

Central Nervous System

The central nervous system (CNS) is the part of the nervous system that integrates the information that it receives from, and coordinates the activity of, all parts of the bodies. It contains the majority of the nervous system and consists of the brain and the spinal cord.

Peripheral Nervous System

The peripheral nervous system, or PNS, consists of the nerves and ganglia outside of the brain and the spinal cord. The main function of the PNS is to connect the central nervous system (CNS) to the limbs and organs.

Somatic Nervous System

The somatic nervous system (SNS) is the part of the peripheral nervous system associated with the voluntary control of body movements via skeletal muscles, and with sensory reception of external stimuli.

Autonomic Nervous System

The autonomic nervous system (ANS or visceral nervous system) is the part of the peripheral nervous system that acts as a control system functioning largely below the level of consciousness, and controls visceral functions.

Visceral Functions

Any function that pertains to the internal organs.

Sympathetic Nervous System

Its general action is to mobilize the body's resources under stress; to induce the fight-or-flight response.

Parasympathetic Nervous System

The parasympathetic system specifically is responsible for stimulation of activities that occur when the body is at rest, including salivation, urination, digestion and defecation.

Motor Neuron

The term motor neuron (or motoneuron) classically applies to neurons located in the central nervous system (or CNS) that project their axons outside the CNS and directly or indirectly control muscles.

Axon

An axon is a long, slender projection of a nerve cell, or neuron, that conducts electrical impulses away from the neuron's cell body.

Action Potential

An action potential is a short-lasting event in which the electrical membrane potential of a cell rapidly rises and falls, following a stereotyped trajectory. Action potentials in neurons are also known as "nerve impulses" or "spikes", and the temporal sequence of action potentials generated by a neuron is called its "spike train". A neuron that emits an action potential is often said to "fire".

Membrane Potential

The cell membrane acts as a barrier that prevents the inside solution (intracellular fluid) from mixing with the outside solution (extracellular fluid). These two solutions have different concentrations of their ions. Furthermore, this difference in concentrations leads to a difference in charge of the solutions. This creates a situation whereby one solution is more positive than the other.

Local Anesthesia

Local anesthesia inhibits sensory perception within a specific location on the body, such as a tooth or the urinary bladder.

Regional Anesthesia

Regional anesthesia renders a larger area of the body insensate by blocking transmission of nerve impulses between a part of the body and the spinal cord.

General Anesthesia

General anesthesia refers to inhibition of sensory, motor and sympathetic nerve transmission at the level of the brain, resulting in unconsciousness and lack of sensation.

Electric Charge (Coulomb)

Charge or is a concept of energy or energetic impulse, greater than a simple signal, applied to some object or entity.

Current

Electrical current is a measure of the amount of electric charge passing a point per unit time i.e. the rate of flow. Unit of measure: Ampere

Voltage

The voltage between two points is the electrical force that would drive an electric current between those points. Unit of measure: Volts

Frequency

Frequency is the number of occurrences of a repeating event per unit time. Unit of measure: Hertz.

Pulse Width

The width of the pulse that is delivered to the patient. Unit of measure: Seconds

Nerve Mapping

The technique whereby nerves are identified transcutaneously without the need to break the skin.

Nerve Locating

The technique whereby nerves are identified subcutaneously using a stimulating needle.

NMBA Monitoring

Neuro-muscular Blocking Agent monitoring. The technique whereby blocking agents is monitored using preset stimulation patterns.

Proximity Indicator

An indicator alerting the user to probable nerve proximity.

Open circuit detection

A feature that alerts the user to a condition where the electric circuit is not complete i.e. one of the clips has been disconnected.

Linear Mode Stimulation

A mode where the current is incremented/decremented in linear steps. Three different ranges allow the user to adjust the size of the steps.

Non-Linear Mode Stimulation

A mode where the current and/or pulse width is incremented/decremented in preset values i.e. in a non-linear fashion.

Accelerometer

A device that measures acceleration relative to freefall.

Train-of-Four (TOF)

A stimulation pattern used to monitor the onset and reversal of blocking agents. The pattern consists of 4 pulses delivered at 2Hz. The ratio of the response to the 4th pulse compared to the response to the 1st pulse is indicative of the percentage of neuro-muscular blocking that is present.

Double Burst (DB)

A stimulation pattern used to monitor the onset and reversal of blocking agents. The pattern consists of 2 bursts of 3 pulses each. The ratio of the response to the 2nd burst compared to the response to the 1st burst is indicative of the percentage of neuro-muscular blocking that is present.

Post-Tetanic Count (PTC)

A stimulation pattern used to monitor the onset and reversal of blocking agents. The pattern consists of a period of Tetanus stimulation followed by 20 pulses. The response to these pulses is indicative of the percentage of neuro-muscular blocking that is present.

Tetanus (TET)

A high frequency stimulation pattern that is used to monitor the onset and reversal of blocking agents. This pattern is not very reliable and is not used often.

References

- 1] www.wikipedia.org



STIMPOD Peripheral Nerve Stimulators for Regional and General Anesthesia
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