

Medical Terminology Nervous System

Directions:

1. Print cards double sided and cut vocabulary cards
2. Choose an activity method for learning vocabulary words

Class method

- Read the vocabulary word aloud and ask for volunteers to provide the definition
or
- Read the definition aloud and ask for volunteers to provide the vocabulary word

Small group method

1. Divide the class into small groups
2. Give each group a set of the cards
3. Have one person pick a card and read it aloud to the group
4. The first person in the group to get it right gets a point and is the next person to read a card

Concentration method

1. Pair the students up
2. Give each pair a set of cards
3. Lay the vocabulary cards on a table with the definition side down
4. Each player takes a turn reading a word and saying the definition
5. If the definition is correct, the player picks up the card and keeps it as a point
6. If the definition is incorrect, the next player takes a turn
7. Continue until all cards are drawn



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CENTRAL NERVOUS SYSTEM (CNS)

PERIPHERAL NERVOUS SYSTEM (PNS)

SENSORY (AFFERENT) NERVOUS SYSTEM

MOTOR (EFFERENT) NERVOUS SYSTEM

SOMATIC MOTOR SYSTEM

AUTONOMIC MOTOR SYSTEM

SYMPATHETIC NERVOUS SYSTEM

PARASYMPATHETIC NERVOUS SYSTEM

Composed of all the peripheral nerves in the body that connect to the CNS

The CNS is composed of the brain and spinal cord. It is the central processor of information and makes decisions regarding behavior

Transmits information from the CNS to muscles and glands

Carries sensory information about the external environment to the spinal cord and brain

This part of the nervous system works “automatically” to maintain survival and optimize function. It transmits signals from the CNS to the cardiac muscles and glands

Sends signals to the skeletal muscles of the body to carry out movements designated by the CNS

This part of the nervous system is responsible for the “rest and digest” relaxed state. It lowers the heart rate, increases blood flow to the digestive system, and constricts the pupils, among other activities

This part of the nervous system is responsible for the “fight or flight response” to stress. It raises the heart rate, increases blood flow to the muscles, and dilates the pupils, among other activities

BRAINSTEM

MEDULLA OBLONGATA

PONS

MIDBRAIN

TECTUM

TEGMENTUM

SUBSTANTIA NIGRA

DIENCEPHALON

The medulla is the most inferior section of the brainstem that joins the spinal cord inferiorly and the pons superiorly. It helps to regulate breathing, respiration, and basic functions, such as swallowing

Lowest portion of the brain closest to the spinal cord, composed of three structures

Also known as the mesencephalon, the midbrain sits atop the pons and below the thalamus

This is the midsection of the brainstem and forms important interconnections with the cerebellum to convey information to and from the body. It also helps to regulate breathing patterns

The “floor” or inferior portion of the midbrain involved in motor reflexes that prevents undesired movements of the body

This is the “roof” or superior portion of the midbrain. It helps to coordinate motor reflexes in response to auditory and visual stimuli

Deep region of the forebrain with three primary components: the thalamus, hypothalamus, and epithalamus

This part of the brain, itself a member of a network of brain areas known as the basal ganglia, plays an important role in movement and reward. It is damaged in Parkinson’s disease

THALAMUS

HYPOTHALAMUS

EPITHALAMUS

PINEAL GLAND

SUBTHALAMIC NUCLEUS

CEREBELLUM

CEREBRUM

CEREBRAL CORTEX

Part of the brain that is essential for regulating biological rhythms, such as sleep and appetite, and controls the endocrine system

Relay station in the brain that interconnects sensory information from the brainstem with regions of the cerebral cortex that process that data

This gland produces the hormone melatonin. Melatonin plays a key role in inducing sleepiness at night, thus regulating the sleep-wake cycle

