# NPTE Final Frontier Practice Test (Sample)

## Study Guide


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# Questions

**1. Which symptom is often the first indication of Multiple Sclerosis?**

**A. Muscle weakness**

**B. Ataxia**

**C. Optic neuritis**

**D. Spastic paralysis**

**2. Bradykinesia in Parkinson's disease refers to:**

**A. Slow movements**

**B. Fast movements**

**C. Involuntary movements**

**D. Coordination difficulties**

**3. Forward saddle positioning will increase stress on which structure?**

**A. Achilles tendon**

**B. Patella**

**C. Hamstrings**

**D. Quadriceps**

**4. Which lobe lesion is associated with visual loss and perceptual deficits such as visual agnosia?**

**A. Frontal**

**B. Parietal**

**C. Occipital**

**D. Temporal**

**5. What type of gait presents as a sudden, abrupt inability to initiate any movement?**

**A. Festinating**

**B. Freezing**

**C. Spastic**

**D. Stride**

**6. Where should a cane be positioned in relation to weakness during ambulation?**

**A. On the same side as weakness**

**B. Opposite side of weakness**

**C. In front of the body**

**D. There is no need for a cane**

**7. What condition can result from a basilar artery infarct in the brainstem?**

**A. Dysphagia**

**B. Locked-in syndrome**

**C. Hemiplegic migraine**

**D. Cerebellar ataxia**

**8. What anatomical cause can lead to a lateral bend deviation in prosthetic gait?**

**A. Weak abductors**

**B. Short amputation**

**C. Weak quads**

**D. Hip flexion contracture**

**9. What type of rigidity is commonly associated with Parkinson's disease?**

**A. Lead pipe rigidity**

**B. Spasticity**

**C. Flaccidity**

**D. Co-contracture**

**10. What type of vertebral change characterizes Scheuermann's disease?**

**A. Fusion of vertebrae**

**B. Disc herniation**

**C. Wedging of vertebrae**

**D. Fractures**

# Answers

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

# Explanations

## 1. Which symptom is often the first indication of Multiple Sclerosis?

**A. Muscle weakness**

**B. Ataxia**

**C. Optic neuritis**

**D. Spastic paralysis**

**Optic neuritis is often recognized as one of the first symptoms of Multiple Sclerosis (MS). This condition involves inflammation of the optic nerve, leading to visual disturbances such as blurred vision, loss of color vision, or partial vision loss. It can occur in one eye or both and may be accompanied by pain with eye movement. The occurrence of optic neuritis is significant as it can serve as an early warning sign of MS, often prompting further investigation and diagnosis. The eye's vulnerability to inflammation makes the visual pathway a common initial focus for disease processes in MS. While muscle weakness, ataxia, and spastic paralysis are also symptoms associated with Multiple Sclerosis, they tend to manifest later as the disease progresses. Therefore, the presence of optic neuritis allows healthcare providers to investigate the possibility of MS sooner, making this symptom a crucial element in the early detection and management of the condition.**

## 2. Bradykinesia in Parkinson's disease refers to:

**A. Slow movements**

**B. Fast movements**

**C. Involuntary movements**

**D. Coordination difficulties**

**Bradykinesia specifically refers to the slowness of movement, which is a hallmark symptom of Parkinson's disease. In Parkinson's disease, individuals experience a gradual reduction in their ability to initiate and execute movements, resulting in a noticeable decrease in the speed of voluntary movements. This symptom profoundly affects daily activities, making tasks that require physical movement more difficult and time-consuming. The term "bradykinesia" derives from Greek roots meaning "slow" and "movement," thus encapsulating the essence of this symptom. While coordination difficulties can occur in Parkinson's disease, they are not defined as bradykinesia. Similarly, fast movements and involuntary movements, such as tremors, are not characteristics of bradykinesia. This makes the definition of bradykinesia distinctly tied to the experience of moving slowly rather than experiencing any of the other motion-related symptoms.**

