

Keywords

A-waves	Sometimes called Axon reflex. Seen when using sub-maximal stimulation during the F-wave recording. Consistent in latency and amplitude and usually occurring before the F-wave. Thought to be a result of reinnervation of the nerve.
Abduct	Move away from the median plane
Abductor digiti minimi (ADM or ADQ)	Sometimes called abductor digiti quinti. Ulnar innervated muscle on the medial side of the little finger along side the 5 th metacarpal. The most superficial muscle in the hypothenar eminence. Commonly used when recording ulnar motor studies.
Abductor digiti quinti pedis (ADQp)	Lateral plantar, thus tibial nerve, innervated muscle on the lateral side of the foot along side the 5 th metatarsal.
Abductor hallucis (AH or AHB)	Sometimes called abductor hallucis brevis. Medial plantar, thus tibial nerve, innervated muscle on the medial side of the foot below the navicular bone. Commonly used when recording tibial motor studies.
Abductor pollicis brevis (APB)	Median innervated muscle just medial to the 1 st metacarpal bone. The most superficial muscle of the thenar eminence. Commonly used when recording median motor studies.
Accessory peroneal nerve	A branch of the superficial peroneal nerve that partly supplies the extensor digitorum brevis (EDB) in 18-22% of people. The EDB is normally innervated by the deep peroneal. The accessory peroneal nerve is seen when the peroneal amplitude, recording from the EDB, is larger when stimulating at the fibular head than when stimulating at the ankle. It can be confirmed by stimulating behind the lateral malleolus, adding that amplitude to the ankle amplitude. The sum of which should closely equal the amplitude when stimulating at the fibular head.
Acetylcholine	The chemical transmitter in a neuromuscular junction
Action potential	Whenever a stimulus reached or exceeds threshold an action potential is generated propagating along a single axon.
Active electrode	Synonymous with recording electrode, G1 or E1. To complete the circuit a differential amplifier requires the Active electrode and a Reference electrode.
Acute Inflammatory Demyelinating Polyneuropathy (AIDP)	Guillain-Barré Syndrome. An acute areflexic ascending sensory-motor polyneuropathy where deficit is maximum in 4 weeks. Characterized by absent or prolonged F-waves,

	slowed conduction velocities, prolonged latencies and conduction block (especially proximally) Sensory NCS may be normal in early cases, but as the disease advances low amplitudes and slowed conductions may be seen.
Adduct	Move toward the median plane
Afferent	Otherwise known as sensory neurons – carry nerve impulses from receptors or sense organs <i>toward</i> the central nervous system.
Age	Affects time and amplitude so normative values reflect different age groups.
All or none response	When depolarization occurs it either causes an all response it reaches threshold, or no response if the depolarization is insufficient to reach threshold.
Alternating Current	Current that is forced rapidly back and forth along a circuit, repeatedly reversing its direction.
Ampere	A measure of current, designated by the letter A.
Amplifier	The hardware component used to increase the size of the small physiological signal.
Amplitude	A measurement of the vertical size of the waveform. The representation of the total number of nerve fibers or sensory axons. Usually expressed as millivolts (mV) for MNC and microvolts (μ V) for SNC
Amyotrophic lateral sclerosis (ALS)	Often referred to, as “Lou Gehrig's disease.” Motor neurons go from the brain to the spinal cord and from the spinal cord to the muscles throughout the body. The progressive degeneration of the motor neurons in ALS eventually leads to their death. See www.alsa.org
Anodal block	Hyperpolarization occurring under the anode prevents the depolarization, that occurs under the cathode, from passing thus, causing a reduction in the resulting potential.
Anode	The positive terminal of the stimulating electrode
Anomalous Innervation	Anomalous pathways that can cause erroneous results in some people. Common anomalies include Martin-Gruber anastomosis and Accessory peroneal nerve.
Antecubital fossa	The triangular area on the anterior view of the elbow joint of the arm. A common stimulation site for the median and radial nerves.
Anterior	In the front or in the forward part, ventral surface
Anterior horn cells	Motor unit cell bodies in the ventral gray matter of the

