluteus maximus, that work synergistically to create a powerful connection between the upper and lower body. When one leg steps forward, this subsystem helps to optimize the transfer of energy and stability, facilitating efficient movement and balance during locomotion. In this context, while stabilizing the lumbar spine is important, it is not the primary role of the Posterior Oblique Subsystem. Its main contribution lies in force transfer and coordination between the upper and lower body, especially across the transverse plane. Enhancing upper body strength or improving flexibility of the hips relates to other muscle functions and systems, but those are not the core functions associated specifically with the Posterior Oblique Subsystem. Therefore, the emphasis on force transfer during dynamic activities like walking or running accurately reflects the subsystem's purpose in functional movement patterns.

4. If a client shows an upper extremity movement impairment syndrome, which muscles are likely tight?

A. Lower trapezius, serratus anterior

B. Upper trapezius, levator scapulae

C. Infraspinatus, teres minor

D. Subscapularis, latissimus dorsi

When considering upper extremity movement impairment syndromes, it is essential to understand the role of the muscles involved in shoulder and scapular mechanics. In this case, the upper trapezius and levator scapulae are commonly associated with tightness in individuals who exhibit movement impairment. The upper trapezius is a prominent muscle involved in elevating the scapula and plays a significant role during shoulder movements. When this muscle becomes overactive and tight, it can lead to restrictions in shoulder mobility and contribute to compensatory movement patterns. Similarly, the levator scapulae functions to elevate and rotate the scapula, and excessive tension in this muscle can result in altered mechanics and potential pain in the neck and shoulder region. Both of these muscles often become hypertonic due to poor posture—such as rounded shoulders or forward head position—which is prevalent in individuals who spend extended periods in front of a computer or device. Addressing the tightness of the upper trapezius and levator scapulae is crucial in corrective exercise because releasing tension in these muscles can help restore proper movement patterns and improve shoulder function. In contrast, while the lower trapezius and serratus anterior are important stabilizers of the scapula that may be underactive in certain

5. What type of movement pattern might a client with knee valgus demonstrate?

A. Hip flexion and internal rotation

B. Plantar flexion and inversion

C. Adduction and external rotation

D. Protraction of the scapula

A client with knee valgus typically exhibits hip flexion and internal rotation. Knee valgus occurs when the knees angle inward towards each other, which is often accompanied by a compensatory movement pattern at the hip. In hip flexion, the hip joint moves to a flexed position, and internal rotation signifies that the femur is rotating inward. This pattern can contribute to the valgus position of the knees by altering the biomechanics of the lower extremity during activities such as walking, running, or squatting. Understanding this movement pattern is crucial for the corrective exercise specialist, as addressing hip flexion and internal rotation can help improve alignment and function, potentially reducing the risk of injury and enhancing overall movement quality.

6. What condition is considered an absolute contraindication for self-myofascial release?

A. Advanced diabetes

B. Chronic arthritis

C. Hypertension

D. Muscle strains

The condition recognized as an absolute contraindication for self-myofascial release is advanced diabetes. When a person has advanced diabetes, they may experience various complications, including poor circulation, delayed wound healing, and peripheral neuropathy. These complications can increase the risk of injury or adverse effects during techniques such as self-myofascial release, which involves applying pressure to muscles and fascia that could exacerbate these issues. In the case of chronic arthritis, hypertension, or muscle strains, while caution is warranted, they are not considered absolute contraindications. Individuals with chronic arthritis may often benefit from a properly guided and modified approach to myofascial release techniques, while those with hypertension can typically manage pressure techniques with careful consideration. Muscle strains may require a more cautious approach or modification, but again, they do not automatically preclude the use of myofascial release. Hence, the unique complications associated with advanced diabetes clearly delineate it as a condition where self-myofascial release should be avoided entirely.