## 3. Forward saddle positioning will increase stress on which structure?

**A. Achilles tendon**

**B. Patella**

**C. Hamstrings**

**D. Quadriceps**

**Forward saddle positioning increases stress on the patella due to the mechanical demands placed on the knee joint in that posture. When an individual is in a forward saddle position, the angle at which the body is seated may alter the biomechanics of the knee. This can lead to an increase in patellofemoral stress, as the patella is subjected to different forces during movement and weight-bearing activities. In this position, the quadriceps may have to work harder to stabilize the knee, which can also increase the tracking of the patella over the femur. If the alignment of the patella is altered, or if there is an increased demand on the quadriceps to maintain knee stability, this can lead to patellar pain or other patellofemoral syndromes. Understanding the implications of body positioning on joint mechanics is essential in fields such as physical therapy, as it can inform treatment and rehabilitation strategies.**

## 4. Which lobe lesion is associated with visual loss and perceptual deficits such as visual agnosia?

**A. Frontal**

**B. Parietal**

**C. Occipital**

**D. Temporal**

**A lesion in the occipital lobe is associated with visual loss and perceptual deficits, including visual agnosia. The occipital lobe is primarily responsible for processing visual information received from the eyes. When there is damage or a lesion in this area, it can lead to significant disruptions in visual perception, including the inability to recognize visual stimuli, which is known as visual agnosia. Visual agnosia occurs when the brain has difficulty interpreting visual information, even though the individual may have intact vision. This can affect the ability to recognize objects, faces, or specific visual features. In contrast, lesions in the frontal lobe typically result in changes in personality, planning, and motor functions, the parietal lobe may affect sensory integration and spatial awareness, and the temporal lobe is chiefly involved in auditory processing and memory. Therefore, the occipital lobe's role in visual processing makes it the correct response for visual loss and perceptual deficits like visual agnosia.**

## 5. What type of gait presents as a sudden, abrupt inability to initiate any movement?

**A. Festinating**

**B. Freezing**

**C. Spastic**

**D. Stride**

**The type of gait that presents as a sudden, abrupt inability to initiate any movement is known as freezing. This phenomenon is commonly observed in individuals with Parkinson's disease and is characterized by a temporary inability to start walking or a sudden halt while walking. During freezing episodes, the person may feel as though their feet are glued to the ground, leading to a significant disruption in their gait pattern. It often occurs when transitioning between activities, navigating obstacles, or in situations with increased stress or distraction. Understanding freezing is essential for physical therapy and rehabilitation practices, as it directly impacts mobility and independence in those affected. Distinguishing freezing from other gait patterns, such as festinating or spastic gait, is crucial in developing appropriate interventions and treatment strategies.**

## 6. Where should a cane be positioned in relation to weakness during ambulation?

**A. On the same side as weakness**

**B. Opposite side of weakness**

**C. In front of the body**

**D. There is no need for a cane**

**Positioning a cane opposite the side of weakness during ambulation is crucial for providing the necessary support and stability to the person using it. This technique helps to offset the reduced strength and balance on the affected side. By placing the cane on the opposite side, the user can rely on it for additional weight-bearing and leverage, which aids in maintaining balance and providing a stable base of support while walking. Using the cane in this manner allows the individual to engage the stronger side more effectively, promoting a more natural gait pattern and reducing the risk of falls. It also assists in distributing body weight more evenly, thereby decreasing the strain on the weaker limb. In summary, positioning the cane opposite to the side of weakness enhances mobility and ensures a safer and more effective ambulation. This is why answering with the opposite side of weakness is the correct choice in this context.**

