

National Board of Chiropractic Examiners (NBCE) Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

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SAMPLE

Questions

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- 1. Which line can be used to assess for fracture of the femoral neck?**
 - A. Skinner's Line**
 - B. Beck's Line**
 - C. Rankin's Line**
 - D. Johnson's Line**
- 2. The primary goal in the assessment of a patient with dementia is to a _____?**
 - A. Identify the type of dementia**
 - B. Determine functional ability and needs**
 - C. Evaluate psychiatric history**
 - D. Establish a treatment plan**
- 3. Vegans, who exclude all animal products from their diets, need to be advised regarding alternative sources of what?**
 - A. Calcium**
 - B. Iron**
 - C. Vitamin B12**
 - D. All of the above**
- 4. What is the typical symptom of a patient with aortic dissection?**
 - A. Severe chest pain**
 - B. Radiating arm pain**
 - C. Shortness of breath**
 - D. Persistent cough**
- 5. Group 1a afferents arise from which type of receptors?**
 - A. Joint receptors**
 - B. Muscle spindles**
 - C. Mechanoreceptors**
 - D. Thermoreceptors**

- 6. What is a known delayed sign of acetaminophen poisoning?**
- A. Increased blood pressure**
 - B. Confusion or disorientation**
 - C. Jaundice**
 - D. Seizures**
- 7. What condition is characterized by hypertonicity of muscles, tenderness, and temperature changes of the skin?**
- A. Decreased axoplasmic transport**
 - B. Increased axoplasmic transport**
 - C. Muscle spasm**
 - D. Trigger points**
- 8. What physiological change is responsible for decreased bone mass and increased fracture risk that occur with aging?**
- A. Osteopenia**
 - B. Osteoporosis**
 - C. Arthritis**
 - D. Sarcopenia**
- 9. Which condition is characterized by inflammation of the sacroiliac joints?**
- A. Ankylosing spondylitis**
 - B. Osteoarthritis**
 - C. Rheumatoid arthritis**
 - D. Paget's disease**
- 10. What is the primary cause of plantar fasciitis in adults?**
- A. Excessive running**
 - B. Obesity**
 - C. Improper footwear**
 - D. Age-related degeneration**

Answers

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

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Explanations

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1. Which line can be used to assess for fracture of the femoral neck?

A. Skinner's Line

B. Beck's Line

C. Rankin's Line

D. Johnson's Line

Skinner's Line is an important radiological assessment tool used to evaluate the femoral neck for possible fractures. This line is drawn on an X-ray by connecting the tip of the greater trochanter of the femur to the inferior aspect of the femoral head. This creates a line that helps to visualize the positioning of the femoral neck in relation to the greater trochanter. When assessing for a femoral neck fracture, the relationship of the femoral neck to Skinner's Line is critical. If the femoral neck appears above the line, it may indicate a fracture, as the normal anatomy placement is expected to fall below this line. This method provides a clear visual reference that can assist healthcare professionals in diagnosing fractures that may not be obvious upon a cursory examination. Other lines such as Beck's Line, Rankin's Line, and Johnson's Line, while potentially used in different contexts, are not specifically designated for the assessment of femoral neck fractures. Hence, Skinner's Line is favored in this clinical setting due to its precise methodology and relevance in guiding treatment decisions based on observed anatomy.

2. The primary goal in the assessment of a patient with dementia is to a _____?

A. Identify the type of dementia

B. Determine functional ability and needs

C. Evaluate psychiatric history

D. Establish a treatment plan

Determining functional ability and needs is essential when assessing a patient with dementia because it directly impacts the patient's quality of life and the level of care they require. Understanding how dementia affects a patient's daily activities allows healthcare providers to tailor their approach to the individual's unique challenges and capabilities. This comprehensive assessment can help in making informed decisions about supportive services, rehabilitation efforts, and safety measures. While identifying the type of dementia can provide valuable insights into the progression of the disease and potential treatment options, and evaluating psychiatric history can help in understanding coexisting mental health issues, the immediate priority in managing dementia often centers around how the condition affects everyday functioning. Establishing a treatment plan is crucial but is typically done after assessing the functional capabilities and specific needs of the patient. Hence, focusing on functional ability and needs is a foundational step in the overall management of dementia.