	spinal cord. Eventually become the motor nerves.
Anterior interosseous nerve	A branch the median nerve originating several centimeters distal to the elbow. Innervates several muscles in the forearm including the flexor digitorum profundus and the flexor pollicis longus muscles.
Antidromic conduction	Nerve conduction propagation in a direction other than the normal physiological direction.
Area	The area under a curve; represents duration and amplitude. Measured in mVms (for MNC, its most useful place) and helps differentiate between a conduction block and simple dispersion.
Artifact	Unwanted electrical or physiological signals that obscure the desired response.
Atoms	Make up the elements found in all matter
Axillary nerve	Originates from the posterior cord of the brachial plexus via the upper trunk and the C5/6 nerve roots. Innervates the deltoid and teres minor muscles.
Axolemma	A semipermeable membrane that covers the axoplasm
Axon	Nerve fibers that transmit impulses to and from the periphery. Axons are in effect the primary transmission lines of the nervous system, and as bundles they help make up nerves.
Axon wave or axon reflex	See A-wave
Axonotmesis	Nerve conduction slowing without complete block (axons and myelin disrupted, but supporting connective tissue is intact, allowing reinnervation of the axons)
Axoplasm	Jelly-like substance contained in nerve cells
Baseline	The horizontal line representing the pre and post response.
Baseline-to-peak	Amplitude measurement from the baseline (takeoff point) to the highest negative peak. Sometimes simply referred to as the "Peak" amplitude.
Bell's Palsy	A lesion of the facial nerve causing weakness in the muscles of the face. Usually idiopathic and most often unilateral. Common tests include facial nerve motor recordings and Blink reflex studies.
Biceps brachii	Muscle innervated by, and commonly used when performing musculocutaneous motor studies.
Blink Reflex	Essentially the same as the corneal reflex this electrical test evaluates the cranial nerves V and VII (trigeminal and facial

	respectively) as well as central pathways in the brainstem.
Brachial plexus	Anatomical structure formed by spinal roots C5-T1 and terminating in the nerves of the arm. Composed of Roots, Trunks, Divisions, Cords and Branches (or nerves).
Bulbar	Signs and symptoms (or muscles) arising from the brainstem (medulla)
Carpal Tunnel Syndrome	A condition where the median nerve is compressed at the wrist as it travels under the transverse carpal ligament.
Cathode	The negative terminal (i.e. active terminal) of the stimulating electrode.
Central motor conduction	Conduction time from the motor cortex in the brain to the motor neurons in the spinal cord. Usually calculated using transcranial magnetic or transcranial electrical stimulation and subtracting the peripheral conduction time.
Charcot-Marie-Tooth (CMT)	Hereditary sensorimotor neuropathy (HMSN) is an inherited disorder that affects all nerves, both motor and sensory.
Chronic Inflammatory Demyelinating Polyneuropathy (CIDP)	Acquired motor and sensory demyelinating neuropathy that often has axonal features. Characterized by prolonged latencies, slowed conduction velocities, absent or prolonged F-waves. The findings can be asymmetric and the presence of conduction block help make the diagnosis of acquired possible. Sensory NCS have low amplitudes especially in the lower extremities.
CMAP	Compound Muscle Action Potential. The summation of muscle fibers contracting after stimulation of a nerve (or the muscle directly).
Common Mode Rejection	In an amplifier, large signals common to both points (active and reference) are rejected. Since noise is much larger than physiological signals, good Common Mode Rejection allows more cancellation of unwanted signals and better resolution of physiological signals.
Common peroneal nerve	The smaller branch of the sciatic nerve which later becomes the deep and superficial peroneal nerves.
Complex Repetitive Discharges	Seen in Needle EMG. Action potentials of a group of muscle fibers firing in near synchrony. CRD's usually have abrupt onset and abrupt end while their amplitude, frequency and waveform remain constant during the train.
Concentric needle electrode	An inner wire, serving as the recording electrode runs through an outer cannula that serves as the reference electrode.

