

# Glossary

Grasp the subject, the words will follow.

Cato the Elder

| TERM                          | DEFINITION                                                                                                                                                                                                                        |
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| <b>Acute</b>                  | Referring to something occurring with an abrupt onset.                                                                                                                                                                            |
| <b>Amplitude</b>              | The height of the <i>EEG wave</i> , which is a measure of the electric charge (i.e., the voltage) generated by the firing <i>neurons</i> .                                                                                        |
| <b>Amygdala</b>               | A small almond-shaped structure located in the temporal lobe of the brain (in both halves) at the end of the hippocampus; responsible for processing memories and regulating emotions and behaviors (both positive and negative). |
| <b>Antiseizure medication</b> | Medication to reduce, prevent, or stop <i>seizures</i> . Also known as anticonvulsants, antiepileptic drugs (AEDs), or simply seizure medications or seizure drugs.                                                               |
| <b>Artifact</b>               | An element of interference that shows up on an EEG recording due to something other than brain activity. Artifacts might be associated with eye blinks, muscle contractions, swallowing, or movement.                             |
| <b>Atonic</b>                 | Referring to the sudden loss of muscle tone in the head, trunk, jaw, and limbs.                                                                                                                                                   |
| <b>Aura</b>                   | A sensation or symptom experienced at the onset of a neurological event.                                                                                                                                                          |
| <b>Automatisms</b>            | Repetitive, often excessive, actions involving the face, arms, or legs performed without conscious thought or intention; may include lip-smacking, chewing, repetitive hand movements, or picking at the hair or clothing.        |

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| <b>Autonomic</b>           | Relating to involuntary actions controlled by the autonomic nervous system. In the context of a seizure, autonomic signs and symptoms may include racing heart, feelings of hot or cold, goosebumps, drooling, or gastrointestinal sensations.                                                                           |
| <b>Awareness</b>           | The individual's state of consciousness and knowledge of self or environment. In the context of a seizure, awareness refers to no loss of consciousness during the seizure; the individual may be able to carry on a conversation or complete a task and will likely recall the events during the seizure after it ends. |
| <b>Background</b>          | Typical <i>baseline</i> brain wave activity when the brain is at rest.                                                                                                                                                                                                                                                   |
| <b>Baseline</b>            | A starting point; in the context of a <i>seizure</i> , a baseline is defined as an individual's typical feelings and activities when not experiencing a seizure.                                                                                                                                                         |
| <b>Behavioral arrest</b>   | The abrupt stopping of talking and moving; when an individual appears to "freeze up."                                                                                                                                                                                                                                    |
| <b>Benign</b>              | Referring to something that is not harmful.                                                                                                                                                                                                                                                                              |
| <b>Bipolar montage</b>     | In <i>EEG</i> ; a common arrangement of channels organized by electrode pairs near to each other that allows for the comparison of brain areas and recognition of seizure onset zones.                                                                                                                                   |
| <b>Brain stem</b>          | The bottom part of the brain that connects the <i>cerebrum</i> to the spinal cord, where many functions responsible for survival are located (e.g., breathing and heart rate). The brain stem also serves as a relay station for messages between different parts of the body and the <i>cerebral cortex</i> .           |
| <b>Broca's area</b>        | An area of the brain involved in production of speech; located in the left (or opposite the dominant hand) frontal lobe of the brain.                                                                                                                                                                                    |
| <b>Cardiac arrhythmias</b> | Atypical heart rhythms that may be too slow, too fast, or irregular.                                                                                                                                                                                                                                                     |
| <b>Cardiologist</b>        | A medical professional who specializes in the care of the heart and blood vessels.                                                                                                                                                                                                                                       |

