313 The Peripheral Nervous System Answer Key

Peripheral Nervous System Worksheet ANSWER KEY

Fill-in-the-Blank

Enteric	Somatic	Cranial	stress
Spinal	Autonomic	31	
12	relaxed	Peripheral	

The ___CRANIAL___ nerves go directly from the brain to the outer parts of the body and have ___12___ pairs of them. The ___SPINAL___ nerves, on the other hand, emerge directly from the spinal cord. It has ___31___ pairs of nerves. Both of these types of nerves belong to the ___PERIPHERAL___ nervous system.

The Peripheral Nervous System is divided into 2 systems. The first one is called the ___SOMATIC___ system and helps makes decisions like washing your face or walking leisurely in the school's halls. The second one is called the ___AUTONOMIC___ system and takes care of breathing and heartbeat patterns when you are sleeping and awake.

The Sympathetic Nervous System reacts to ___STRESS___ and is best known as the "flight or fight" response. The Parasympathetic Nervous System acts when you are ___RELAXED___ and occurs when you talking amongst friends or writing notes.

An example of the ___ENTERIC___ system is when you are eating some delicious Hot Cheetos during a movie.

Short Answer Questions

1. What is the most common cause of dementia? What is happening to the neurons?
   Alzheimer's Disease. The neurons are deteriorating.
2. What is the possibility of having Autism? What are two possible symptoms of the disorder?
   1 in 88. Repetitive movements, difficulty maintaining eye contact, not able to read social cues, trouble with empathy
3. What are some effects in the disorder Transverse Myelitis? What is the chance of recovery?
   Paralysis, slurred speech, facial droop, respiratory failure. 1/3 for full recovery, 1/3 for partial recovery, 1/3 for no recovery at all.

313 the peripheral nervous system answer key is an essential resource for students and professionals seeking to understand the complexities of the peripheral nervous system (PNS). The PNS plays a crucial role in connecting the central nervous system (CNS) to the limbs and organs, facilitating communication throughout the body. This article will delve into the structure and function of the PNS, its divisions, the types of nerves involved, and common disorders associated with the peripheral nervous system.

Understanding the Peripheral Nervous System

The peripheral nervous system encompasses all the nerves outside the brain and spinal cord, which are part of the central nervous system. It is divided into two main parts: the somatic nervous system and the autonomic nervous system.

1. Components of the Peripheral Nervous System

The peripheral nervous system consists of various components, each with specific roles:

- Nerves: Bundles of axons that carry signals to and from the CNS. They can be classified as:
- Cranial Nerves: Twelve pairs of nerves that emerge directly from the brain.

- Spinal Nerves: Thirty-one pairs of nerves that emerge from the spinal cord.

- Ganglia: Clusters of neuron cell bodies located outside the CNS. They serve as relay points for nerve signals.

- Receptors: Specialized structures that detect changes in the internal or external environment, sending this information to the CNS.

2. Divisions of the Peripheral Nervous System

The PNS is further subdivided into two primary systems: the somatic and autonomic nervous systems.

- Somatic Nervous System:
- Responsible for voluntary control of body movements.
- Involves the sensory and motor pathways.
- Mediates reflex actions.

- Autonomic Nervous System (ANS):
- Controls involuntary bodily functions.
- Divided into:
- Sympathetic Nervous System: Prepares the body for 'fight or flight' responses.
- Parasympathetic Nervous System: Promotes 'rest and digest' activities.
- Enteric Nervous System: Often referred to as the 'second brain,' it governs the function of the gastrointestinal system.

Functions of the Peripheral Nervous System

The PNS serves several vital functions:

1. Sensory Input: The PNS collects sensory information from receptors and transmits it to the CNS for processing.

2. Motor Output: It carries motor commands from the CNS to muscles and glands, facilitating movement and responses.

3. Reflex Actions: The PNS is involved in reflex arcs, allowing for quick reactions to stimuli without direct involvement of the brain.

4. Homeostasis Regulation: Through the autonomic nervous system, the PNS helps regulate involuntary processes such as heart rate, digestion, and respiratory rate.

