



A GUIDE THROUGH  
THE BIPOLAR BRAIN

## Glossary of Key Terminology

**Acute mania:** A persistent and intense episode of manic behavior, characteristic of bipolar disorder, that includes abnormal over activity, impaired judgment, elevated mood, irritability, reckless behavior; may include violent behavior or hallucinations or delusions.

**Alcoholic:** An individual with uncontrolled alcohol consumption and preoccupation with alcohol.

**Alcoholism:** Clinically, also referred to as Alcohol Use Disorder; characterized by consumption of large amounts of alcohol, a persistent desire to use or unsuccessful efforts to control use of alcohol, excessive time spent obtaining or using alcohol or recovering from excessive use, cravings for alcohol, or failure to fulfill role obligations at work/school/home due to alcohol use.

**Altruistic:** Actions to assist others without expectation of reward or concern for one's own interests or needs.

**Alzheimer's:** A neurodegenerative disease that is initially characterized by memory loss followed by language issues, disorientation, mood swings, and difficulties with self-care. Over time, bodily functioning deteriorates leading to death.

**Antidepressant:** A type of drug used for the treatment of depression; though antidepressant medication does not cure depression, it can significantly reduce the symptoms of depression; antidepressants are particularly effective when used in conjunction with therapy.

**Anxiety:** An intense and excessive feeling of worry, nervousness and apprehension; for some individuals, these feelings can be overwhelming and crippling and significantly interfere with carrying out the daily demands of life.

**Arrhythmia:** An irregular heartbeat.



**At-risk:** A term used to describe an individual who has challenges that may impede successful performance and may need temporary or long-term interventions and supports to succeed.

**Autism:** Clinically, referred to as Autism Spectrum Disorder (ASD); a neurodevelopmental disorder characterized by difficulties with verbal and non-verbal communication, developing, maintaining and understanding relationships, and restricted, repetitive patterns of behavior, interests, or activities; the characteristics of ASD fall along a continuum, with some individuals displaying mild characteristics, and others displaying more severe characteristics.

**Avoidance:** A maladaptive manner of coping with stress in which one seeks to escape or terminate the stressor.

**Behavior(al) change:** A change in one's actions through the adoption of alternative routines to increase or maintain one's health or well-being.

**Biochemistry:** The scientific study of chemical processes in living organisms.

**Biological:** Relating to one's genetics, or hereditary traits.

**Biomarker:** A characteristic of one's biochemical or genetic makeup that is an indicator of a specific biological condition or disorder; obtained through analysis of one's bodily fluids.

**Bipolar disorder:** Formerly referred to as "manic depression;" a disorder of one's mood characterized by alternating periods of severe depression and mania.

**Bipolar gene:** Part of one's hereditary make up that influences the development of bipolar disorder.

**Bipolar neurons:** A specialized nerve cell that has two extensions specialized to transmit special senses; they assist with smell, sight, taste, hearing, and equilibrium.

**Brain circuits:** A network of pathways along which electrical and chemical signals travel within the brain.

**Brain science:** A branch of neuroscience concerned with the brain and its functions.

**Cell(s):** The smallest structure and building block of any organism; cells are typically microscopic; groups of cells with a similar structure and purpose form tissues.



Cell line: See cell; a culture (grouping) of cells with similar genetic makeup.

Chemical engineering: A branch of engineering that works with chemistry in the industrial process.

Circadian rhythm: Informally referred to as an “internal body clock,” which regulates our physiology and can be affected by environmental events; a growing body of research is examining the effects of disruptions on health and well-being.

Circuits: See electrical circuits.

Cognitive testing: A variety of tests administered to an individual to assess a range of one’s functioning in areas such as verbal reasoning, spatial awareness, intelligence, and short/long term memory.

Commitment / Committing family members: A legal process in which individuals displaying characteristics of mental illness, and deemed dangerous to themselves or others, are court ordered to receive inpatient or outpatient psychiatric and psychological treatment.

Comorbidity: The co-occurrence of two or more conditions or chronic disorders.

Crackhead(s): An individual addicted to crack-cocaine.

Crack high: A euphoric state triggered by the use of crack cocaine.

Daily routine: One’s activities of daily living.

Deep Brain Stimulation (DBS): A surgical procedure in which electrodes are inserted into pre-mapped areas of the brain; electrical impulses are applied to those areas in order to stimulate them; DBS is used to address a variety of neurological disorders and diseases.

Delusional: An individual’s false and irrational beliefs that persist despite evidence to the contrary; delusions are a characteristic of some mental disorders.