3. Vegans, who exclude all animal products from their diets, need to be advised regarding alternative sources of what?

A. Calcium

B. Iron

C. Vitamin B12

D. All of the above

Vegans, by eliminating all animal products from their diets, can inadvertently lack certain essential nutrients that are primarily found in animal-derived foods. While calcium, iron, and vitamin B12 are critical to overall health, each plays a unique role that makes it important for those following a vegan diet to seek alternative sources. Calcium is vital for bone health, and while there are plant-based sources like fortified plant milks and leafy green vegetables, the bioavailability of calcium from these sources can differ from dairy, necessitating careful dietary planning. Iron is essential for the production of hemoglobin and energy metabolism, with plant-based sources being available in legumes, nuts, and seeds. However, non-heme iron from plant sources is less readily absorbed by the body compared to heme iron from animal sources, often requiring additional strategies (like pairing with vitamin C rich foods) to enhance absorption. Vitamin B12 is crucial for nerve function and the formation of red blood cells, and it is primarily found in animal products. Vegans must specifically seek out fortified foods or supplements to meet their B12 needs, as deficiency can lead to serious health implications. Thus, advising vegans about alternative sources of calcium, iron, and vitamin B12 is essential to ensure they maintain a

4. What is the typical symptom of a patient with aortic dissection?

A. Severe chest pain

B. Radiating arm pain

C. Shortness of breath

D. Persistent cough

Aortic dissection is characterized by the tearing of the inner layer of the aorta, leading to severe and sudden pain. The typical symptom experienced by patients with aortic dissection is severe chest pain, often described as sharp or ripping in nature. This pain can also radiate to the back or shoulders, which is indicative of pain that results from the disruption and stretching of the aorta. The mechanism of the pain relates to the sudden onset of the condition, causing intense physiological stress and signaling that is perceived as pain. While patients may also experience other symptoms like radiating pain, shortness of breath, or even a persistent cough as secondary responses or complications, the hallmark symptom that stands out for aortic dissection is indeed the severe chest pain. This symptom is critical for prompt diagnosis and intervention, making it a key focus in assessing patients suspected of having this serious condition.

5. Group 1a afferents arise from which type of receptors?

- A. Joint receptors**
- B. Muscle spindles**
- C. Mechanoreceptors**
- D. Thermoreceptors**

Group 1a afferents are primarily associated with muscle spindles, which are specialized sensory receptors located within the belly of muscles. These receptors are responsible for detecting changes in muscle length (stretch) and the rate of that change, providing crucial feedback to the central nervous system about muscle dynamics. The muscle spindle consists of intrafusal muscle fibers, which are innervated by the Group 1a afferents. These afferents respond to the stretch of the muscle and convey information about proprioception, essential for coordinating movement and maintaining posture. Their role is vital in reflex actions, enabling the body to react quickly to changes in muscle length and tension. While joint receptors and mechanoreceptors also play important roles in sensory perception, they are not specifically linked to Group 1a afferents. Joint receptors are associated with the position and movement of joints, and mechanoreceptors can include a variety of sensory nerve endings responding to mechanical stimuli. Thermoreceptors, on the other hand, are involved in detecting temperature changes and do not have a direct relationship with Group 1a afferents.

6. What is a known delayed sign of acetaminophen poisoning?

- A. Increased blood pressure**
- B. Confusion or disorientation**
- C. Jaundice**
- D. Seizures**

In cases of acetaminophen poisoning, one of the known delayed signs is jaundice. Jaundice indicates a yellowing of the skin and the whites of the eyes, which occurs due to the accumulation of bilirubin resulting from liver damage. Acetaminophen is metabolized in the liver, and an overdose can lead to hepatotoxicity, where the liver is unable to process the drug effectively, resulting in cellular damage and impaired function. As the liver becomes more damaged, symptoms such as jaundice can manifest, typically 24 to 72 hours after the initial toxic dose. Recognizing jaundice as a delayed sign is crucial for timely intervention and treatment of acetaminophen toxicity.