Conduction block	Seen when a reduction in amplitude and area of a response is seen between the distal and proximal stimulation sites of a nerve. It is a failure of the action potential to propagate past a point, but conduction is possible beyond the same point. Seen most often in demyelinating disorders. Technical factors must be eliminated to confirm a true conduction block.
Conduction Velocity	A measurement of time between two points. Used as we move up the arm or leg to normalize for the height of the patient. Calculated from the fastest fibers as difference in distance divided by difference in time. Measured in meters per second. <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-top: 10px;"> $\frac{\Delta \text{ dist (mm or cm x 10)}}{\Delta \text{ time (ms)}}$ </div>
Conductors	Elements that readily pass electrons from one atom to the next atom. Most metals are good conductors.
Coulomb's Law	Opposite charges attract and like charges repel.
Cubital Tunnel Syndrome	Chronic compression of the ulnar nerve in the channel between the two heads of the flexor carpi ulnaris 1-4 cm distal to the medial epicondyle of the elbow. The second most common ulnar neuropathy at the elbow.
Current	The movement or flow of electrons from atom to atom. Measured in Amperes (a).
Cutaneous	Related to the skin
Decrementing response	A reproducible decline in amplitude and/or area with successive responses to repetitive stimulation.
Deltoid	Muscle innervated by, and commonly used as recording point when recording axillary motor conduction studies.
Demyelination	Having to do with a disease or disorder affecting the myelin surrounding a peripheral nerve. The nerve conduction study will show conduction velocity slowing and/or conduction block.
Depolarized	Changed from a resting electrical potential or polarized state to an excited state
Dermatomes	Cutaneous or sensory areas supplied by a single spinal segment.
Differential Amplifier	An amplifier where the difference between the two points (active and reference) is amplified
Diplopia	Double Vision (usually from unequal action of the eye muscles)

Direct Current	Current that flows in only one direction. Lightning and the current flow from the negative to the positive terminal of a battery are examples.
Distal	Farther away from a point of reference
Distal latency	The time between a the stimulus and the onset of a response.
Dorsal (Dorsum)	The back, posterior
Dorsal root ganglion	The anatomical location of the sensory neurons. Lies outside the spinal cord along the dorsal spinal root.
Dorsal ulnar cutaneous nerve	Sensory branch of the ulnar nerve leaves the main trunk 5-8 cm proximal to the ulnar styloid. Receives sensation from the dorsum of the hand over the 4 th and 5 th metacarpals.
Duration (Stimulus)	The length of time a stimulus is applied. Measured in milliseconds and is limited to a maximum 1 ms.
Duration	A measurement from the first deviation from the baseline (takeoff) to the next crossing of that same baseline (negative phase).
Efferent	Otherwise known as motor neurons – carry nerve impulses <i>away</i> from the central nervous system to muscles.
Electrical Interference	The disruption or distortion of the true electrical characteristics. Often called <i>Noise</i> .
Electromagnetic Force	The most common cause of electrical interference. The energy created around electrified wires and energized circuits. This EMF affects other wires and circuitry in close proximity.
Electrons	A particle in an atom that is negatively charged
End Plate Noise/End Plate Spikes	Seen in muscles at rest are thought to represent the active area in an otherwise silent muscle very near the nerve terminals. Needle insertion into the end plate region is associated with pain.
Epineurium	Connective tissue that contains nerve bundles
Erb's point	Formed in the triangle between the clavicle and the sternocleidomastoid muscle. This is the access point we use when stimulating the brachial plexus.
Extensor	A muscle that extends a joint
Extensor digitorum brevis	Muscle innervated by the deep peroneal nerve commonly used when recording the peroneal motor conduction study.
Extensor digitorum communis	Muscle innervated by the radial nerve in the forearm sometimes used when recording radial motor conduction