Delusions of grandeur: A false and irrational belief that you are more powerful, important, and influential than you actually are.

Deoxyribonucleic acid (DNA): A molecule that carries all of the genetic information for all life forms.

**Depression:** A mood disorder characterized by persistent feelings of excessive sadness and loss of interest; depression may also include a range of emotional and physical conditions including guilt, hopelessness, difficulty concentrating, lethargy, irritability, fatigue, loss of appetite, weight change, drug use, and suicide.

**Depressive episode:** A persistent and intense period of depression; see depression

**Diabetes:** A chronic metabolic disease in which the body produces insufficient amounts of insulin, thus affecting the levels of sugar in one's blood. Diabetes occurs because the pancreas cannot produce sufficient insulin, or because the body does not respond appropriately to the insulin produced.

**Diagnosis:** Identifying and classifying one's illness through examination of symptoms.

**Drugs:** A chemical substance, either prescription or illegal, that has a physiological effect when used.

**Dullness:** A description of one's mental state characterized as sluggish, unclear, and lacking alertness.

**Electric jelly:** A water based gel or lubricant that is electrically conductive.

**Electrical circuit:** The pathway through which an electrical current flows.

**Electrical current:** A sustained flow of electric charge.

**Electrical impulse:** A sudden burst of electric charge.

**Electrical signal:** An electrical charge and chemical signal processed and transmitted through neurons within the brain; see neuron firing.

**Electroconvulsive Therapy (ECT):** A procedure used to treat serious forms of some mental illness during which electrical currents are passed through the brain; the electrical currents trigger brief seizures in the brain and is used to ease the symptoms of disorders such as depression.

Electrode: A material used to establish electrical contact and allow for the flow of electricity.

Electron microscope: A very high powered microscope that is capable of extreme magnification.

Electroshock treatment: See Electroconvulsive Therapy (ECT).

Emotions: A complex interaction of physiological arousal, feelings, thoughts, and behavior, made in response to a situation.

Engineer: An individual trained in the design and construction of structures or machinery.

Euphoria/Euphoric: An intense feeling of happiness.

Family therapy: A type of psychological counseling provided to family members that seeks to improve communication between members and resolve conflicts.

Fiber optic wires: Glass threads that transmit data via light waves.

Frontal lobe: A part of the brain that controls and regulates important functions such as problem solving, decision making, planning, consciousness, emotions, and behavioral regulation.

Functional Magnetic Resonance Imaging (fMRI): A neuroimaging procedure that measures brain activity by detecting changes in blood flow.

Gene/Genes: A region within one's DNA that determines the hereditary traits transmitted to an organism's offspring and that determines which traits are inherited.

Genetic: Related to one's genes; inherited.

Geneticist: An individual with training in biology who specializes in the study of genes and heredity.

Global Positioning System (GPS): A system of satellites, computers and receivers that allow people to determine their exact location and obtain directions to other locations.

Gold standard: A term used to describe the most effective and reliable of its type.

**Group therapy:** A type of psychological counseling provided to several individuals at the same time, all working on related issues; all members participating provide support to one another and assist with problem solving and behavior change.

**Hallucinating:** The experience of a hallucination.

**Hallucinations:** A significant distortion of reality triggered by a physical or mental disorder, or a reaction to a drug, manifested as a sensory experience; the sensory experience may be visual, auditory, tactile, olfactory, or gustatory.

**Heart disease:** Also referred to as cardiovascular disease; a range of conditions that affect one's heart and its performance including coronary artery disease, heart rhythm problems, and congenital defects.

**Holistic therapy:** A constellation of approaches to improving one's physical, mental, emotional, social and spiritual well-being.

**Human genome:** A complete set of genetic information for an individual.

**Hypomania/hypomanic:** A less severe manifestation of mania; see manic.

**Hypothesis:** A statement made about a possible explanation of the occurrence of some event; the hypothesis is the starting point for further observation and experimentation.

**Individual therapy:** One-on-one psychological counseling with a therapist.

**Inpatient psychiatric unit:** A section within a hospital where individuals displaying characteristics of mental illness, and demonstrating behavior that may be harmful to themselves or others, are admitted for observation and /or treatment.

**Intrinsic plasticity:** The brain's innate ability to change its function and performance over time, due to changes in development, behavior, environment, thinking, emotions, or injury.

**Ketamine (Special K, Vitamin K, Kit Kat):** A medication; a type of anesthetic.

**Kit Kat:** See Ketamine.

**Lifestyle:** The manner in which an individual lives.



Lifestyle change: Changes to the manner in which an individual lives.

