

HIGH-YIELD PRINCIPLES IN

Psychiatry

“Words of comfort, skillfully administered, are the oldest therapy known to man.”

—Louis Nizer

“Psychiatry at its best is what all medicine needs more of—humanity, art, listening, and sympathy.”

—Susannah Cahalan

“It’s time to tell everyone who’s dealing with a mental health issue that they’re not alone, and that getting support and treatment isn’t a sign of weakness, it’s a sign of strength.”

—Michelle Obama

“I have schizophrenia. I am not schizophrenia. I am not my mental illness. My illness is a part of me.”

—Jonathan Harnisch

This chapter encompasses overlapping areas in psychiatry, psychology, sociology, and psychopharmacology. High-yield topics include schizophrenia, mood disorders, eating disorders, personality disorders, somatic symptom disorders, substance use disorders, and antipsychotics. Know the DSM-5 criteria for diagnosing common psychiatric disorders. Some questions may focus on the duration of symptoms to identify the underlying disorder.

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► PSYCHIATRY—PSYCHOLOGY

Classical conditioning	Learning in which a natural response (salivation) is elicited by a conditioned, or learned, stimulus (bell) that previously was presented in conjunction with an unconditioned stimulus (food).	Usually elicits involuntary responses. Pavlov's classical experiments with dogs—ringing the bell provoked salivation.
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Operant conditioning	Learning in which a particular action is elicited because it produces a punishment or reward. Usually elicits voluntary responses.
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Reinforcement	Target behavior (response) is followed by desired reward (positive reinforcement) or removal of aversive stimulus (negative reinforcement).	Skinner operant conditioning quadrants: <table><tr><td></td><th>Increase behavior</th><th>Decrease behavior</th></tr><tr><th>Add a stimulus</th><td>Positive reinforcement</td><td>Positive punishment</td></tr><tr><th>Remove a stimulus</th><td>Negative reinforcement</td><td>Negative punishment</td></tr></table>		Increase behavior	Decrease behavior	Add a stimulus	Positive reinforcement	Positive punishment	Remove a stimulus	Negative reinforcement	Negative punishment
	Increase behavior		Decrease behavior								
Add a stimulus	Positive reinforcement		Positive punishment								
Remove a stimulus	Negative reinforcement	Negative punishment									
Punishment	Repeated application of aversive stimulus (positive punishment) or removal of desired reward (negative punishment) to extinguish unwanted behavior.										
Extinction	Discontinuation of reinforcement (positive or negative) eventually eliminates behavior. Can occur in operant or classical conditioning.										

Transference and countertransference

Transference	Patient projects feelings about formative or other important persons onto physician (eg, psychiatrist is seen as parent).
Countertransference	Physician projects feelings about formative or other important persons onto patient (eg, patient reminds physician of younger sibling).

Ego defenses	Thoughts and behaviors (voluntary or involuntary) used to resolve conflict and prevent undesirable feelings (eg, anxiety, depression).
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IMMATURE DEFENSES	DESCRIPTION	EXAMPLE
Acting out	Subconsciously coping with stressors or emotional conflict using actions rather than reflections or feelings.	A patient skips therapy appointments after deep discomfort from dealing with his past.
Denial	Avoiding the awareness of some painful reality.	A patient with cancer plans a full-time work schedule despite being warned of significant fatigue during chemotherapy.
Displacement	Redirection of emotions or impulses to a neutral person or object (vs projection).	After being reprimanded by her principal, a frustrated teacher returns home and criticizes her wife's cooking instead of confronting the principal directly.
Dissociation	Temporary, drastic change in personality, memory, consciousness, or motor behavior to avoid emotional stress. Patient has incomplete or no memory of traumatic event.	A survivor of sexual abuse sees the abuser and suddenly becomes numb and detached.

Ego defenses (continued)

IMMATURE DEFENSES	DESCRIPTION	EXAMPLE
Fixation	Partially remaining at a more childish level of development (vs regression).	A college student continues to suck her thumb when studying for stressful exams.
Idealization	Expressing extremely positive thoughts of self and others while ignoring negative thoughts.	A patient boasts about his physician and his accomplishments while ignoring any flaws.
Identification	Largely unconscious assumption of the characteristics, qualities, or traits of another person or group.	A resident starts putting her stethoscope in her pocket like her favorite attending, instead of wearing it around her neck like before.
Intellectualization	Using facts and logic to emotionally distance oneself from a stressful situation.	A patient diagnosed with cancer discusses the pathophysiology of the disease.
Isolation (of affect)	Separating feelings from ideas and events.	Describing murder in graphic detail with no emotional response.
Passive aggression	Demonstrating hostile feelings in a nonconfrontational manner; showing indirect opposition.	A disgruntled employee is repeatedly late to work, but won't admit it is a way to get back at the manager.
Projection	Attributing an unacceptable internal impulse to an external source (vs displacement).	A man who wants to cheat on his wife accuses his wife of being unfaithful.
Rationalization	Asserting plausible explanations for events that actually occurred for other reasons, usually to avoid self-blame.	An employee who was recently fired claims that the job was not important anyway.
Reaction formation	Replacing a warded-off idea or feeling with an emphasis on its opposite (vs sublimation).	A stepfather treats a child he resents with excessive nurturing and overprotection.
Regression	Involuntarily turning back the maturational clock to behaviors previously demonstrated under stress (vs fixation).	A previously toilet-trained child begins bedwetting again following the birth of a sibling.
Repression	Involuntarily withholding an idea or feeling from conscious awareness (vs suppression).	A 20-year-old does not remember going to counseling during his parents' divorce 10 years earlier.
Splitting	Believing that people are either all good or all bad at different times due to intolerance of ambiguity. Common in borderline personality disorder. Borders split countries.	A patient says that all the nurses are cold and insensitive, but the physicians are warm and friendly.
MATURE DEFENSES		
Sublimation	Replacing an unacceptable wish with a course of action that is similar to the wish but socially acceptable (vs reaction formation).	A teenager's aggression toward her parents because of their high expectations is channeled into excelling in sports.
Altruism	Alleviating negative feelings via unsolicited generosity, which provides gratification (vs reaction formation).	A mafia boss makes a large donation to charity.
Suppression	Intentionally withholding an idea or feeling from conscious awareness (vs repression); temporary.	An athlete focuses on other tasks to prevent worrying about an important upcoming match.
Humor	Lightheartedly expressing uncomfortable feelings to shift the internal focus away from the distress.	A nervous medical student jokes about the boards.
Mature adults wear a SASH .		

Grief

Natural feeling that occurs in response to the death of a loved one. Symptoms and trajectory vary for each individual, are specific to each loss, and do not follow a fixed series of stages. In addition to guilt, sadness, and yearning, patients may experience somatic symptoms, hallucinations of the deceased, and/or transient episodes of wishing they had died with or instead of their loved one.