	studies.
Extensor indicis proprius	Muscle innervated by the radial nerve in the forearm often used when recording radial motor conduction studies.
Exteroceptors	Sensory receptors located near the surface of the skin that sense pain, temperature and pressure.
F-estimate	A calculation used when recording F-waves to help determine if a prolonged latency is due to a proximal lesion or a result of an unusually tall patient.
F-wave	A CMAP recorded from any motor nerve activated by antidromic stimulation that travels centrally into the spinal cord through the interneurons and anterior horn cells and then orthodromically from the spinal cord to the muscle. The F-wave amplitude is much smaller and of longer latency than the direct CMAP.
Facial nerve	Cranial nerve VII supplies the muscles of the face for facial expression. There are 5 major peripheral branches: temporal (frontalis muscle), buccal (orbicularis oris muscle), mandibular (mentalis muscle), zygomatic (orbicularis oculi, and nasalis muscles), and cervical (superficial muscles in the neck).
Facilitation	An increase in amplitude following identical stimulations seen in repetitive stimulation.
Fascicles	Nerve fiber bundles having a common destination
Fasciculation	Random, slow, irregular and spontaneous twitching of a group of muscle fibers belonging to a single motor unit and is often visible with simple observation. Can be seen in a variety of disorders including motor neuron disease.
Fasciculations	Random contractions of a group of muscle fibers representing a whole or part of a motor unit. Fasciculations are usually visible.
Fibrillations	Spontaneously firing action potentials originating from denervated single muscle fibers. Has the same clinical significance as positive waves.
First dorsal interosseous muscle	Muscle connected to the radial side of the second metacarpal; it is innervated by the ulnar nerve, specifically the deep palmar branch of the ulnar nerve. This muscle is commonly used as a recording point for the deep palmar branch of the ulnar nerve.
Flexor	A muscle that flexes a joint
Foot drop	Weakness when dorsiflexion of the foot. Can be seen in

	peroneal neuropathies and L5 radiculopathies.
Frequency	The speed at which AC alternates. Measured in Hertz. In the U.S. the standard electrical circuit is 60 Hz, while in Europe it is 50 Hz.
Ground	Essentially means earth. The place where excess charges are neutralized or discharged.
Guillain-Barré syndrome	An acute, autoimmune, polyneuropathy usually triggered by an acute infectious process. GBS can be life threatening. Also see Acute Inflammatory Demyelinating Polyneuropathy.
Guyon's Canal	As the ulnar nerve enter the wrist it enters Guyon's canal between the hook of hamate and pisiform bones. This is the approximate location the main ulnar trunk splits into the superficial and deep branches.
H-reflex	H-wave is the preferred term. A submaximal stimulus that arises from large Ia afferent of the muscle activates a monosynaptic reflex arc. After entering the dorsal horn of the spinal cord the Ia afferents synapse with the alpha motor neurons that activate that muscle and a CMAP is produced completing the reflex arc.
Habituation	When a stimulus is applied repeatedly a decreased amplitude of a reflex response can occur.
Height	Time measurements vary with the height of a patient. Care must be used to reflect these changes and not cause a false positive.
Hereditary Motor Sensory Neuropathy	Several types, but Type I is most common. This is the same as Charcot-Marie-Tooth Type I. HMSN Type I is a slowly progressive, motor more than sensory, areflexic, distal neuropathy. Commonly these patients have pes cavus and hammer toes.
Hertz (Hz)	Unit of measure for frequency.
High Frequency Filter	A filter that eliminates or attenuates (reduces) unwanted high (fast) frequencies.
Impedance	A description of resistance in a circuit (usually AC circuits)
Inching	A nerve conduction technique where the nerve is stimulated at multiple short distances along a nerve to localize a lesion.
Inferior (Infra-)	Below or beneath
Innervate	To supply (an organ or a body part) with nerves. For instance, a nerve innervates specific muscles.