## 7. What condition can result from a basilar artery infarct in the brainstem?

**A. Dysphagia**

**B. Locked-in syndrome**

**C. Hemiplegic migraine**

**D. Cerebellar ataxia**

**Locked-in syndrome results from a basilar artery infarct in the brainstem, specifically due to damage to the pons, which is responsible for relaying signals between the cortex and the body. In locked-in syndrome, patients experience complete paralysis of voluntary muscles except for eye movements, while cognitive function remains intact. This condition is characterized by the inability to speak or move, making communication extremely challenging, but patients often retain awareness of their surroundings and can sometimes communicate through eye movements. The infarct in the basilar artery disrupts blood flow to crucial areas of the brainstem, leading to the specific motor deficits seen in locked-in syndrome. Understanding this condition ties into the broader study of neuroanatomy and the significance of brainstem structures in motor control and consciousness.**

## 8. What anatomical cause can lead to a lateral bend deviation in prosthetic gait?

**A. Weak abductors**

**B. Short amputation**

**C. Weak quads**

**D. Hip flexion contracture**

**A lateral bend deviation in prosthetic gait is often attributed to weakness in the abductors, particularly the gluteus medius and minimus. These muscles are crucial for stabilizing the pelvis during gait. When the abductors are weak, the body compensates by leaning to the side of the prosthetic limb. This compensatory mechanism helps maintain balance and provides a larger base of support, but it results in an observable lateral bend in the trunk during ambulation. The other options do pertain to issues that can affect gait, but they do not directly contribute to a lateral bend deviation in the same way. For instance, a short amputation could lead to difficulties with loading the limb and affect weight distribution but wouldn't specifically cause a lateral trunk bend. Weak quadriceps may impact stability and control during the stance phase of walking, potentially resulting in knee instability but not directly causing a lateral trunk deviation. A hip flexion contracture may lead to altered gait mechanics but typically results in a forward lean rather than a lateral bend. Understanding the role of the hip abductors in gait can provide valuable insights into prosthetic fitting and rehabilitation strategies to ensure a more efficient and symmetrical gait pattern.**

## 9. What type of rigidity is commonly associated with Parkinson's disease?

**A. Lead pipe rigidity**

**B. Spasticity**

**C. Flaccidity**

**D. Co-contracture**

**Lead pipe rigidity is the type of rigidity commonly associated with Parkinson's disease. This condition is characterized by a uniform resistance throughout the range of motion when a limb is passively moved. It is one of the hallmark signs of Parkinson's and reflects the underlying pathophysiology of the disease, which involves a deficiency of dopamine in the basal ganglia. This rigidity can affect any part of the body but is often most notable in the arms and legs. In contrast to spasticity, which involves a velocity-dependent resistance to stretching due to upper motor neuron lesions, and flaccidity, which refers to a lack of muscle tone, lead pipe rigidity demonstrates a constant resistance regardless of the speed of movement. Co-contraction, while it involves simultaneous contraction of agonist and antagonist muscles, does not specifically characterize the rigidity seen in Parkinson's disease and is not as commonly recognized within the clinical presentation of the disorder.**

## 10. What type of vertebral change characterizes Scheuermann's disease?

**A. Fusion of vertebrae**

**B. Disc herniation**

**C. Wedging of vertebrae**

**D. Fractures**

**Scheuermann's disease, often seen in adolescents, is characterized by structural changes in the thoracic spine, particularly the development of kyphosis. The key feature of this condition is the wedging of the thoracic vertebrae. This wedging leads to an abnormal anterior curvature of the spine, causing the characteristic hunchback appearance. In Scheuermann's disease, the vertebrae become shaped like wedges, which is a significant deviation from their normal rectangular form. This wedging is a result of both vertebral body growth abnormalities and alterations in the endplates. Over time, these changes can lead to spine deformities and potential postural issues, making it essential to recognize and diagnose early on. Other options such as fusion of vertebrae, disc herniation, and fractures are not typical characteristics of Scheuermann's disease. While they may be seen in other spinal conditions, they do not define the vertebral changes associated with this specific disease. Understanding the correct features of Scheuermann's disease is crucial for diagnosis and subsequent management of the condition.**