Typical acute grief is time limited (adaptations within 6 months) and is not a disorder.

Prolonged grief disorder—diagnosed if grief remains intense, persistent, and prolonged (at least 6–12 months), significantly impair functioning, is inconsistent with patient’s cultural or religious norms, and do not meet criteria for another disorder (eg, major depressive disorder [MDD]).

Normal infant and child development

Milestone dates are ranges that have been approximated and vary by source. Children not meeting milestones may need assessment for potential developmental delay.

AGE	MOTOR	SOCIAL	VERBAL/COGNITIVE
Infant	Parents	Start	Observing,
0–12 mo	P rimitive reflexes disappear— M oro, r ooting, p almar, B abinski (Mr. Peanut Butter) P osture—lifts head up prone (by 1 mo), rolls and sits (by 6 mo), crawls (by 8 mo), stands (by 10 mo), walks (by 12–18 mo) P icks—passes toys hand to hand (by 6–9 mo), P incer grasp (by 10 mo) P oints to objects (by 12 mo)	S ocial smile (by 2 mo) S tranger anxiety (by 6 mo) S eparation anxiety (by 9 mo)	O rients—first to voice (by 4 mo), then to name and gestures (by 9 mo) O bject permanence (by 9 mo) O ratory—says “mama” and “dada” (by 10 mo)
Toddler	Child	Rearing	Working,
12–36 mo	C ruises, takes first steps (by 12 mo) C limbs stairs (by 18 mo) C ubes stacked (number = age (yr) × 3) C utlery—feeds self with fork and spoon (by 20 mo) K icks ball (by 24 mo)	R ecreation—parallel play (by 24–36 mo) R approchement—moves away from and returns to parent (by 24 mo) R ealization—core gender identity formed (by 36 mo)	W ords—uses 50–200 words (by 2 yr), uses 300+ words (by 3 yr)
Preschool	Don’t	Forget, they’re still	Learning!
3–5 yr	D rive—tricycle (3 wheels at 3 yr) D rawings—copies line or circle, stick figure (by 4 yr) D exterity—hops on one f oot by 4 yr (“ 4 on one f oot”), uses buttons or zippers, grooms self (by 5 yr)	F reedom—comfortably spends part of day away from parent (by 3 yr) F riends—cooperative play, has imaginary friends (by 4 yr)	L anguage—understands 1000 (3 zeros) words (by 3 yr), uses complete sentences and prepositions (by 4 yr) L egends—can tell detailed stories (by 4 yr)

▶ PSYCHIATRY—PATHOLOGY

Child abuse	All cases of suspected child abuse must be reported to local child protective services.	
	SIGNS	EPIDEMIOLOGY
Neglect	Poor hygiene, malnutrition, withdrawn affect, impaired social/emotional development, failure to thrive due to failure to provide a child with adequate food, shelter, supervision, education, and/or affection.	Most common form of child maltreatment.
Physical abuse	Nonaccidental trauma (eg, fractures, bruises, burns). Injuries often in different stages of healing or in patterns resembling possible implements of injury. Includes abusive head trauma (shaken baby syndrome), characterized by subdural hematomas or retinal hemorrhages. Caregivers may delay seeking medical attention for the child or provide explanations inconsistent with the child's developmental stage or pattern of injury.	40% of deaths related to child abuse or neglect occur in children < 1 year old.
Sexual abuse	STIs, UTIs, and genital, anal, or oral trauma. Most often, there are no physical signs; sexual abuse should not be excluded from a differential diagnosis in the absence of physical trauma. Children often exhibit sexual knowledge or behavior incongruent with their age.	Peak incidence 9–12 years old.
Emotional abuse	Babies or young children may lack a bond with the caregiver but are overly affectionate with less familiar adults. They may be aggressive towards children and animals or unusually anxious. Older children are often emotionally labile and prone to angry outbursts. They may distance themselves from caregivers and other children. They can experience vague somatic symptoms for which a medical cause cannot be found.	~ 80% of young adult victims of child emotional abuse meet the criteria for ≥ 1 psychiatric illness by age 21.
Vulnerable child syndrome	Parents misperceive the child as especially susceptible to illness or injury (vs factitious disorder imposed on another). Usually follows a child's serious illness or life-threatening event. Can result in missed school or overuse of medical services (think kid wrapped in bubble wrap).	

Childhood and early-onset disorders

Attention-deficit hyperactivity disorder	Onset before age 12, but diagnosis can only be established after age 4. Characterized by hyperactivity, impulsivity, and/or inattention in ≥ 2 settings (eg, school, home, places of worship). Normal intelligence, but commonly coexists with difficulties in school. Often persists into adulthood. Commonly coexists with other behavioral, cognitive, or developmental disorders. Treatment: stimulants (eg, methylphenidate) +/- behavioral therapy; alternatives include atomoxetine and α_2 -agonists (eg, clonidine, guanfacine).
Autism spectrum disorder	Onset in early childhood. Social and communication deficits, repetitive/ritualized behaviors, restricted interests. May be accompanied by intellectual disability and/or above average abilities in specific skills (eg, music). More common in males. Associated with \uparrow head and/or brain size.
Conduct disorder	Repetitive, pervasive behavior violating societal norms or the basic rights of others (eg, aggression toward people and animals, destruction of property, theft). After age 18, often reclassified as antisocial personality disorder. C onduct = c hildren, a ntisocial = a dults. Treatment: psychotherapy (eg, cognitive behavioral therapy [CBT]).
Disruptive mood dysregulation disorder	Onset before age 10 and diagnosed after age 6. Severe, recurrent temper outbursts out of proportion to situation. Child is constantly angry and irritable between outbursts. Treatment: CBT, stimulants, antipsychotics.
Intellectual disability	Global cognitive deficits (vs specific learning disorder) that affect reasoning, memory, abstract thinking, judgment, language, learning. Adaptive functioning is impaired, leading to major difficulties with education, employment, communication, socialization, independence. Treatment: psychotherapy, occupational therapy, special education.
Intermittent explosive disorder	Onset after age 6. Recurrent verbal or physical outbursts representing a failure to control aggressive impulses. Outbursts last < 30 minutes and are out of proportion to provocation and may lead to legal, financial, or social consequences. Episodes are not premeditated and may provide an immediate sense of relief, followed by remorse. Treatment: psychotherapy, SSRIs.
Oppositional defiant disorder	Pattern of anger and irritability with argumentative, vindictive, and defiant behavior toward authority figures lasting ≥ 6 months. Treatment: psychotherapy (eg, CBT).
Selective mutism	Onset before age 5. Anxiety disorder lasting ≥ 1 month involving refraining from speech in certain situations despite speaking in other, usually more comfortable situations. Development (eg, speech and language) not typically impaired. Interferes with social, academic, and occupational tasks. Commonly coexists with social anxiety disorder. Treatment: behavioral, family, and play therapy; SSRIs.
Separation anxiety disorder	Overwhelming fear of separation from home or attachment figure lasting ≥ 4 weeks. Can be normal behavior up to age 3–4. May lead to factitious physical complaints to avoid school. Treatment: CBT, play therapy, family therapy.
Specific learning disorder	Onset during school-age years. Inability to acquire or use information from a specific subject (eg, math, reading, writing) near age-expected proficiency for ≥ 6 months despite focused intervention. General functioning and intelligence are normal (vs intellectual disability). Treatment: academic support, counseling, extracurricular activities.
Tourette syndrome	Onset before age 18. Sudden, recurrent, nonrhythmic, stereotyped motor (eg, grimacing, shrugging) and vocal (eg, grunting, throat clearing) tics that persist for > 1 year. Coprolalia (involuntary obscene speech) found in some patients. Associated with OCD and ADHD. Treatment: psychoeducation, behavioral therapy. For intractable and distressing tics: tetrabenazine, antipsychotics, α_2 -agonists.