Insertional activity	The burst of activity that occurs with needle insertion and needle movement. Should last between 300 and 500 msec. Prolonged IA could be an early indicator of denervation.
Insulators	Elements that do not allow electrons to readily pass. Opposite of conductor. Air is the best insulator.
Intensity (Stimulus)	Refers to the amount of electrical energy applied to produce a measurable response. Measured in Volts or milliamps. All EMG instruments have a range that does not exceed 400 V or 100 mA.
Interneurons	Neurons wholly contained within the spinal cord, including the neurons in the dorsal gray column that function to transmit sensory impulses directly to motor unit cells in reflex responses.
Interoceptors	Sensory receptors located in the smooth muscles of the viscera and internal organs that sense pain and pressure.
Ions	An atom with an additional electron (- ion) or a missing electron (+ ion)
Jitter	Also called Mean Consecutive Difference. The variability of consecutive discharges between two muscles fibers belonging to the same motor unit.
Lambert-Eaton Myasthenic Syndrome	A disorder of the neuromuscular junction where there is a decrease in the production of Ach in the pre-synaptic terminals.
Latency	A measurement of the time needed for the stimulus to travel from stimulation point to recording point (recording point may be the initial takeoff, the first positive peak or the negative peak).
Lateral	Farther away from the midline of the body
Lateral antebrachial cutaneous nerve	The sensory portion of the musculocutaneous motor nerve. Supplies sensation to the lateral portion of the forearm. From the C5/6 nerve roots, upper trunk and lateral cord.
Lateral femoral cutaneous nerve	A pure sensory nerve supplying sensation from the lateral portion of the thigh. Arises from the L2/3 roots.
Lateral plantar nerve	A mixed nerve extending from the tibial nerve innervates the abductor digiti quinti pedis muscle. Provides sensation to the lateral sole and the lateral half of the fourth and the fifth toe.
Lesion	Wound, compression, tumor or injury
Low Frequency Filter	A filter that eliminates or attenuates (reduces) unwanted low

	(slow) frequencies.
M-wave or M-response	A CMAP to the muscle of a motor nerve.
Martin-Gruber anastomosis	An anomalous innervation where fibers from the median nerve cross to the ulnar nerve in the forearm. Commonly MGA reveals decreased ulnar amplitude at the elbow (or below the elbow) as compared to the ulnar amplitude at the wrist. Additionally, and especially in cases of CTS the amplitude of the median elbow response is larger than the median wrist stimulation.
Maximal Stimulation	The point which an increase in stimulus no longer increases the size of the response
Medial	Closer to the midline of the body
Medial antebrachial cutaneous nerve	A pure sensory nerve supplying sensation to the medial forearm. Arising from the C8-T1 nerve roots and lower trunk the MAC nerve comes directly off the medial cord of the brachial plexus.
Medial plantar nerve	A mixed nerve extending from the tibial nerve innervates the abductor hallucis brevis muscle. Provides sensation to the medial sole and the first three and medial half of the fourth toes.
Median nerve	Arising from the C6-T1 roots the median nerve traverses all trunks and the lateral and medial cords of the brachial plexus. The first muscle innervated by the median nerve is the pronator teres in the proximal forearm. The median nerve gives off a purely motor branch called the anterior interosseous nerve. The median nerve provides sensation to digits I-III and the lateral half of digit IV. It also innervates the thenar muscles in the hand.
Meralgia paresthetica	Common entrapment of the lateral femoral cutaneous nerve as it passes the inguinal ligament near the anterior superior iliac spine of the pelvis.
Meters per second	The measurement used to calculate conduction velocity. Abbreviated m/s. For example $200 \text{ mm} / 4 \text{ ms} = 50 \text{ m/s}$
Microvolt	1/1,000,000 of a volt. Abbreviated μV
Milliseconds	1/1000 of a second. Abbreviated ms or msec.
Millivolts	1/1000 of a volt. Abbreviated mV.
Mononeuritis multiplex or Mononeuropathy multiplex (MNM)	Asymmetric loss of sensory and motor function of individual peripheral nerves (i.e. multiple mononeuropathies). Can be seen in metabolic (i.e. diabetes), auto-immune diseases (i.e. Lupus), infectious diseases (i.e.