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| <b>Cardiovascular conditions</b>               | Conditions that involve the heart and blood vessels.                                                                                                                                                            |
| <b>Cardiovascular system</b>                   | The system in the body made up of heart and blood vessels, including the arteries, veins, and capillaries. This system transports blood to all areas of the body.                                               |
| <b>Central nervous system (CNS)</b>            | The part of the nervous system composed of the brain and spinal cord.                                                                                                                                           |
| <b>Cerebral cortex</b>                         | The outer layer of the <i>cerebrum</i> ; made up of four lobes, it is responsible for the majority of voluntary actions, as well as thinking, learning, consciousness, personality, and many of the senses.     |
| <b>Cerebral palsy (CP)</b>                     | A group of permanent disorders of the development of movement and posture causing activity limitation that are attributed to nonprogressive disturbances that occurred in the developing fetal or infant brain. |
| <b>Cerebellum</b>                              | The part of the brain located at the back of the head, under the <i>cerebrum</i> ; it helps with maintaining balance and posture, coordination, and fine motor movements.                                       |
| <b>Cerebrovascular condition</b>               | A condition that involves the brain and its blood vessels.                                                                                                                                                      |
| <b>Cerebrovascular system</b>                  | A subsystem of the <i>cardiovascular system</i> ; it carries blood to and from the brain.                                                                                                                       |
| <b>Cerebrum</b>                                | The front and upper part of the brain; the largest part of the brain. It contains an outer layer, the <i>cerebral cortex</i> , and is divided into two halves (also called hemispheres).                        |
| <b>Channels</b>                                | In <i>EEG</i> , groups of two or more electrodes capturing activity, which is reported as a single output.                                                                                                      |
| <b>Clonic</b>                                  | Referring to repetitive, rhythmic contractions or twitching (repeated stiffening and relaxing or jerking) of specific muscle groups of the limbs, face, or trunk.                                               |
| <b>Combined generalized and focal epilepsy</b> | Epilepsy characterized by both <i>focal onset</i> and <i>generalized onset seizures</i> . Also called combined generalized and focal onset epilepsy.                                                            |

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| <b>Comorbidities</b>                | Conditions that exist along with another condition in an individual.                                                                                                                                                                                                                    |
| <b>Corpus callosum</b>              | The communication pathway located in the center of the <i>cerebrum</i> that connects the two halves of the brain.                                                                                                                                                                       |
| <b>Déjà vu</b>                      | An impression of familiarity without being able to link it to memory.                                                                                                                                                                                                                   |
| <b>Dissociative disorder</b>        | A psychiatric condition that involves disruptions related to memory, identity, emotion, perception, and behavior.                                                                                                                                                                       |
| <b>Drug-resistant epilepsy</b>      | Epilepsy that does not achieve sustained <i>seizure freedom</i> with the use of two appropriate <i>antiseizure medications</i> . Also called drug-refractory, pharmacoresistant, or uncontrolled epilepsy.                                                                              |
| <b>EEG wave</b>                     | In <i>EEG</i> , electrical activity in groups of <i>neurons</i> , captured by <i>electrodes</i> , and recorded on a graph.                                                                                                                                                              |
| <b>EEG waveform</b>                 | Overall shape and pattern of the <i>EEG waves</i> and how they change over time.                                                                                                                                                                                                        |
| <b>Electrodes</b>                   | In <i>EEG</i> , small metal discs placed on the scalp (or inside the skull) that sense and record electrical activity in groups of <i>neurons</i> . Electrodes may be in the form of scalp electrodes, helmet or cap electrodes, MRI-compatible electrodes, or intracranial electrodes. |
| <b>Electroencephalography (EEG)</b> | A test that measures and records the brain's electrical activity, and generates a visual graph of brain waves. When audiovideo recording is used concurrently, it is known as VEEG (video electroencephalography).                                                                      |
| <b>Electrographic activity</b>      | In <i>EEG</i> , electrical activity sensed and recorded by <i>electrodes</i> .                                                                                                                                                                                                          |
| <b>Electrographic seizures</b>      | <i>Seizures</i> without clinical changes, but with <i>EEG</i> changes. Also called subclinical seizures.                                                                                                                                                                                |
| <b>Encephalitis</b>                 | Acute inflammation of the brain tissue.                                                                                                                                                                                                                                                 |
| <b>Epilepsy syndrome</b>            | A characteristic cluster of clinical and <i>EEG</i> features, often supported by specific etiological findings.                                                                                                                                                                         |