Orientation

Patients' ability to know the date and time, where they are, and who they are (order of loss: time → place → person). Common causes of loss of orientation: alcohol, drugs, fluid/electrolyte imbalance, head trauma, hypoglycemia, infection, nutritional deficiencies, hypoxia.

Amnesias

Retrograde amnesia	Inability to remember things that occurred before a CNS insult.
Anterograde amnesia	Inability to remember things that occurred after a CNS insult (↓ acquisition of new memory).
Korsakoff syndrome	Amnesia (anterograde > retrograde) and disorientation caused by vitamin B ₁ deficiency. Associated with disruption and destruction of the limbic system, especially mammillary bodies and anterior thalamus. Seen in chronic alcohol use as a late neuropsychiatric manifestation of Wernicke encephalopathy. Confabulations are characteristic.

Dissociative disorders

Depersonalization/derealization disorder	Persistent feelings of detachment or estrangement from one's own body, thoughts, perceptions, and actions (depersonalization) or one's environment (derealization). Intact reality testing (vs psychosis).
Dissociative amnesia	Inability to recall important personal information, usually following severe trauma or stress. May be accompanied by dissociative fugue (abrupt, unexpected travelling away from home).
Dissociative identity disorder	Formerly called multiple personality disorder. Presence of ≥ 2 distinct identities or personality states, typically with distinct memories and patterns of behavior. More common in females. Associated with history of sexual abuse, PTSD, depression, substance use, borderline personality disorder, somatic symptom disorders.

Delirium

“Waxing and waning” level of consciousness with acute onset, ↓ attention span, ↓ level of arousal. Characterized by disorganized thinking, hallucinations (often visual), misperceptions (eg, illusions), disturbance in sleep-wake cycle, cognitive dysfunction, agitation. Reversible.

Usually 2° to other identifiable illness (eg, CNS disease, infection, trauma, substance use/withdrawal, metabolic/electrolyte disturbances, hemorrhage, urinary/fecal retention), or medications (eg, anticholinergics), especially in older adults.

Most common presentation of altered mental status in inpatient setting, especially in the ICU or during prolonged hospital stays.

Delirium = changes in sensorium.

EEG may show diffuse background rhythm slowing.

Treatment: identification and management of underlying condition. Orientation protocols (eg, keeping a clock or calendar nearby), ↓ sleep disturbances, and ↑ cognitive stimulation to manage symptoms.

Antipsychotics (eg, haloperidol) as needed. Avoid unnecessary restraints and drugs that may worsen delirium (eg, anticholinergics, benzodiazepines, opioids).

Psychosis

Distorted perception of reality characterized by delusions, hallucinations, and/or disorganized thought/speech. Can occur in patients with psychiatric illness or another medical condition, or secondary to substance or medication use.

Delusions

False, fixed, idiosyncratic beliefs that persist despite evidence to the contrary and are not typical of a patient's culture or religion (eg, a patient who believes that others are reading his thoughts). Types include erotomanic, grandiose, jealous, persecutory, somatic, mixed, and unspecified.

Disorganized thought

Speech may be incoherent ("word salad"), tangential, or derailed ("loose associations").

Hallucinations

Perceptions in the absence of external stimuli (eg, seeing a light that is not actually present).

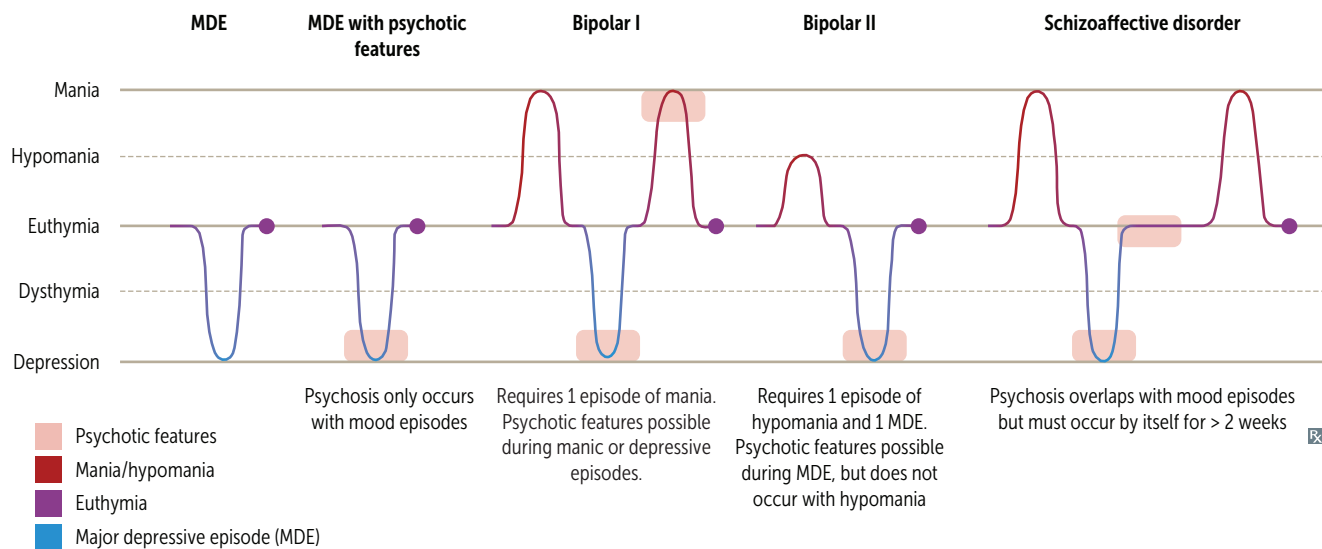
Types include:

- Auditory—more commonly due to psychiatric illness (eg, schizophrenia) than neurologic disease.
- Visual—more commonly due to neurologic disease (eg, dementia), delirium, or drug intoxication than psychiatric illness.
- Tactile—common in alcohol withdrawal and stimulant use (eg, "cocaine crawlies," a type of delusional parasitosis).
- Olfactory—often occur as an aura of temporal lobe epilepsy (eg, burning rubber) and in brain tumors.
- Gustatory—rare, but seen in epilepsy.
- Hypnagogic—occurs while going to sleep. Sometimes seen in narcolepsy.
- Hypnopompic—occurs while waking from sleep ("get **pomped** up in the morning"). Sometimes seen in narcolepsy.