	Lyme's or HIV) among other more rare disorders.
Mononeuropathy	A disease or disorder that involves a single nerve
Monopolar needle electrode	Covered with Teflon except at the tip, this needle serves as the active electrode. A second electrode (needle or surface) acting as the reference electrode is placed nearby.
Motor	Having to do with movement of a muscle, but in a broad sense the motor pathway begins in the in the brain, extends through the brainstem, down the corticospinal tracts (90% lateral corticospinal, crossover in the medulla, and 10% anterior corticospinal tract which crosses over just before exiting the spinal cord), out the spinal cord and down the nerves finally, synapsing into the respective muscle to provide muscle movement.
Motor Neuron Disease (MND)	A group of diseases which affect the motor neurons, but most common are ALS and SMA.
Motor Point	Usually the belly of the muscle used in MNC; technically the endplate zone.
Motor Unit	Smallest functional unit of the motor system. Consists of a motor neuron, its axon and all the muscle fibers innervated by the axon.
Musculocutaneous nerve	Arises from the C5-6 nerve roots, upper trunk and lateral cord of the brachial plexus. This nerve supplies the biceps muscle which is the common recording location during MNC studies.
Myalgia	Muscle pain
Myasthenia Gravis	A disorder of the neuromuscular junction a disease characterized by progressive weakness and exhaustibility of voluntary muscles (without atrophy or sensory disturbance) and caused by an autoimmune attack on acetylcholine receptors at neuromuscular junctions
Myelin	A fatty substance surrounding axons that functions to insulate and increase the conduction velocity of the axon.
Myokymia	A slow contraction of small bands of muscle fibers. Gives a rippling appearance to the overlying skin.
Myopathy	Disease of the muscles. Classically a proximal more than distal pattern of weakness. Typically the NCS is normal in myopathies.
Myotomes	Muscles supplied by a single spinal segment.
Myotonic discharges	Waxing and waning in frequency. Dive bomber sound. Seen in myotonic dystrophy.

Needle Examination	Needle electrodes inserted into specific muscles to identify abnormal electrical signals originating from the nerve or muscle.
Neurapraxia	Failure of nerve conduction in the absence of structural changes (primarily demyelinating as seen with slowing of the nerve conduction studies without axonal damage, meaning good prognosis)
Neuromuscular junction	The electro-chemical connection between the nerve and muscle. The neuromuscular transmitter of the NMJ is acetylcholine.
Neuromyotonic discharges	High frequency bursts that decrement. Originate in the motor axons and seen in chronic neuropathies and Spinal Muscular Atrophy
Neuropathy	Disease or disorder that affects the Peripheral Nervous System
Neurotmesis	Partial or complete severance of a nerve, with disruption of the axon, its myelin sheath and connective tissue (mixed axonal and demyelinating when both conduction time and amplitude are affected)
Neutrons	Neutral particles that, along with protons, form the nucleus of an atom.
Nodes of Ranvier	Breaks in segments of myelin sheaths along an axon through which ion channels allow the flow of ions across the nerve membrane.
Normal Values	Mean values of large numbers of subjects with added/subtracted standard deviations (2.5 or 3 SD's usually).
Ohm's Law	$E \text{ (voltage) } = I \text{ (current) } \cdot R \text{ (resistance)}$, used to calculate the flow (or resistance to the flow) of electricity.
Ohms	The unit of measure of resistance
Orthodromic conduction	Nerve conduction propagation in the normal physiological direction.
Peak-to-peak	Amplitude measurement from the highest negative peak to the lowest positive peak.
Perineurium	Protective layer of tissue surrounding fascicles.
Peroneal nerve (fibular nerve)	The common peroneal nerve branches from the sciatic nerve in the lower one-third of the thigh. Fibers arise from the L4-S1 nerve roots. The common peroneal nerve bifurcates into the deep peroneal and superficial peroneal nerves near the fibular head. Innervate muscles of dorsiflexion and eversion