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| <b>Epileptic activity</b>                     | In <i>EEG</i> , abnormal electrical activity in the brain.                                                                                                                                                                      |
| <b>Epileptic seizure</b>                      | A seizure associated with a diagnosis of epilepsy.                                                                                                                                                                              |
| <b>Epileptic spasm</b>                        | Sudden movement that lasts for one to two seconds and involves muscle contraction causing flexion (bending), extension (straightening), or mixed flexion-extension of a limb.                                                   |
| <b>Epileptiform discharges</b>                | Distinct <i>EEG</i> waveform patterns representative of epileptic activity.                                                                                                                                                     |
| <b>Episodic dyscontrol</b>                    | Recurrent attacks of uncontrollable rage and violence followed by exhaustion and difficulty recalling the event. Also called intermittent explosive disorder.                                                                   |
| <b>Etiology</b>                               | The cause of a condition.                                                                                                                                                                                                       |
| <b>Febrile seizure</b>                        | A <i>provoked seizure</i> that occurs in an infant or child between six months and five years of age; associated with a temperature of at least 100.4 °F (38 °C), and without brain or spinal cord infection.                   |
| <b>Focal epilepsy</b>                         | Epilepsy characterized by <i>focal onset seizures</i> . Also called focal onset epilepsy.                                                                                                                                       |
| <b>Focal onset seizure</b>                    | A <i>seizure</i> that starts from one half of the brain and leads to signs and symptoms on one side of the body (opposite to the half of the brain in which the seizure occurs). These are often referred to as focal seizures. |
| <b>Frequency</b>                              | A measurement of how many <i>EEG waves</i> occur per second.                                                                                                                                                                    |
| <b>Gastroenteritis</b>                        | A condition that causes inflammation and irritation of the digestive tract, leading to vomiting, diarrhea, or nausea.                                                                                                           |
| <b>Gastroenterologist</b>                     | A medical professional who specializes in the care of the digestive system, including the stomach and intestines.                                                                                                               |
| <b>Gastroesophageal reflux disease (GERD)</b> | A condition where liquid contents from the stomach go back into the esophagus. Also called acid reflux.                                                                                                                         |
| <b>Gene</b>                                   | The basic unit of heredity transferred from parent to offspring.                                                                                                                                                                |

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| <b>Generalized epilepsy</b>      | Epilepsy characterized by <i>generalized onset seizures</i> . Also called generalized onset epilepsy.                                                                                                                                                |
| <b>Generalized onset seizure</b> | A <i>seizure</i> that starts from both halves of the brain and leads to signs and symptoms on both sides of the body; often referred to as a generalized seizure.                                                                                    |
| <b>Genetic epilepsy</b>          | Epilepsy caused by or closely associated with pathologic changes in <i>genes</i> .                                                                                                                                                                   |
| <b>Genetics</b>                  | A branch of science that studies genes or heredity.                                                                                                                                                                                                  |
| <b>Hippocampus</b>               | An area of the brain located deep within the temporal lobe (on both halves of the brain), primarily associated with memory, particularly long-term memory storage and consolidation and decision-making.                                             |
| <b>Hydrocephalus</b>             | A condition in which there is a buildup of cerebrospinal fluid (fluid that surrounds the brain and spinal canal) in cavities (ventricles) in the brain.                                                                                              |
| <b>Hyperkinetic</b>              | Referring to excessive, abnormal, and large involuntary movements that may include motions such as thrashing or leg pedaling.                                                                                                                        |
| <b>Hypoglycemia</b>              | A condition with lower than typical blood glucose (sugar) levels, resulting in confusion, a loss of or decrease in consciousness, lack of coordination, difficulties with speech, and tremors.                                                       |
| <b>Ictal phase</b>               | The active phase of a <i>seizure</i> .                                                                                                                                                                                                               |
| <b>Immune epilepsy</b>           | Epilepsy caused by an alteration in the body's defense system against infections.                                                                                                                                                                    |
| <b>Impaired awareness</b>        | Alteration or loss of consciousness during a <i>seizure</i> ; the individual may appear confused, may not be able to respond, or may experience a loss of consciousness and will typically not fully recall the events of the seizure after it ends. |
| <b>Infectious epilepsy</b>       | Epilepsy caused by a previous (not <i>acute</i> ) infection in the brain.                                                                                                                                                                            |
| <b>Infertility</b>               | The failure to achieve a pregnancy after 12 months or more of regular, unprotected sexual intercourse.                                                                                                                                               |