Lithium: A drug commonly used to treat bipolar disorder.

Lobotomy: An umbrella term for a series of different surgical procedures that purposely damage brain tissue in order to treat mental illness; completed by severing connections in the brain's prefrontal lobe through injecting ethanol or creating a circular lesion in the brain sometimes through the eye sockets (transorbital lobotomy).

Magnet: A piece of iron, steel, alloy, which has acquired the property of attracting objects containing iron and of aligning roughly north–south when freely suspended; an object producing a magnetic field.

Magnetic coil: A magnetic field generator, or "coil" (a device resembling a corkscrew) is placed near the head of the person receiving Transcranial Magnetic Stimulation (TMS) treatment as a noninvasive method to stimulate small regions of the brain.

Malignant hypertension: Extremely high blood pressure that develops rapidly and causes some type of organ damage.

Mammogram: An X-ray image of the breast(s) used to screen for breast cancer or abnormality; commonly used for screening or diagnostic purposes.

Mania/Manic: A period of at least one week where an elevated, expansive or unusually irritable mood, as well as notably persistent goal-directed activity, is present and is uncharacteristic of the individual's usual state/behavior; these feelings are of sufficient severity to cause difficulty or impairment in occupational, social, educational or other important functioning.

Manic depression: See bipolar disorder

Manic episode: Not a disorder in and of itself, but rather is characteristic of bipolar disorder describing a period of time during which an elevated, expansive or unusually irritable mood, as well as notably persistent goal-directed activity is present; see manic

Medication: A drug or drugs prescribed and given as medical treatment; the action of treating medically.

Meditation: A variety of private devotional exercises consisting of the continuous application of the mind to the contemplation of a particular religious text, truth, mystery, or object; serious and sustained reflection or mental contemplation.

Memory loss: Also referred to as amnesia; unusual forgetfulness; the inability to remember new events, recall one or more memories of the past, or both; a mild decline in memory and the rate of information processing that occurs normally with age, but does not affect daily functioning and does not generally worsen.

Mental health: The state of one's psychological and emotional well-being.

Mental health professionals: A health care practitioner or community services provider who offers services for the purpose of improving an individual's mental health or to treat mental illness (e.g., counselor, social worker, psychologist, psychiatrist).

Mental illness: A condition that impacts a person's thoughts, feelings or mood and oftentimes affects the ability to relate to others and function on a daily basis.

Mind-body connection: One's thoughts, feelings, beliefs, and attitudes that impact, either positively or negatively, biological functioning.

Modified gene: The physical removal of a gene from one organism and inserting it into another, giving it the ability to express the trait encoded by that gene from the original organism.

Molecular genetics: The branch of genetics that deals with hereditary transmission and variation on the molecular level; molecular genetics is concerned with the arrangement of genes on DNA; the replication of DNA.

Mood: A prevailing but temporary state of mind or feeling; a person's humor, temper, or disposition at a particular time.

Mortality: The number of deaths which occur in a given area or period, from a particular disease; the average frequency of death; death rate.

Motor behavior: An umbrella term for all human movement that includes motor control, motor development and motor learning.

Motor circuit: Nerves or neurons that carry impulses that cause muscles to contract.

Myelin: A whitish insulating sheath around many nerve fibers, increasing the speed at which impulses are conducted.

National Institute of Mental Health (NIMH): The mission of NIMH, the largest scientific organization in the world, is to transform the understanding and treatment of mental illnesses



through basic and clinical research, paving the way for prevention, recovery, and cure; to promote discovery in the brain and behavioral sciences to fuel research on the causes of mental disorders; to chart mental illness trajectories to determine when, where, and how to intervene; to develop new and better interventions that incorporate the diverse needs and circumstances of people with mental illnesses, and to strengthen the public health impact of NIMH-supported research.

**Neural growth:** The processes that generate, shape, and reshape the nervous system, from the earliest stages of embryogenesis to the final years of life. The study of neural development aims to describe the cellular basis of brain development and to address the underlying mechanisms.

**Neurocircuit/neurocircuitry:** Ensembles or organizations of neurons that process specific kinds of information; although the arrangement of neural circuits varies greatly according to the intended function, all circuits have synaptic connections.

**Neuroimaging:** The process of producing images of the structure or activity of the brain or other part of the nervous system with techniques such as Magnetic Resonance Imaging (MRI) or computerized tomography.

**Neurological models:** Experimental systems that recreate aspects of human neurological development, function, or disease using cells from patients; these models allow the study of neuronal activity and dysfunction.