Part of the brain that contains the pineal gland and the subthalamic nucleus

The cerebellum is the “little brain” covered in tiny folds and grooves, called gyri and sulci, resembling the cerebral cortex, that is located posterior to the brainstem. It processes sensory feedback from the environment to coordinate smooth, accurate movements and maintain balance and posture

This nucleus, or grouping of brain cells, is part of a network of brain nuclei, known as the basal ganglia. It is important in regulating purposeful movements of the body

This is the outer layer of the cerebrum that is composed of gray matter (where the neuronal cell bodies that contain the nucleus of the cell reside, as opposed to where the fatty cables, called axons, that come off the neuronal cell bodies reside, called white matter). It is covered with folds and grooves, known as gyri and sulci, and is divided into different lobes based on location and function

Largest and outermost segment of the brain composed of two cerebral hemispheres

FRONTAL LOBES

PARIETAL LOBES

TEMPORAL LOBES

OCCIPITAL LOBES

DEEP NUCLEI

BASAL NUCLEI/BASAL GANGLIA

MEDIAL FOREBRAIN BUNDLE

LIMBIC SYSTEM

These lobes are located behind the frontal lobes of the brain, at its posterior superior aspect, above the temporal lobes. They are important for visual spatial processing and locating objects in space, processing tactile information (the sense of touch), and determining one's body position in space

These are the most anterior lobes of the cerebral cortex. These are responsible for voluntary movements, planning, speech production, and impulse control

Located at the very back of the cerebral cortex, primary center for conscious visual processing

These lobes, located at the temples, are important to auditory and language processing. The medial temporal lobe contains the hippocampus, a key brain structure necessary for forming new memories

Network of brain nuclei important in regulating purposeful movements of the body

Deep grouping of neurons in the brain that perform important behavioral functions

The limbic system contains a network of brain structures important to emotional processing and memory. It contains the amygdala, the brain's fear center, and the hippocampus, the brain's memory center

Pathway that reinforces certain pleasurable behaviors and is known as the brain's "reward" center

AGNOSIA

APHASIA

APRAXIA

ATAXIA

ALZHEIMER'S DISEASE

CEREBROVASCULAR ACCIDENT (CVA)

CONCUSSION/ TRAUMATIC BRAIN INJURY (TBI)

COMA

Condition characterized by an impairment in language comprehension or expression

This is a condition characterized by being unable to recognize an object. It may involve any sensory modality, such as visual (sight), auditory (perception of sound), or tactile (touch)

Condition characterized by incoordination and impaired balance

Condition characterized by impairment in purposeful tool use or manipulation of objects to complete a task

Also known as a stroke, this condition is characterized by destruction of brain tissue due to impaired blood flow or hemorrhage (bleed). Most CVAs are ischemic, meaning they are the result of a blood clot or other compromise to blood flow

Neurodegenerative disease that is characterized by progressive memory loss, particularly the laying down of new memories, and eventually impairs all aspects of cognition

Unconscious state from severe brain injury in which the affected individual is unresponsive to their environment, aside from brainstem and spinal cord reflexes

This is a condition that results from head injury during which brain function becomes impaired, even if transiently, such as feeling dazed or confused. Mild TBI is also known as concussion and is a frequent injury in contact sports, such as American football

DYSKINESIA

EPILEPSY

GUILLAIN-BARRE SYNDROME

HEMIPLEGIA AND HEMIPARESIS

HYDROCEPHALUS

INTRACRANIAL HEMATOMA

SUBDURAL HEMATOMA

SUBARACHNOID HEMORRHAGE

Condition characterized by recurrent, unprovoked (spontaneous) seizures that is usually treated with anti-epileptic drugs (AEDs)

Condition characterized by abnormal movements

These are conditions characterized by paralysis (plegia) or weakness (paresis) of one side of the body. They can result from a stroke

This is an autoimmune condition that affects peripheral nerves (typically the fatty insulation surrounding the nerves, called myelin). It is characterized by ascending weakness and is usually self-limited (meaning it only lasts a certain duration of time and then goes away)