	of the foot. Common recording sites include the extensor digitorum brevis in the lateral foot and the tibialis anterior. Sensation to the dorsum of the foot and toes is primarily supplied by the superficial peroneal nerve.
Peroneal palsy or peroneal nerve compression	Caused by damage to the peroneal nerve, characterized by loss of movement of or sensation in the foot and leg. Caused by habitual leg crossing, regularly wearing high boots or pressure to the knee from positions during deep sleep or coma
Phalen's test or Phalen's sign	Forceful flexation for the wrists for one minute. This maneuver commonly reproduces the tingling sensation in digits I-III in patients with carpal tunnel syndrome.
Phase cancellation	With longer distances especially in sensory NCS, (i.e. proximal stimulation) the varied fast and slow fibers cancel one another as one phase of the slow fibers reaches the recording electrode as the trailing phase of the fastest fibers pass the same recording electrode, causing an apparent loss of amplitude.
Plexus	From latin <i>plex</i> - it means a network or interwoven mass. There are 4 plexuses, but we focus on 3, the brachial plexus, the lumbar plexus and the sacral plexus.
Polarized	Having an electrical potential – in the case of nerve cells, in an unexcited or resting electrical state.
Polyneuropathy	A disease or disorder that involves more than one nerve
Positive Sharp Waves	Spontaneously firing action potentials originating from denervated single muscle fibers. Has the same clinical significance as fibrillations.
Posterior	In the back of or behind, dorsal surface
Pronate	Medial rotation of a limb
Prone	Lying on the stomach, face down
Proprioceptors	Sensory receptors located in the deep tissue surrounding tendons and joints that provide the CNS with information about the position of the extremities.
Protons	Positively charged particles of an atom. Along with neutrons, protons make up the nucleus.
Proximal	Closer to a point of reference
Ptosis	Upper eyelid droop caused by muscle weakness or paralysis
R1, R2 waves	Expected responses in Blink Reflex Studies. R1 is the ipsilateral, early response. R2 is the late response that occurs

	on both sides and is associated with the physical blink.
Radial nerve	A continuation of the posterior cord the radial nerve has fibers from all roots supplying the brachial plexus, C5-T1. A key muscle innervated by the radial nerve is the triceps. There is a pure motor branch off the radial nerve called the posterior interosseous that innervates the extensor digitorum communis and the extensor indicis proprius which are commonly used during radial MNC testing (other extensor muscles are innervated by the posterior interosseous as well). A sensory branch called the superficial radial nerve comes off near the elbow and supplies sensation to the lateral portion of the dorsum of the hand.
Radiculopathy	Disease or disorder that affects the nerve at the spinal nerve root.
Rate	The number of times a stimulus is delivered in a second. Measured in Hertz (Hz), cycles per second (cps) or pulses per second (pps)
Recruitment	The pattern on needle EMG created with gradually increasing muscle contraction.
Repetitive nerve stimulation	Repeated supramaximal stimuli given in a short train at a given and fixed frequency to evaluate amplitude changes in the muscle. Most commonly used to look at disorders of the neuromuscular junction (i.e. myasthenia gravis and Lambert-Eaton).
Repolarized	Changed from an excited state back to a resting electrical potential or polarized state.
Resistance	The flow of electricity between two points is reduced because of a specific material. Materials such as insulators have high resistance.
Resistors	Electrical devices that provide specific resistances used to control current and voltage in electrical circuits.
Saliatory conduction	Propagation of a nerve impulse from node to node in a myelinated axon.
Schwann cells	Fatty tissue cells surrounding axons.
Sensitivity	The vertical measurement of size, or amplitude on the screen. Most systems report the sensitivity per division. (May be mV or μ V)
Sensory	Having to do with the sensations from the skin, but in a broad sense the sensory pathways only begin in the skin. The sensation travels along the axon to the dorsal root ganglion, and into the tracts in the spinal cord