7. Which muscle eccentrically decelerates humeral external rotation, abduction, and flexion?

A. Teres Minor

B. Teres Major

C. Latissimus Dorsi

D. Infraspinatus

The muscle that eccentrically decelerates humeral external rotation, abduction, and flexion is the infraspinatus. This muscle plays a crucial role in the stabilization of the shoulder joint by assisting in the deceleration phase of shoulder movements. When the arm is raised externally or abducted, the infraspinatus works eccentrically to control and slow down the movement, thereby preventing excessive motion that could lead to injury. The teres minor and teres major do have roles in shoulder movement and stabilization, but they are not primarily responsible for the deceleration of external rotation, abduction, and flexion in the same way the infraspinatus does. The latissimus dorsi also contributes to arm movements but is more associated with pulling actions rather than deceleration of the specific movements mentioned. Understanding the specific actions of these muscles is essential for effective exercise programming and corrective strategies, particularly in managing shoulder health and function.

8. What is the last component of the Corrective Exercise Continuum?

A. Activation techniques

B. Rehabilitation strategies

C. Integration techniques

D. Assessment methods

The last component of the Corrective Exercise Continuum is integration techniques. This phase is crucial as it involves applying the corrective strategies learned in previous stages to the actual functional movements and activities of daily living. During integration, the goal is to reinforce the newly established movement patterns and ensure that clients can perform exercises and activities efficiently while reducing the risk of injury. This phase bridges the gap between corrective exercise and the practical application of those corrections in real-world settings. It emphasizes the importance of functional training that incorporates the body's kinetic chain, allowing clients to move correctly under various conditions, thereby enhancing overall performance and reducing the likelihood of compensation-related issues. Integration techniques prepare individuals to transition smoothly from focused corrective exercises back to regular exercise routines or functional activities, ensuring that the benefits of corrective strategies are maintained in everyday life.

9. What is a benefit of using dynamic warm-ups before training?

A. Increases flexibility and range of motion

B. Increases blood flow and prepares muscles for activity

C. Enhances mental focus and concentration

D. Reduces the risk of injury during static stretches

The benefit of using dynamic warm-ups before training primarily lies in their ability to increase blood flow and prepare muscles for activity. Dynamic warm-ups involve movement-based exercises that elevate the heart rate, enhances circulation, and improve muscle temperature. This physiological change helps to increase oxygen delivery to the muscles and reduces stiffness, thereby making the muscles more pliable and ready for the demands of the workout. By preparing the body in this way, dynamic warm-ups can also enhance overall performance during training sessions. While increasing flexibility and range of motion, enhancing mental focus, and reducing injury risk during static stretches are valuable components of a comprehensive warm-up routine, they do not primarily encapsulate the most immediate and direct benefit of dynamic warm-ups compared to the increased blood flow and muscle readiness they provide. Dynamic movements specifically target the muscles and joints in a way that static stretches do not, ensuring a more functional preparation for subsequent physical activity.

10. Which muscle concentrically accelerates external rotation of the humerus?

A. Teres Minor

B. Deltoid

C. Infraspinatus

D. Teres Major

The teres minor is the muscle that plays a significant role in the external rotation of the humerus. As a part of the rotator cuff group, the teres minor assists in stabilization and movement of the shoulder joint. When it contracts concentrically, it creates the necessary motion to rotate the humerus outward. This function is vital, especially in activities that require overhead motions or the throwing actions commonly seen in sports. In contrast, while the infraspinatus also contributes to external rotation of the humerus, it was not the selected answer in this case. The deltoid muscle primarily functions in arm abduction and has anterior and posterior parts that facilitate various movements in the shoulder, but it is not the main muscle responsible for the concentric acceleration of external rotation specifically. Meanwhile, the teres major is involved primarily in internal rotation and extension of the humerus rather than external rotation. Understanding the distinct roles of these muscles is crucial for corrective exercise specialists, as knowing which muscles to target for particular movements can greatly influence rehabilitation and performance training outcomes.