This is a broad term that refers to bleeding within the skull. When the bleeding occurs in the layers of tissues surrounding the brain, called the meninges, it can compress brain tissue

This is a condition that occurs when the cerebrospinal fluid (CSF), the fluid that bathes the brain and spinal cord, does not drain properly, or CSF flow becomes obstructed. This results in enlargement of the ventricles, called ventriculomegaly. The ventricles are the open spaces of the brain where CSF flows

Bleeding that occurs within or below the subarachnoid space, the middle meningeal layer

Blood accumulating below the outermost layer of the meninges, called the dura mater

CEREBRAL HEMORRHAGE

MENINGITIS

MENINGOENCEPHALITIS

MULTIPLE SCLEROSIS (MS)

MYASTHENIA GRAVIS

PARAPLEGIA

PARESTHESIA

PARKINSON'S DISEASE

Condition characterized by inflammation of the meninges

Bleeding that occurs within the brain tissue itself

This is an autoimmune condition characterized by damage to the white matter fibers in the CNS, primarily myelin (the fatty sheath covering neuronal "cables"). It is typically "relapsing-remitting" meaning there is an acute attack of one part of the CNS and then a period of inactivity before another attack in a different part of the CNS

Meningitis with inflammation of the brain tissue itself

Condition characterized by leg paralysis, often due to spinal cord injury

This is an autoimmune condition characterized by damage to the neuromuscular junction, where peripheral nerves communicate with muscle fibers. It can be limited to eye movement weakness or affect the entire body, which occurs in most affected individuals

This is a progressive neurodegenerative condition caused by loss of neurons in the substantia nigra that results in motor and often cognitive impairment. It is characterized by bradykinesia (slowed/small amplitude movements), resting tremor, and a ratcheting muscle stiffness, known as cogwheel rigidity

Numbness and tingling in an extremity, which could be due to peripheral nerve or nerve root (the nerve as it comes off the spinal cord) injury

QUADRIPLEGIA

TRANSIENT ISCHEMIC ATTACK (TIA)

MEDULLOBLASTOMA

BRAINSTEM GLIOMA

CEREBELLAR ASTROCYTOMA

OLIGODENDROGLIOMA

MENINGIOMA

GLIOBLASTOMA MULTIFORME (GBM)

Often called a “mini-stroke,” a TIA occurs when blood flow to a certain area of brain tissue is compromised, leading to stroke-like symptoms. However, blood flow returns quickly enough that permanent tissue loss does not occur. A TIA is a warning sign that the affected individual is at high risk for having a CVA

Condition characterized by both arm and leg paralysis, often due to spinal cord injury

This type of tumor develops in the midbrain, pons, or medulla and can vary in its rate of growth and spread depending on its grade. Prognosis is usually worse than with cerebellar astrocytoma

This type of tumor almost always affects children or young adults, and 80% of cases occur in children younger than 15 years old. It develops in the medulla and then can metastasize, or spread, to the spinal cord or other areas of the body

This type of tumor is formed from neuronal helper cells in the brain, called oligodendrocytes. Its growth can be slow or fast, depending on its grade. Even when it is a lower grade, it frequently spreads to nearby tissues

This type of tumor is formed in the cerebellum from neuronal helper cells in the brain called astrocytes. Most often, it grows slowly and rarely metastasizes

GBM is the leading malignant brain tumor in adults and forms from astrocytes. It grows rapidly and readily invades surrounding tissues. The prognosis is poor

This is a type of tumor that develops from cells that form the meninges, the thin tissue layers that cover the brain within the skull and the spinal cord within the vertebral column. Most often, the outermost meningeal layer, called the dura mater, is involved. Most meningiomas are benign, meaning they do not invade surrounding tissue. However, they can still cause damage by compressing surrounding tissue