**Neuron firing:** When an impulse is sent out from a cell body, the neuron fires and sends an electrical signal down the axon (A nerve fiber that transmits electrical impulses between neurons. The axon has several nerve endings in order to connect to several neurons simultaneously. Nerves are composed of axons). The electric signal travels down the axon until it reaches the synapse, where it then causes the release of neurotransmitters.

**Neurons:** A specialized cell transmitting nerve impulses; a nerve cell.

**Neuroscientist:** A scientist that works with the anatomy, physiology, biochemistry, or molecular biology of nerves and nervous tissue in relation to the structure or function of the nervous system and brain.

**Neurosurgical technology:** Technology used in surgery targeting the prevention, diagnosis, treatment, and rehabilitation of disorders which affect any portion of the nervous system including the brain, spinal cord, peripheral nerves, and extra-cranial cerebrovascular system.



**Optogenetics:** Use of light-responsive proteins to control the biological processes within targeted cells that allow for the identification and manipulation of brain circuits disturbed in neurological and psychiatric illnesses, and allowing them to be manipulated.

**Organ systems:** A group of organs that work together to perform one or more functions.

**Parkinson's disease:** A progressive disorder of the nervous system that affects movement and develops gradually, sometimes starting with a barely noticeable tremor in just one hand. Although a tremor may be the most well-known sign of Parkinson's disease, the disorder also commonly causes stiffness or slowing of movement.

**Pathological:** Involving, caused by, or of the nature of a physical or mental disease.

**PET Scan (Positron Emission Tomography):** An imaging test that helps reveal how tissues and organs are functioning. A PET scan uses a radioactive drug (tracer) to show this activity. The tracer may be injected, swallowed, or inhaled, depending on which organ or tissue is being studied by the PET scan.

**Plasticity:** Also referred to as neuroplasticity; a term that refers to the brain's ability to change and adapt (sometimes referred to as rewiring) as a result of experience. Through the lifespan, the brain continues to create new neural pathways and alter existing ones in order to adapt to new experiences, learn new information, and create new memories.

**Post-traumatic stress disorder (PTSD):** A disorder stemming from experiencing or witnessing an event that involved or held the threat of death, violence, or serious injury to the individual or to other people. The experience or repeated exposures result in one or more symptoms or behaviors resulting in significant distress or impairment in the individual's social interactions, capacity to work, or other areas of functioning. It is not the physiological result of another medical condition, medication, drugs, or alcohol.

**Prefrontal cortex:** Located in the front of the brain just behind the forehead, it is the center of abstract thinking, thought analysis, and behavior regulation. The prefrontal cortex is known not only to be involved in emotional responses, but also to have numerous connections with other parts of the brain that are important in mood regulation.

**Pressured speech:** Use of rapid and frenzied speech, as if motivated by urgency and not apparent to the listener; pressured speech can be difficult to interrupt, too fast to comprehend, or too tangential for the listener to comprehend.

**Psychiatric illnesses:** Also referred to as mental illness; a wide range of mental health conditions and disorders that affect mood, thought, and behavior. Examples of mental illness include depression, bipolar disorder, anxiety disorders, schizophrenia, eating disorders, and addictive behaviors. Although not uncommon to have mental health concerns over the lifespan, a mental health concern becomes a mental illness when ongoing signs and symptoms cause frequent and sustained stress, and affect the ability of the individual to function

**Psychiatrist:** A psychiatrist is a physician who specializes in the diagnosis, treatment, and prevention of mental disorders and emotional problems through the use of medication and psychotherapy.

**Psychiatry:** The branch of medicine concerned with the diagnosis and treatment of mental illness.

**Psychologist:** A professional specializing in diagnosing and treating disorders of the brain, emotional disturbance, and behavioral problems. Psychologists have graduate degrees, but are not physicians.

**Psychosis:** A mental disorder characterized by a disconnection from reality; symptoms can include seeing, hearing, smelling, feeling, or tasting things that are not actually present; may also include paranoia and delusional thoughts.

**Psychotic:** Behavior denoting psychosis; a person experiencing psychosis.

**Quality of care:** The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.

**Racing thoughts:** Rapid thought patterns that occur in manic, hypomanic, or mixed episodes; racing thoughts are characterized by a variety of ideas and rapidly changing subject matter and can cause distraction and insomnia. Pressured speech is common in the expression of racing thoughts.

**Recovery:** A return to a normal state of health, mind, or strength or a process of change through which individuals improve their health and wellness, live a self-directed life, and strive to reach their full potential (Substance Abuse and Mental Health Services Administration (SAMHSA)).