Contrast with illusions, which are misperceptions of real external stimuli (eg, mistaking a shadow for a black cat).

Mood disorder

Characterized by an abnormal range of moods or internal emotional states and loss of control over them. Severity of moods causes distress and impairment in social and occupational functioning. Includes major depressive, bipolar, dysthymic, and cyclothymic disorders. Episodic superimposed psychotic features (delusions, hallucinations, disorganized speech/behavior) may be present at any time during mood episodes (other than hypomania).



Schizophrenia spectrum disorders

Schizophrenia	<p>Chronic illness causing profound functional impairment. Symptom categories include:</p> <ul style="list-style-type: none"> ▪ Positive—excessive or distorted functioning (eg, hallucinations, delusions, unusual thought processes, disorganized speech, bizarre behavior) ▪ Negative—diminished functioning (eg, blunted affect, apathy, anhedonia, alogia, asocial behavior) ▪ Cognitive—reduced ability to understand or make plans, diminished working memory, inattention <p>Diagnosis requires ≥ 2 of the following active symptoms, including ≥ 1 from symptoms #1–3:</p> <ol style="list-style-type: none"> 1. Delusions 2. Hallucinations, often auditory 3. Disorganized speech 4. Disorganized or catatonic behavior 5. Negative symptoms <p>Symptom onset ≥ 6 months prior to diagnosis; requires ≥ 1 month of active symptoms over the past 6 months.</p> <p>Brief psychotic disorder—≥ 1 positive symptom(s) lasting between 1 day and 1 month, usually stress-related.</p> <p>Schizophreniform disorder—≥ 2 symptoms lasting 1–6 months.</p>	<p>Associated with altered dopaminergic activity, \uparrow serotonergic activity, and \downarrow dendritic branching. Ventriculomegaly on brain imaging. Lifetime prevalence—1.5% (males $>$ females). Presents earlier in males (late teens to early 20s) than in females (late 20s to early 30s). \uparrow suicide risk.</p> <p>Heavy cannabis use in adolescence is associated with \uparrow incidence and worsened course of psychotic, mood, and anxiety disorders.</p> <p>Treatment: atypical antipsychotics (eg, risperidone) are first line.</p> <p>Negative symptoms often persist after treatment, despite resolution of positive symptoms.</p>
Schizoaffective disorder	Shares symptoms with both schizophrenia and mood disorders (MDD or bipolar disorder). To differentiate from a mood disorder with psychotic features, patient must have ≥ 2 weeks of psychotic symptoms without a manic or depressive episode.	
Delusional disorder	≥ 1 delusion(s) lasting > 1 month, but without a mood disorder or other psychotic symptoms. Daily functioning, including socialization, may be impacted by the pathological, fixed belief but is otherwise unaffected. Can be shared by individuals in close relationships (folie à deux).	
Schizotypal personality disorder	Cluster A personality disorder that also falls on the schizophrenia spectrum. May include brief psychotic episodes (eg, delusions) that are less frequent and severe than in schizophrenia.	
Manic episode	<p>Distinct period of abnormally and persistently elevated, expansive, or irritable mood and \uparrow activity or energy. Diagnosis requires marked functional impairment with ≥ 3 of the following for ≥ 1 week, or any duration if hospitalization is required (people with mania DIG FAST):</p> <ul style="list-style-type: none"> ▪ Distractibility ▪ Impulsivity/Indiscretion—seeks pleasure without regard to consequences (hedonistic) ▪ Grandiosity—inflated self-esteem ▪ Flight of ideas—racing thoughts ▪ \uparrow goal-directed Activity/psychomotor Agitation ▪ \downarrow need for Sleep ▪ Talkativeness or pressured speech 	

Hypomanic episode	Similar to a manic episode except mood disturbance is not severe enough to cause marked impairment in social and/or occupational functioning or to necessitate hospitalization. Abnormally ↑ activity or energy usually present. No psychotic features. Lasts ≥ 4 consecutive days.
Bipolar disorder	<p>Bipolar I (requires 1 type of episode)—≥ 1 manic episode +/- a hypomanic or depressive episode (may be separated by any length of time).</p> <p>Bipolar II (requires 2 types of episodes)—a hypomanic and a depressive episode (no history of manic episodes).</p> <p>Patient's mood and functioning usually normalize between episodes. Use of antidepressants can destabilize mood. High suicide risk. Treatment: atypical antipsychotics, mood stabilizers (eg, lithium, lamotrigine, valproate, carbamazepine). A little less variable character.</p> <p>Cyclothymic disorder—milder form of bipolar disorder fluctuating between mild depressive and hypomanic symptoms. Must last ≥ 2 years with symptoms present at least half of the time, with any remission lasting ≤ 2 months.</p>
Major depressive disorder	<p>Recurrent episodes lasting ≥ 2 weeks characterized by ≥ 5 of 9 diagnostic symptoms including depressed mood or anhedonia (or irritability in children). SIG: E CAPS:</p> <ul style="list-style-type: none"> ▪ Sleep disturbances ▪ ↓ Interest in pleasurable activities (anhedonia) ▪ Guilt or feelings of worthlessness ▪ ↓ Energy ▪ ↓ Concentration ▪ Appetite/weight changes ▪ Psychomotor retardation or agitation ▪ Suicidal ideation <p>Screen for previous manic or hypomanic episodes to rule out bipolar disorder.</p> <p>Treatment: CBT and SSRIs are first line; alternatives include SNRIs, mirtazapine, bupropion, electroconvulsive therapy (ECT), ketamine.</p> <p>Responses to a significant loss (eg, bereavement, natural disaster, disability) may resemble a depressive episode. Diagnosis of MDD is made if criteria are met.</p>
MDD with psychotic features	MDD + hallucinations or delusions. Psychotic features are typically mood congruent (eg, depressive themes of inadequacy, guilt, punishment, nihilism, disease, or death) and occur only in the context of major depressive episode (vs schizoaffective disorder). Treatment: antidepressant with atypical antipsychotic, ECT.
Persistent depressive disorder	Also called dysthymia. Often milder than MDD; ≥ 2 depressive symptoms lasting ≥ 2 years (≥ 1 year in children), with any remission lasting ≤ 2 months.
MDD with seasonal pattern	Formerly called seasonal affective disorder. Major depressive episodes occurring only during a particular season (usually winter) in ≥ 2 consecutive years and in most years across a lifetime. Atypical symptoms common. Treatment: standard MDD therapies + light therapy.
Depression with atypical features	Characterized by mood reactivity (transient improvement in response to a positive event), hypersomnia, hyperphagia, leaden paralysis (heavy feeling in arms and legs), long-standing interpersonal rejection sensitivity. Most common subtype of depression. Treatment: CBT and SSRIs are first line. MAO inhibitors are effective but not first line because of their risk profile.