CRANIOPHARYNGIOMA

NEUROLOGIST

NEUROSURGEON

NEURORADIOLOGIST

PSYCHOLOGIST

PSYCHIATRIST

CEREBRAL ANGIOGRAPHY

CEREBROSPINAL FLUID ANALYSIS (LUMBAR PUNCTURE)

Physician who specializes in the diagnosis and treatment of diseases affecting the nervous system

This is a rare, benign tumor that develops just superior to the pituitary gland and can compress nearby structures, such as the pituitary gland, hypothalamus, or optic chiasm, where the optic nerves cross. It primarily affects children and young adults

Radiologist (a physician who interprets medical imaging tests) who received specialty training in evaluating images of the brain and spinal cord

Surgeon who received specialty training in the diagnosis and treatment of nervous system diseases that can be treated surgically

Physician who specializes in the diagnosis and treatment of psychiatric diseases, such as depression or schizophrenia

Medical professional who obtained a terminal degree (usually a PhD but could also be a PsyD) in the diagnosis and nonmedical treatment of mental health conditions

This is a procedure that involves insertion of a thin needle in the lower lumbar spine below the spinal cord to retrieve CSF. Analysis of the CSF can be used to detect infection, cancer, bleeding, and autoimmune conditions within the central nervous system

Imaging technique that uses multiple X-rays and contrast dye to visualize blood vessels both within the brain and that supply the brain in the neck

COMPUTED TOMOGRAPHY (CT SCAN) OF THE HEAD

CT ANGIOGRAM OF THE HEAD AND NECK

ELECTROENCEPHALOGRAM (EEG)

ELECTROMYOGRAPHY (EMG)

MAGNETIC RESONANCE IMAGING (MRI) OF THE BRAIN

MYELOGRAPHY

POSITRON EMISSION TOMOGRAPHY (PET SCAN) OF THE BRAIN

CRANIECTOMY

This is computed tomography (CT) imaging of the blood vessels within the brain and neck after administration of contrast dye. It is faster and less invasive (poses minimal risk of injury) compared to conventional cerebral angiography

This is a common imaging technique that creates a three-dimensional image of the brain by taking multiple X-rays from different angles. It is particularly sensitive for detecting fresh blood within the skull

Procedure that involves the insertion of a needle into a muscle to analyze its electrical activity, which can be used to help diagnose certain muscular or peripheral nerve conditions

This test measures electrical activity on the surface of the brain through the placement of scalp electrodes. Its primary use is the detection of seizures

Imaging technique uses an X-ray of the spinal cord and vertebral column after injection of contrast dye in the subarachnoid space, the mesh-like middle layer of the meninges

Common imaging technique that analyzes the movement of molecules that compose brain tissue within a magnetic field to create detailed structural images of the brain

Surgical removal of a part of the skull for an extended duration of time, which might be necessary to relieve buildup of intracranial pressure from a severe traumatic brain injury, for example

Imaging technique that uses emission of radioactive material to detect and quantify metabolic activity in the brain to identify brain dysfunction

CRANIOTOMY

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VENTRICULOSTOMY

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GAMMA KNIFE

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ENDOVASCULAR MECHANICAL THROMBECTOMY

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INTRAVENOUS (IV) THROMBOLYSIS

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Surgical placement of a drain to relieve buildup of fluid within the brain's ventricles

This is the term for the surgical opening of the skull to get access to brain contents for surgery. The piece of the skull that was opened is replaced at the end of the surgery

This is a procedure that involves removal of a clot using a mechanical device attached to a tube, called a catheter, that is threaded through cerebral arteries to the point where blood flow is obstructed. It is used to treat large vessel ischemic strokes

This surgical technique uses gamma radiation to destroy targeted tissue, such as a tumor within the brain. Gamma knife is a type of stereotactic radiosurgery, which is the targeted delivery of radiation to remove cancer that works within the physical frame of a detailed three-dimensional "map" of the involved organ, such as the brain

Procedure that involves administration of an IV blood thinner used to treat ischemic strokes