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| <b>International 10–20 system</b> | A commonly used pattern of electrode placement; electrodes are placed either 10 or 20 percent of the total distance of bony landmarks on the skull.                                                                     |
| <b>Ions</b>                       | Charged particles; examples include sodium, potassium, chloride.                                                                                                                                                        |
| <b>Ketogenic diet</b>             | A form of dietary therapy that restricts the intake of carbohydrates, allows for a moderate amount of protein, and greatly increases the intake of fats to induce a metabolic state known as ketosis in the individual. |
| <b>Meningitis</b>                 | Acute inflammation of the membranes (meninges) surrounding the brain and spinal cord.                                                                                                                                   |
| <b>Metabolic</b>                  | Referring to chemical processes that allow cells in the body to convert food into energy.                                                                                                                               |
| <b>Metabolic epilepsy</b>         | Epilepsy caused by a <i>metabolic</i> disorder.                                                                                                                                                                         |
| <b>Migraine</b>                   | A type of headache with moderate to severe throbbing and pulsating pain.                                                                                                                                                |
| <b>Monotherapy</b>                | The use of one <i>antiseizure medication</i> .                                                                                                                                                                          |
| <b>Motor cortex</b>               | The area of the <i>cerebral cortex</i> in the frontal lobe responsible for voluntary movements.                                                                                                                         |
| <b>Motor signs</b>                | Uncontrolled physical movement experienced by the individual during the <i>seizure</i> that can be seen by observers.                                                                                                   |
| <b>Myoclonic</b>                  | Single or multiple involuntary muscle contractions that are sudden and last less than a second.                                                                                                                         |
| <b>Narcolepsy</b>                 | A disorder characterized by excessive sleepiness during the day and often presenting with irresistible sleep attacks.                                                                                                   |
| <b>Neuromodulation</b>            | Repetitive electrical discharges administered through a device for the management of epilepsy; these devices are surgically implanted.                                                                                  |
| <b>Neuron</b>                     | The smallest unit of the nervous system; electrically excitable cells that carry information (signals) between the <i>central nervous system</i> and the rest of the body as electrical impulses.                       |

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| <b>Neurotransmitters</b>                                | Special chemicals that carry a signal across the <i>synapse</i> either stimulating (exciting) the next <i>neuron</i> or cell to take action or preventing (inhibiting) it from doing so.                                                                             |
| <b>Nonmotor signs and symptoms</b>                      | What the individual who is seizing experiences; these may be observed by others if they include a lack of movement, emotional outbursts, or a change in vital signs.                                                                                                 |
| <b>Parasomnias</b>                                      | A group of sleep disorders characterized by unusual behaviors that occur just prior to falling asleep, while asleep, or just upon waking up and may be accompanied by loss of consciousness and the inability to recall the event.                                   |
| <b>Phase</b>                                            | In <i>EEG</i> , a measurement of the timing relationship between different <i>EEG waves</i> .                                                                                                                                                                        |
| <b>Polytherapy</b>                                      | The use of more than one <i>antiseizure medication</i> .                                                                                                                                                                                                             |
| <b>Postictal phase</b>                                  | The last stage of a <i>seizure</i> .                                                                                                                                                                                                                                 |
| <b>Postural orthostatic tachycardia syndrome (POTS)</b> | A group of conditions where bloodflow to the heart is impacted after an individual changes position, resulting in a symptom known as orthostatic intolerance. Individuals with orthostatic intolerance feel faint or lightheaded when moving from lying to standing. |
| <b>Preictal phase</b>                                   | The first stage of a <i>seizure</i> .                                                                                                                                                                                                                                |
| <b>Prevalence</b>                                       | The proportion of a population with a specific characteristic, or condition, in a specified period, often expressed as a percentage.                                                                                                                                 |
| <b>Prognosis</b>                                        | The prospect of recovering from injury or disease, or a prediction or forecast of the course and outcome of a medical condition.                                                                                                                                     |
| <b>Provoked seizure</b>                                 | A <i>seizure</i> associated with a <i>systemic</i> injury or a brain injury. Also called an acute symptomatic seizure.                                                                                                                                               |
| <b>Psychogenic nonepileptic seizures (PNES)</b>         | Involuntary events that may last for several minutes (sometimes 15 to 30 minutes or longer) and often involve loss of consciousness or motor signs such as irregular jerking or shaking of the limbs and falling.                                                    |

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| <b>Reflex seizure</b>    | A type of <i>provoked seizure</i> that occurs after a particular stimulus; very rare, and is typically associated with an <i>epilepsy syndrome</i> (e.g., reading epilepsy and startle epilepsy).                                                                                                                                                   |
| <b>Remission</b>         | Referring to a state where an individual with epilepsy is seizure-free for at least six months.                                                                                                                                                                                                                                                     |
| <b>Resolved</b>          | Referring to a state where an individual with epilepsy has remained seizure-free for 10 years, with no <i>antiseizure medications</i> for the last 5 years, or the individual had an age-dependent <i>epilepsy syndrome</i> and is now past the applicable age for this diagnosis (i.e., self-limited neonatal or infantile epilepsy syndromes).    |
| <b>Risk factor</b>       | An aspect of personal behavior or lifestyle, an environmental exposure, or an inborn or inherited characteristic associated with an increased occurrence of disease or other health-related event or condition.                                                                                                                                     |
| <b>Seizure</b>           | Uncontrolled, abnormal electrical activity of the brain that may cause changes in the level of consciousness, behavior, memory, or feelings.                                                                                                                                                                                                        |
| <b>Seizure freedom</b>   | A set period without any <i>seizures</i> .                                                                                                                                                                                                                                                                                                          |
| <b>Seizure mimic</b>     | An event that appears to be a <i>seizure</i> but is not; rather, it is due to another condition. called nonepileptic event.                                                                                                                                                                                                                         |
| <b>Seizure threshold</b> | The point at which an individual's brain is likely to experience a <i>seizure</i> ; the theoretical sum of the various triggers that are likely enough for the abnormal electrical activity to initiate a seizure.                                                                                                                                  |
| <b>Self-limiting</b>     | Referring to a disease or condition that spontaneously resolves.                                                                                                                                                                                                                                                                                    |
| <b>Shunt</b>             | A device inserted into the ventricles of the brain; the shunt tubing (catheter) drains the cerebrospinal fluid from the ventricles and transports it to a reservoir where it is stored and then pumped to the peritoneal cavity (a space within the abdominal area not occupied by the abdominal organs). There, the fluid is absorbed by the body. |