Peripartum mood disturbances

Onset during pregnancy or within 4 weeks of delivery. ↑ risk with history of mood disorders.

Postpartum blues

50–85% incidence rate. Characterized by depressed affect, tearfulness, and fatigue starting 2–3 days after delivery. Usually resolves within 2 weeks. Treatment: supportive. Follow up to assess for possible MDD with peripartum onset.

MDD with peripartum onset

10–15% incidence rate. Formerly called postpartum depression. Meets MDD criteria with onset either during pregnancy or within 4 weeks after delivery. Treatment: CBT and SSRIs are first line.

Postpartum psychosis

0.1–0.2% incidence rate. Characterized by mood-congruent delusions, hallucinations, and thoughts of harming the baby or self. Risk factors include first pregnancy, family history, bipolar disorder, psychotic disorder, recent medication change. Treatment: hospitalization and initiation of atypical antipsychotic; if insufficient, ECT may be used.

Electroconvulsive therapy

Rapid-acting method to treat refractory depression, depression with psychotic symptoms, catatonia, and acute suicidality. Induces tonic-clonic seizure under anesthesia and neuromuscular blockade. Adverse effects include disorientation, headache, partial anterograde/retrograde amnesia usually resolving in 6 months. No absolute contraindications. Safe in pregnant individuals and older adults.

Risk factors for suicide death

Sex (male)
Age (young adult or older adult)
Depression
Previous attempt (highest risk factor)
Ethanol or drug use
Rational thinking loss (psychosis)
Sickness (medical illness)
Organized plan
No spouse or other social support
Stated future intent

SAD PERSONS are more likely to die from suicide.

Most common method in US is firearms; access to guns ↑ risk of suicide death.

Women try more often; men die more often.

Other risk factors include recent psychiatric hospitalization and family history of suicide death.

Protective factors include effective care for comorbidities; medical, familial, or community connectedness; cultural/religious beliefs encouraging self-preservation; and strong problem-solving skills.

Anxiety disorders

Inappropriate experiences of fear/worry and their physical manifestations incongruent with the magnitude of the stressors. Symptoms are not attributable to another medical condition (eg, psychiatric disorder, hyperthyroidism) or substance use. Includes panic disorder, phobias, generalized anxiety disorder, selective mutism, illness anxiety disorder, OCD, PTSD.

Panic disorder

Recurrent panic attacks involving intense fear and discomfort +/- a known trigger. Attacks typically peak in 10 minutes with ≥ 4 of the following: palpitations, paresthesias, depersonalization or derealization, abdominal distress or nausea, intense fear of dying, intense fear of losing control, lightheadedness, chest pain, chills, choking, sweating, shaking, shortness of breath. Strong genetic component. ↑ risk of suicide.

Diagnosis requires attack followed by ≥ 1 month of ≥ 1 of the following:

- Persistent concern of additional attacks
- Worrying about consequences of attack
- Behavioral change related to attacks

Symptoms are systemic manifestations of fear.

Treatment: CBT, SSRIs, and venlafaxine are first line. Benzodiazepines occasionally used in acute setting.

Phobias

Severe, persistent (≥ 6 months) fear or anxiety due to presence or anticipation of a specific object or situation. Person often recognizes fear is excessive. Treatment: CBT with exposure therapy.

Social anxiety disorder—exaggerated fear of embarrassment in social situations (eg, public speaking, using public restrooms). Treatment: CBT, SSRIs, SNRIs. For performance type (eg, anxiety restricted to public speaking), use β -blockers or benzodiazepines as needed.

Agoraphobia—irrational fear, anxiety, and/or avoidance while facing or anticipating ≥ 2 specific situations (eg, public transportation, open/closed spaces, lines/crowds, being outside of home alone). Symptoms stem from the concern that help or escape may be unavailable. Associated with panic disorder. Treatment: CBT, SSRIs.

Generalized anxiety disorder

Excessive anxiety and worry about different aspects of daily life (eg, work, school, children) for most days of ≥ 6 months. Associated with ≥ 3 of the following for adults (≥ 1 for kids): difficulty Concentrating, Restlessness, Irritability, Muscle tension, fatigue (low Energy), Sleep disturbance (anxiety over CRIMES). Treatment: CBT, SSRIs, SNRIs are first line. Buspirone, TCAs, benzodiazepines are second line.

Obsessive-compulsive disorders



Obsessions (recurring intrusive thoughts or sensations that can cause severe distress), and/or compulsions (repetitive, often time-consuming actions that may relieve distress). Associated with tic disorders. Poor insight into beliefs/actions linked to worse outcomes. Treatment: CBT and SSRIs; clomipramine and venlafaxine are second line.

Body dysmorphic disorder—preoccupation with minor or imagined defects in appearance.

Causes significant emotional distress and repetitive appearance-related behaviors (eg, mirror checking, excessive grooming). Common in eating disorders. Treatment: CBT.

Trichotillomania—compulsively pulling out one's hair. Causes significant distress and persists despite attempts to stop. Presents with areas of thinning hair or baldness on any area of the body, most commonly the scalp **A**. Remaining hair shafts are of different lengths (vs alopecia). Incidence highest in childhood but spans all ages. Treatment: CBT and SSRIs.