7. What condition is characterized by hypertonicity of muscles, tenderness, and temperature changes of the skin?

- A. Decreased axoplasmic transport**
- B. Increased axoplasmic transport**
- C. Muscle spasm**
- D. Trigger points**

The condition characterized by hypertonicity of muscles, tenderness, and temperature changes of the skin is best represented by trigger points. Trigger points are localized areas within a muscle that are hyper-sensitive and can lead to muscle tightness, or hypertonicity, as well as tenderness upon palpation. These points can cause referred pain and are often associated with alterations in skin temperature due to changes in blood flow and muscle activity. Increased axoplasmic transport or decreased axoplasmic transport refer to the movement of cellular materials within neurons and are unrelated to the muscular symptoms described in this scenario. While muscle spasms can involve hypertonicity, trigger points specifically encompass the tenderness and skin temperature changes while also being a defined clinical entity within myofascial pain syndromes. Therefore, the correct understanding aligns with trigger points, as they encapsulate the full range of symptoms mentioned.

8. What physiological change is responsible for decreased bone mass and increased fracture risk that occur with aging?

- A. Osteopenia**
- B. Osteoporosis**
- C. Arthritis**
- D. Sarcopenia**

The correct response involves osteopenia, which is characterized by a decrease in bone mass as a natural part of the aging process. This condition indicates that bone density is lower than normal but not low enough to be classified as osteoporosis. As individuals age, the balance between bone resorption (the process of breaking down bone) and bone formation shifts, leading to reduced overall bone mass. This can increase the risk of fractures, particularly in weight-bearing bones. Osteoporosis, while closely related, represents a more severe stage of bone density loss compared to osteopenia. It reflects a greater decrease in bone mass and a higher risk of fractures. Therefore, while osteoporosis also explains decreased bone mass and increased fracture risk, osteopenia specifically refers to the early phase of this process. Arthritis involves the degeneration of joint cartilage and surrounding tissues, affecting joint function and not directly related to bone mass. Sarcopenia refers to the loss of muscle mass and strength associated with aging, which impacts mobility and stability but does not directly describe changes in bone density or the associated fracture risk. Understanding these distinctions helps clarify why osteopenia is the appropriate term in this context, as it focuses directly on the physiological aspects of bone density changes with aging.

9. Which condition is characterized by inflammation of the sacroiliac joints?

- A. Ankylosing spondylitis**
- B. Osteoarthritis**
- C. Rheumatoid arthritis**
- D. Paget's disease**

Ankylosing spondylitis is a chronic inflammatory disease primarily affecting the spine, but it is also characterized by the inflammation of the sacroiliac joints, which are located at the junction of the spine and the pelvis. This condition leads to pain and stiffness in the lower back and the affected joints may eventually fuse over time, resulting in reduced flexibility. The inflammation in the sacroiliac joints is a hallmark symptom of ankylosing spondylitis and is crucial in diagnosing this condition. The other conditions mentioned do have their own features but do not primarily involve the inflammation of the sacroiliac joints in the way ankylosing spondylitis does. Osteoarthritis mainly affects the cartilage and tends to develop due to wear and tear rather than inflammatory processes. Rheumatoid arthritis is a systemic autoimmune disease that can involve multiple joints but typically does not specifically target the sacroiliac joints as its initial manifestation. Paget's disease affects the bone remodeling process, leading to enlarged and deformed bones but is not primarily characterized by sacroiliac joint inflammation. Thus, the distinct involvement of the sacroiliac joints in ankylosing spondylitis makes it the correct answer in this context.

10. What is the primary cause of plantar fasciitis in adults?

- A. Excessive running**
- B. Obesity**
- C. Improper footwear**
- D. Age-related degeneration**

Plantar fasciitis is primarily caused by factors that lead to excessive strain on the plantar fascia, a thick band of tissue that runs across the bottom of the foot. While improper footwear plays a significant role in this condition, it is essential to understand how it contributes to the development of plantar fasciitis. Wearing shoes that lack proper arch support, cushioning, or have an inadequate fit can lead to biomechanical imbalances. Such imbalances can cause either too much tension on the plantar fascia or insufficient support, increasing the risk of inflammation and pain. For instance, high heels or flat shoes without arch support may alter foot mechanics, placing undue stress on the plantar fascia. While excessive running, obesity, and age-related degeneration also contribute to plantar fasciitis, improper footwear is a crucial factor that can exacerbate the issue. Therefore, ensuring that proper footwear is worn can help prevent and manage the symptoms of plantar fasciitis effectively.