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| <b>Sleep myoclonus</b>                             | A sudden, involuntary muscle jerk often accompanied by a hallucination of movement, experienced as a feeling of falling. These events are very brief and occur during sleep transitions (falling asleep or waking up).                     |
| <b>Somatosensory cortex</b>                        | The area of the <i>cerebral cortex</i> in the parietal lobe responsible for receiving sensory information.                                                                                                                                 |
| <b>Spasm</b>                                       | A brief, involuntary muscle contraction.                                                                                                                                                                                                   |
| <b>Status epilepticus</b>                          | A life-threatening condition in which <i>seizures</i> last more than five minutes or occur in close succession (one after the other, without a return to <i>baseline</i> ).                                                                |
| <b>Stereotypies</b>                                | Semivoluntary repetitive movements that are often rhythmic and may include clapping or arm shaking.                                                                                                                                        |
| <b>Stroke</b>                                      | A condition in which a blood vessel in the brain is either blocked or ruptured, damaging the brain and causing symptoms such as paralysis, speech problems, and memory loss.                                                               |
| <b>Structural epilepsy</b>                         | Epilepsy caused by a distinct abnormality of the brain.                                                                                                                                                                                    |
| <b>Subclinical seizure</b>                         | <i>Seizures</i> without clinical changes but with <i>EEG</i> changes. Also called <i>electrographic seizures</i> .                                                                                                                         |
| <b>Sudden unexpected death in epilepsy (SUDEP)</b> | The death of an individual with epilepsy when no other cause of death can be found.                                                                                                                                                        |
| <b>Synapse</b>                                     | The junction between the sending neuron and the receiving neuron or cell.                                                                                                                                                                  |
| <b>Syncope</b>                                     | A condition that involves <i>self-limiting</i> transient (temporary) loss of consciousness with the inability to maintain a standing or unsupported posture and may be accompanied by brief jerking movements. Also called fainting spell. |
| <b>Systemic</b>                                    | Referring to affecting the entire body.                                                                                                                                                                                                    |
| <b>Tic</b>                                         | An involuntary, sudden, rapid, and repetitive sound or movement.                                                                                                                                                                           |
| <b>Tonic</b>                                       | Referring to a sustained muscle contraction resulting in a sudden stiffness or tense posture; typically seen as an extension of the limb.                                                                                                  |

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| <b>Tonic-clonic</b>                    | Referring to movements that occur in two stages: tonic movements in which the individual loses consciousness and the muscles suddenly contract (lasting about 10 to 20 seconds) followed immediately by clonic movements in which the muscles repetitively and rhythmically contract (lasting 1 or 2 minutes or less). |
| <b>Transient ischemic attack (TIA)</b> | A condition in which a blood vessel in the brain is temporarily (transient; lasting for a short time) blocked causing temporary symptoms like a <i>stroke</i> .                                                                                                                                                        |
| <b>Unknown epilepsy</b>                | Epilepsy without a definitive cause.                                                                                                                                                                                                                                                                                   |
| <b>Unknown onset seizure</b>           | A <i>seizure</i> with an unclear starting location in the brain.                                                                                                                                                                                                                                                       |
| <b>Unprovoked seizure</b>              | A <i>seizure</i> that occurs without a specific <i>acute</i> cause.                                                                                                                                                                                                                                                    |
| <b>Wernicke's area</b>                 | An area of the brain located in the left (or opposite the dominant hand) temporal lobe; involved in understanding and comprehension of speech.                                                                                                                                                                         |