Trauma and stress-related disorders

Adjustment disorder

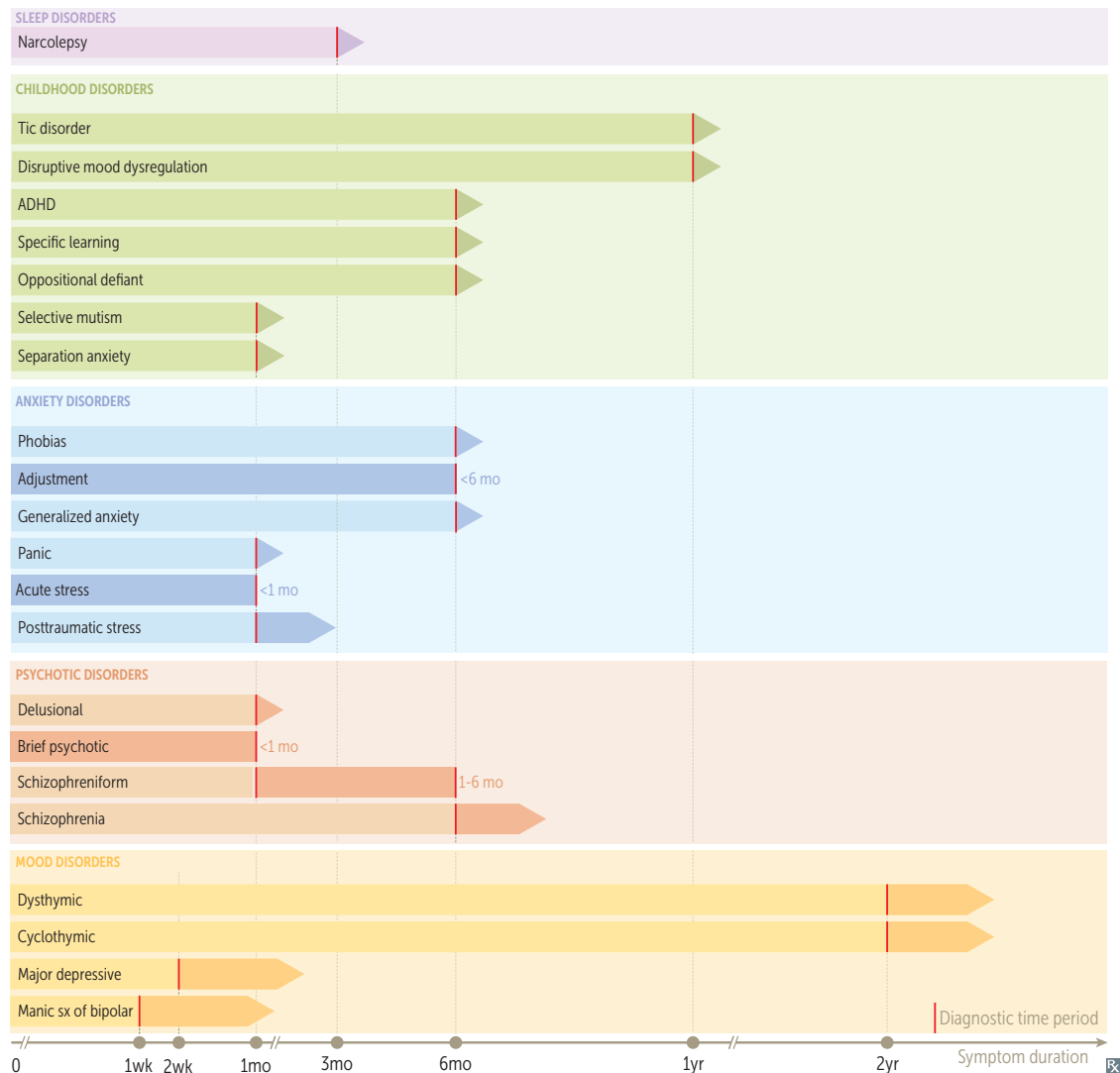
Emotional or behavioral symptoms (eg, anxiety, outbursts) that occur within 3 months of an identifiable psychosocial stressor (eg, divorce, illness) lasting < 6 months once the stressor has ended. Symptoms do not meet criteria for another psychiatric illness. If symptoms persist > 6 months after stressor ends, reevaluate for other explanations (eg, MDD, GAD). Treatment: CBT is first line; antidepressants and anxiolytics may be considered.

Post-traumatic stress disorder

Experiencing, witnessing, or discovering that a loved one has experienced a life-threatening situation (eg, serious injury, sexual assault) → persistent **H**yperarousal, **A**voidance of associated stimuli, intrusive **R**e-experiencing of the event (eg, nightmares, flashbacks), changes in cognition or mood (eg, fear, horror, **D**istress) (having PTSD is **HARD**). Disturbance lasts > 1 month with significant distress or impaired functioning. Treatment: CBT, SSRIs, and venlafaxine are first line. Prazosin can reduce nightmares.

Acute stress disorder—lasts between 3 days and 1 month. Treatment: CBT; pharmacotherapy is usually not indicated.

Diagnostic criteria by symptom duration



Personality disorders

Inflexible, maladaptive, and rigidly pervasive patterns of behavior causing subjective distress and/or impaired functioning; person is usually not aware of problem (egosyntonic). Usually present by early adulthood. Contrast with **personality traits**—nonpathologic enduring patterns of perception and behavior.

Three clusters:

- Cluster A (remember as “weird”)—odd or eccentric; inability to develop meaningful social relationships. No psychosis; genetic association with schizophrenia.
- Cluster B (remember as “wild”)—dramatic, emotional, or erratic; genetic association with mood disorders and substance use.
- Cluster C (remember as “worried”)—anxious or fearful; genetic association with anxiety disorders.

Cluster A

Paranoid Pervasive distrust (**accusatory**), suspiciousness, hypervigilance, and a profoundly cynical view of the world.

Schizoid Prefers social withdrawal and solitary activities (vs avoidant), limited emotional expression, indifferent to others’ opinions (**aloof**).

Schizotypal Eccentric appearance, odd beliefs or magical thinking, interpersonal **awkwardness**. Included on the schizophrenia spectrum. Pronounce “schizo-**type**-al” for **odd-type** thoughts.

Cluster B

Antisocial Disregard for the rights of others with lack of remorse (**bad**). Involves criminality, impulsivity, hostility, and manipulation (sociopath). Males > females. Must be ≥ 18 years old with evidence of conduct disorder onset before age 15. If patient is < 18, diagnosis is conduct disorder.

Borderline Unstable mood and interpersonal relationships, fear of abandonment, impulsivity, self-mutilation, suicidality, sense of emotional emptiness (**borderline**). Females > males. Splitting is a major defense mechanism. Treatment: dialectical behavior therapy.

Histrionic Attention-seeking, dramatic speech and emotional expression, shallow and labile emotions, sexually provocative. May use physical appearance to draw attention (**flamboyant**).

Narcissistic Grandiosity, sense of entitlement; lacks empathy and requires excessive admiration; often demands the “best” and reacts to criticism with rage and/or defensiveness (must be the **best**). Fragile self-esteem. Often envious of others.

Cluster C

Avoidant Hypersensitive to rejection and criticism, socially inhibited, timid (**cowardly**), feelings of inadequacy, desires relationships with others (vs schizoid).

Obsessive-compulsive Preoccupation with order, perfectionism, and control (obsessive-**compulsive**); egosyntonic: behavior consistent with one’s own beliefs and attitudes (vs OCD).

Dependent Excessive need for support (**clingy**), submissive, low self-confidence. Patients often get stuck in abusive relationships.