Common Disorders of the Peripheral Nervous System

Understanding the disorders associated with the peripheral nervous system is crucial for diagnosis and treatment. Some common PNS disorders include:

- Peripheral Neuropathy: A condition resulting from damage to the peripheral nerves, often leading to weakness, numbness, and pain, typically in the hands and feet.

- Guillain-Barré Syndrome: An autoimmune disorder where the body's immune system attacks the peripheral nerves, leading to rapid-onset muscle weakness.

- Carpal Tunnel Syndrome: A condition caused by compression of the median nerve as it travels through the wrist, resulting in pain, numbness, and weakness in the hand.

- Diabetic Neuropathy: A complication of diabetes that affects the nerves, leading to pain and loss of sensation.

- Herniated Disc: A condition where a spinal disc bulges out, potentially compressing nearby nerves and leading to pain and dysfunction.

3. Risk Factors for PNS Disorders

Several factors can increase the risk of developing peripheral nervous system disorders:

- Diabetes: High blood sugar levels can damage nerves over time.
- Infections: Certain infections can lead to nerve damage.
- Trauma: Physical injuries can directly impact nerve function.
- Autoimmune Diseases: Conditions like lupus or rheumatoid arthritis can affect nerve health.
- Genetic Factors: Family history may play a role in susceptibility to certain PNS disorders.

Diagnosis of Peripheral Nervous System Disorders

Diagnosing PNS disorders typically involves a combination of patient history, physical examination, and diagnostic tests:

1. Physical Examination: Assessment of muscle strength, reflexes, and sensory responses.
2. Electromyography (EMG): Measures muscle response to electrical stimulation, helping to identify nerve damage.
3. Nerve Conduction Studies: Tests how well and how fast nerves can send electrical signals.

4. Blood Tests: To check for underlying conditions that may affect nerve health.
5. Imaging Tests: MRI or CT scans can help visualize structural issues affecting nerves.

Treatment Options for Peripheral Nerve Disorders

Treatment for peripheral nerve disorders varies based on the underlying cause but may include:

- Medications: Pain relievers, anti-inflammatory drugs, and medications specifically for nerve pain (such as anticonvulsants and antidepressants).

- Physical Therapy: To improve strength and mobility and regain function.

- Surgery: In cases where nerve compression or injury needs to be addressed, surgical intervention may be necessary.

- Lifestyle Changes: Managing underlying conditions, such as diabetes, adopting a healthy diet, and regular exercise can help improve nerve health.

- Alternative Therapies: Some patients find relief through acupuncture, massage, or chiropractic care.

Conclusion

In conclusion, 313 the peripheral nervous system answer key serves as an invaluable tool for those studying the PNS and its role in the body. Understanding the structure, function, and common disorders of the PNS is essential for diagnosing and treating conditions that affect nerve health. As research continues to evolve, advancements in treatment methodologies promise a better quality of life for those affected by peripheral nervous system disorders. With the right knowledge and resources, individuals can take proactive steps towards maintaining their nervous system health and overall well-being.

Frequently Asked Questions

What is the primary function of the peripheral nervous system (PNS)?

The primary function of the peripheral nervous system is to connect the central nervous system (CNS) to the limbs and organs, facilitating communication between the brain and the rest of the body.

What are the two main divisions of the peripheral nervous system?

The two main divisions of the peripheral nervous system are the somatic nervous system, which controls voluntary movements, and the autonomic nervous system, which regulates involuntary functions.

How does the autonomic nervous system differ from the somatic nervous system?

The autonomic nervous system controls involuntary bodily functions, such as heart rate and digestion, while the somatic nervous system governs voluntary movements and sensory information.

What roles do sensory and motor neurons play in the peripheral nervous system?

Sensory neurons transmit information from sensory receptors to the central nervous system, while motor neurons convey signals from the central nervous system to muscles and glands, enabling movement and response.

What are common disorders associated with the peripheral nervous system?

Common disorders of the peripheral nervous system include neuropathy, Guillain-Barré syndrome, and carpal tunnel syndrome, which can lead to symptoms such as pain, weakness, and numbness.

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