	(spinothalamic tracts decussate here), through the brainstem (dorsal tracts decussate here) finally, to the sensory cortex of the brain.
Skin condition	Oils, lotions and even dry skin caused increased impedance, thus additional unwanted artifact.
Single Fiber EMG	A needle EMG technique used to record single muscle fiber action potentials using a small recording surface and modified settings. Nonspecific in several diseases, but known best for its use in neuromuscular junction disorders.
SNAP	Sensory Nerve Action Potential. The response acquired after stimulation of the afferent portions of a sensory or mixed nerve. Usually originate in the cutaneous receptors and transmit to the sensory cell bodies in the dorsal root ganglion.
Spontaneous activity	Activity occurring after insertional activity (i.e. needle movement). Other than end plate potentials there should be no spontaneous activity so, it is considered abnormal if present.
Stimulus	Technically electrical stimulus, is what we do to a patient to elicit or produce a measurable response
Superior (Supra-)	Above or over
Supinate	Lateral rotation of a limb
Supine	Lying on the back, face upward
Supramaximal Stimulation	Usually 25% above maximal (the point which an increase in stimulus no longer increases the size of the response)
Sural nerve	Originates from communication branches of both the peroneal and tibial nerves after they split from the sciatic nerve. Purely sensory nerve supplying sensation to the posterolateral lower leg and lateral foot. Easily accessible the sural nerve is a valuable nerve
Synapse	The space between two neurological components that functions to propagate or transfer an electrical impulse through a chemical process.
Tarsal Tunnel Syndrome	A condition where the tibial nerve is compressed as it travels under the flexor retinaculum.
Temperature	The limb temperature. Affects the latency, amplitude and conduction velocity. Verify the limb temperature.
Thoracic Outlet Syndrome	Compression of nerves and vessels between the neck and axilla can be non-neurogenic (no nerves involved) or neurogenic (nerves involved). Neurogenic TOS is very rare

	and it has unique NCS findings.
Tibial nerve	The largest branch of the sciatic nerve and L4-S3 nerve roots. Responsible for plantar flexion of the foot. The calcaneal nerve comes off the trunk of the tibial nerve under the flexor retinaculum. Then the tibial nerve bifurcates into the medial and lateral plantar nerves supplying sensation to the sole of the foot and innervating the abductor hallucis (medial plantar) and abductor digiti quinti pedis (lateral plantar) which are commonly used to record motor NCS.
Tibialis anterior muscle	The first muscle innervated by the deep peroneal nerve controls dorsiflexion of the foot. It is commonly used when recording peroneal NCS's.
Time base	The horizontal measurement of time displayed on the screen. Most systems report the time base per division and 10 divisions horizontally on the screen.
Tinel's sign	The tapping of a nerve where it is superficial. A positive Tinel's sign of the median nerve means tapping the median nerve reproduces the symptoms of CTS.
Ulnar nerve	Arising from the C8 and T1 nerve roots and the lower trunk the ulnar nerve is essentially a continuation of the medial cord of the brachial plexus. It is superficial behind the elbow and there are common entrapment sites near there. The ulnar nerve innervates the abductor digiti minimi and the 1st dorsal interosseous in the hand (commonly used when recording MNC's). Sensation is supplied to the palmar side of the medial hand (medial half of digit IV and digit V). A superficial branch of the ulnar nerve comes off the trunk approximately 6-8 cm proximal the wrist called the dorsal ulnar cutaneous which supplies sensation to the similar portion of the hand on the dorsum side.
Ulnar neuropathy at the elbow	The most common site of ulnar neuropathy is in the epicondylar groove at the elbow.
Ventral	The front, anterior
Volar	Pertaining to the palm or sole, flexor surface of the forearm or wrist
Voltage	Electrical potential differences, which create the force to "drive" electrons toward equilibrium.
Volume Conduction	Spread of the stimulation to nearby nerves resulting in erroneous results.
Wallerian degeneration	Axonal degeneration that progresses from the place of injury along the axon (i.e. distal to a lesion)

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