Malingering	Symptoms are intentional, motivation is intentional. Patient consciously fakes, profoundly exaggerates, or claims to have a disorder in order to attain a specific 2° (external) gain (eg, avoiding work, obtaining compensation). Poor compliance with treatment or follow-up of diagnostic tests. Complaints cease after gain (vs factitious disorder).
Factitious disorders	Symptoms are intentional, motivation is unconscious. Patient consciously creates physical and/or psychological symptoms in order to assume “sick role” and to get medical attention and sympathy (1° [internal] gain).
Factitious disorder imposed on self	Formerly called Munchausen syndrome. Chronic factitious disorder with predominantly physical signs and symptoms. Characterized by a history of multiple hospital admissions and willingness to undergo invasive procedures. More common in females and healthcare workers.
Factitious disorder imposed on another	Formerly called Munchausen syndrome by proxy. Illness in an individual being cared for (most often a child, also seen in disabled or older adults) is directly caused (eg, physically harming a child) or fabricated (eg, lying about a child’s symptoms) by the caregiver. Form of child/elder abuse.
Somatic symptom and related disorders	Symptoms are unconscious, motivation is unconscious. Category of disorders characterized by physical symptoms causing significant distress and impairment. Symptoms not intentionally produced or feigned.
Somatic symptom disorder	≥ 1 bodily complaints (eg, abdominal pain, fatigue) lasting months to years. Associated with excessive, persistent thoughts and anxiety about symptoms. May co-occur with medical illness. Treatment: regular office visits with the same physician with the goals of addressing active symptoms, reassuring the patient, and avoiding unnecessary tests or medications.
Conversion disorder	Also called functional neurologic symptom disorder. Unexplained loss of sensory or motor function (eg, psychogenic nonepileptic seizures, paralysis, blindness, mutism), often following an acute stressor; patient may be aware of but indifferent toward symptoms (“la belle indifférence”); more common in females, adolescents, and young adults.
Illness anxiety disorder	Preoccupation with acquiring or having a serious illness, often despite medical evaluation and reassurance; minimal to no somatic symptoms.

Malingering vs factitious disorder vs somatic symptom disorders

	Malingering	Factitious disorder	Somatic symptom disorders
SYMPTOMS	Intentional	Intentional	Unconscious
MOTIVATION	Intentional	Unconscious	Unconscious

Eating disorders

Most common in young women.

Anorexia nervosa

Intense fear of weight gain, overvaluation of thinness, and body image distortion leading to calorie restriction and severe weight loss resulting in inappropriately low body weight (BMI < 18.5 kg/m² for adults). Physiological disturbances may present as bradycardia, hypotension, hypothermia, hypothyroidism, osteoporosis, lanugo, amenorrhea (low calorie intake → ↓ leptin → ↓ GnRH → ↓ LH, FSH → ↓ estrogen → amenorrhea).

Binge-eating/purging type—recurring purging behaviors (eg, laxative or diuretic abuse, self-induced vomiting) or binge eating over the last 3 months. Associated with hypokalemia.

Restricting type—primary disordered behaviors include dieting, fasting, and/or over-exercising. No recurring purging behaviors or binge eating over the last 3 months.

Refeeding syndrome—often occurs in significantly malnourished patients with sudden ↑ calorie intake → ↑ insulin → electrolyte imbalances (↓ PO₄³⁻, ↓ K⁺, ↓ Mg²⁺) → cardiac complications, rhabdomyolysis, seizures.

Treatment: nutritional rehabilitation, psychotherapy, olanzapine.

Bulimia nervosa

Recurring episodes of binge eating with compensatory purging behaviors at least weekly over the last 3 months. BMI often normal or slightly overweight (vs anorexia). Associated with parotid gland hypertrophy (may see ↑ serum amylase), enamel erosion, Mallory-Weiss syndrome, electrolyte disturbances (eg, ↓ K⁺, ↓ Cl⁻), metabolic alkalosis, dorsal hand calluses from induced vomiting (Russell sign).

Treatment: psychotherapy, nutritional rehabilitation, SSRIs (eg, fluoxetine). Bupropion is contraindicated due to seizure risk.

Binge-eating disorder

Recurring episodes of binge eating without purging behaviors at least weekly over the last 3 months. ↑ diabetes risk. Most common eating disorder in adults.

Treatment: psychotherapy (first line); SSRIs; lisdexamfetamine.

Pica

Recurring episodes of eating non-food substances (eg, ice, dirt, hair, paint chips) over ≥ 1 month that are not culturally or developmentally recognized as normal. May provide temporary emotional relief. Common in children and during pregnancy. Associated with malnutrition, iron deficiency anemia, developmental disabilities, emotional trauma.

Treatment: psychotherapy and nutritional rehabilitation (first line); SSRIs (second line).

Gender dysphoria

Significant incongruence between one's gender identity and one's gender assigned at birth, lasting > 6 months and leading to persistent distress. Individuals experience marked discomfort with their assigned gender, which interferes with social, academic, and other areas of function. Individuals may pursue multiple domains of gender affirmation, including social, legal, and medical.

Transgender—any individual who transiently or persistently experiences incongruence between their gender identity and their gender assigned at birth. Some individuals who are transgender will experience gender dysphoria. Nonconformity to one's assigned gender itself is not a mental disorder.

Sexual dysfunction

Includes sexual desire disorders (hypoactive sexual desire or sexual aversion), sexual arousal disorders (erectile dysfunction), orgasmic disorders (anorgasmia, premature ejaculation), sexual pain disorders (genito-pelvic pain/penetration disorder).

Differential diagnosis includes (**PENIS**):

- **P** Psychological (if nighttime erections still occur)
- **E** ndocrine (eg, diabetes, low testosterone)
- **N** eurogenic (eg, postoperative, spinal cord injury)
- **I** nsufficient blood flow (eg, atherosclerosis)
- **S** ubstances (eg, antihypertensives, antidepressants, ethanol)

Sleep terror disorder

Periods of inconsolable terror with screaming in the middle of the night. Most common in children. Occurs during slow-wave/deep (stage N3) non-REM sleep with no memory of the arousal episode, as opposed to nightmares that occur during **REM** sleep (**re**membering a scary dream). Triggers include emotional stress, fever, and lack of sleep. Usually self limited.

Elimination disorders

Inappropriate urination (enuresis) and/or defecation (encopresis) in individuals who should be continent. Typically diagnosed in childhood or adolescence.

Enuresis—occurs ≥ 2 times/week for ≥ 3 months in individuals ≥ 5 years old, most commonly during sleep (nocturnal enuresis). First-line treatment: behavioral modification (eg, scheduled voids, nighttime fluid restriction) and positive reinforcement. For refractory cases: bedwetting alarm, oral desmopressin (ADH analog; preferred over imipramine due to fewer adverse effects).

Encopresis—occurs ≥ 1 time/month for ≥ 3 months in individuals ≥ 4 years old. Types include with or without constipation and overflow. Treatment: behavioral therapy, toilet training, and laxatives or enemas (for constipation).

Narcolepsy

Excessive daytime sleepiness (despite awakening well-rested) with recurrent episodes of rapid-onset, overwhelming sleepiness ≥ 3 times/week for the last 3 months. Due to \downarrow orexin (hypocretin) production in lateral hypothalamus and dysregulated sleep-wake cycles. Associated with:

- Hypnagogic (just before **going** to sleep) or hypnopompic (just before awakening; get **pomped** up in the morning) hallucinations.
- Nocturnal and narcoleptic sleep episodes that start with REM sleep (sleep paralysis).
- Cataplexy (loss of all muscle tone following strong emotional stimulus, such as laughter).