**Regulating extremes of mood:** Techniques or actions intended to modulate poorly regulated emotional responses that may be exhibited by individuals with psychiatric disorders and that can lead to behavioral problems or interfere with social interactions and relationships.

**Remission:** A lessening or absence of the seriousness or intensity of disease or pain; a temporary recovery.

**Resilience:** The capacity to recovery quickly from difficulties; toughness or fortitude; grit.

**Reward seeking behavior:** The tendency to respond markedly to signals of reward, particularly to verbal signals of social approval, social support, sexual behavior, substance abuse, or sentiment. Higher levels of reward dependence levels are typically observed in conjunction with several personality and addictive disorders.

**Re-wiring:** See plasticity.

**Risk taking:** Actions and behaviors that put an individual at unnecessary risk and that are out of character. These behaviors are common in patients with serious mental illness and have repercussions such as sexual violence and sexually transmitted disease, substance abuse and addiction, and excessive spending or debt.

**Robotics:** The branch of technology that deals with the design, construction, operation, and application of robots or machines capable of carrying out automatically a complex series of actions.

**Schizophrenia:** A severe brain disorder in which people interpret reality abnormally. Schizophrenia may result in some combination of hallucinations, delusions, and extremely disordered thinking and behavior; a disruption in the usual balance of emotions and thinking.

**Schizophrenic:** An individual living with schizophrenia.

**Self-destructive:** Any deliberate or intentional behavior that has clear, definitely or probably negative effect on the self; deliberately and intentionally harming the self. Such behaviors include but are not limited to suicide, self-mutilation, eating disorders, and substance abuse.

**Self-medicated:** When an individual chooses to take prescription medication, alcohol, or other drugs without a physician's, sometimes to relieve symptoms of a mental illness or other conditions; to take addictive or habituating drugs to relieve stress or other conditions.

**Shock treatment:** Another term for electroconvulsive therapy (ECT).

**Sleep pattern:** The recurring progression of different levels or stages of sleep repeated during the course of a period of sleep.

**Special K:** See Ketamine.



**Stabilize mood:** The effect or result of actions to suppress disruptive swings between mania and depression. To stabilize disruptive swings, mood-stabilizing drugs are often prescribed; for bipolar disorder these drugs often include Lithium, antipsychotics, and anticonvulsants.

**Stem cells:** A cell that has the ability to divide for indefinite periods and that has the potential to develop into mature cells with specialized functions, such as heart cells, skin cells, or nerve cells.

**Stigma:** A mark of disgrace, shame, or infamy.

**Stimulate:** To rouse to action; to excite (an organ) to increased activity, to quicken the action or function.

**Suicide:** The act or an instance of taking one's own life, voluntarily and intentionally.

**Support group:** A group of people with common experiences or concerns who provide each other with encouragement, comfort, and advice.

**Surgeon:** A medical doctor whose practice employs surgical operations in the treatment of disease or injury. Surgery may involve cutting, suturing, or altering body tissues and organs.

**Synapse:** The junction or gap between two nerve cells across which impulses pass from one cell to another through diffusion of a neurotransmitter.

**Syndrome:** A group of symptoms that consistently occur together; a condition characterized by a set of associated symptoms.

**Talk therapy:** An alternate name for the various forms of psychotherapy that emphasize the importance of the client or patient speaking to the therapist as the main means of expressing and resolving issues.

**Therapy:** The medical treatment of a disease or disorder; curative medical, psychiatric, or psychological treatment administered by a physician or therapist.

**Transcranial Magnetic Stimulation (TMS):** A noninvasive procedure used to stimulate small regions of the brain. During a TMS procedure, a magnetic field generator, or "coil" is placed near the head of the person receiving the treatment. The electromagnet creates electric currents that stimulate nerve cells in the region of the brain involved in mood control and depression.

**Tremor:** Unintentional trembling or shaking movements in one or more parts of the body

Vegetative depression: Vegetative functions are those bodily processes most directly concerned with maintenance of life including but not limited to eating, sleeping, menstruation, bowel function, bladder activity, and sexual performance. Disturbance or depression of these functions can result from mood disorders, and are part of the diagnostic criteria for depression and other conditions.

Vitamin K: See Ketamine.

White matter: Bundles of myelinated nerve cell processes (or axons), which connect various grey matter areas (the locations of nerve cell bodies) of the brain to each other, and carry nerve impulses between neurons. Myelin acts as an insulator, increasing the speed of transmission of all nerve signals.

White matter pathways: A neural pathway connects one part of the nervous system with another and usually consists of bundles of elongated, myelin-insulated neurons, known collectively as white matter.