Treatment: good sleep hygiene (scheduled naps, regular sleep schedule), daytime stimulants (eg, modafinil, solriamfetol, pitolisant, amphetamines) and/or nighttime sodium oxybate (GHB).

Substance use disorder

Maladaptive pattern of substance use involving ≥ 2 of the following in the past year:

- Tolerance
- Withdrawal
- Intense, distracting cravings
- Using more, or longer, than intended
- Persistent desire but inability to cut down
- Time-consuming substance acquisition, use, or recovery
- Impaired functioning at work, school, or home
- Social or interpersonal conflicts
- Reduced recreational activities
- > 1 episode of use involving danger (eg, unsafe sex, driving while impaired)
- Continued use despite awareness of harm

In the case of appropriate medical treatment with prescribed medications (eg, opioid analgesics, sedatives, stimulants), symptoms of tolerance and withdrawal do not indicate a substance use disorder.

Gambling disorder

Persistent, recurrent, problematic gambling that cannot be better explained as a manic episode.

Diagnosis made if patient meets ≥ 4 of the following criteria:

- Is preoccupied with gambling
- Requires more gambling to reach desired level of excitement
- Has failed efforts to limit, cut back, or stop gambling
- Becomes restless or irritable when limiting or attempting to stop gambling
- Gambles to escape or relieve feelings of helplessness, guilt, anxiety, or depression
- After losing money gambling, continues gambling in an attempt to recover losses
- Lies to conceal the extent of gambling
- Puts at risk or has lost significant relationship, career, or academic pursuits because of gambling
- Relies on money from others to fix financial collapse due to gambling

Treatment: psychotherapy.

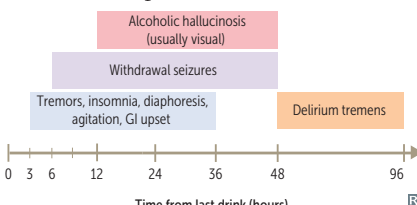
Transtheoretical model of change

STAGE	FEATURES	MOTIVATIONAL STRATEGIES
Precontemplation	Denies problem and its consequences.	Encourage introspection. Use patient's personal priorities in explaining risks. Affirm your availability to the patient.
Contemplation	Acknowledges problem but is ambivalent or unwilling to change.	Discuss pros of changing and cons of maintaining current behavior. Suggest means to support behavior changes.
Preparation/ determination	Committed to and planning for behavior change.	Employ motivational interviewing. Encourage initial changes, promote expectations for positive results, provide resources to assist in planning.
Action/ willpower	Executes a plan and demonstrates a change in behavior.	Assist with strategies for self-efficacy, contingency management, and coping with situations that trigger old behaviors.
Maintenance	New behaviors become sustained, integrate into personal identity and lifestyle.	Reinforce developing habits. Evaluate and mitigate relapse risk. Praise progress.
Relapse	Regression to prior behavior (does not always occur).	Varies based on degree of regression. Encourage return to changes. Provide reassurance that change remains possible.

Psychiatric emergencies

	CAUSE	MANIFESTATION	TREATMENT
Serotonin syndrome	Any drug that ↑ 5-HT. Psychiatric drugs: MAO inhibitors, SSRIs, SNRIs, TCAs, vilazodone, vortioxetine, buspirone Nonpsychiatric drugs: tramadol, ondansetron, triptans, linezolid, MDMA, dextromethorphan, meperidine, St. John's wort	3 A's: ↑ a ctivity (neuromuscular; eg, clonus, hyperreflexia, hypertonia, tremor, seizure), a utonomic instability (eg, hyperthermia, diaphoresis, diarrhea), a ltered mental status	Benzodiazepines and supportive care; cyproheptadine (5-HT ₂ receptor antagonist) if no improvement Prevention: avoid simultaneous serotonergic drugs, and allow a washout period between them
Hypertensive crisis	Eating tyramine-rich foods (eg, aged cheeses, cured meats, wine, chocolate) while taking MAO inhibitors, insufficient washout period when switching antidepressants to or from MAO inhibitors	Hypertensive crisis (tyramine displaces other neurotransmitters [eg, NE] in the synaptic cleft → ↑ sympathetic stimulation)	Phentolamine
Neuroleptic malignant syndrome	Antipsychotics (typical > atypical) + genetic predisposition	Malignant FEVER: M yoalbuminuria, F ever, E ncephalopathy, V itals unstable, ↑ E nzymes (eg, CK), muscle R igidity ("lead pipe")	Dantrolene, dopaminergics (eg, bromocriptine, amantadine), benzodiazepines; discontinue causative agent
Delirium tremens	Alcohol withdrawal; occurs 2–4 days after last drink Classically seen in hospital setting when inpatient cannot drink	Altered mental status, hallucinations, autonomic hyperactivity, anxiety, seizures, tremors, psychomotor agitation, insomnia, nausea	Longer-acting benzodiazepines
Acute dystonia	Antipsychotics (typical > atypical), anticonvulsants (eg, carbamazepine), metoclopramide	Sudden onset of muscle spasms, stiffness, and/or oculogyric crisis occurring hours to days after medication use; can lead to laryngospasm requiring intubation	Benzotropine or diphenhydramine
Lithium toxicity	↑ lithium dosage, ↓ renal elimination (eg, acute kidney injury), medications affecting clearance (eg, ACE inhibitors, thiazide diuretics, NSAIDs) Narrow therapeutic window	Nausea, vomiting, slurred speech, hyperreflexia, seizures, ataxia, nephrogenic diabetes insipidus	Discontinue lithium, hydrate aggressively with isotonic sodium chloride, consider hemodialysis
Tricyclic antidepressant toxicity	TCA overdose	Sedation, anticholinergic effects, prolonged QT and QRS Tricyclic's: convulsions, coma, cardiotoxicity (arrhythmia due to Na ⁺ channel inhibition)	Supportive treatment, monitor ECG, NaHCO ₃ (prevents arrhythmia), activated charcoal

Psychoactive drug intoxication and withdrawal

DRUG	MECHANISM	INTOXICATION	WITHDRAWAL
Depressants			
		Nonspecific: mood elevation, ↓ anxiety, sedation, behavioral disinhibition, respiratory depression.	Nonspecific: anxiety, tremor, seizures, insomnia.
Alcohol	GABA-A receptor positive allosteric modulator. Inhibits glutamate-induced excitation of NMDA.	Emotional lability, slurred speech, ataxia, coma, blackouts. AST value is 2× ALT value (“ ToAST 2 ALcohol ”). Treatment: supportive (eg, fluids, antiemetics).	Adaptation causes ↑ glutamate receptors; symptoms result from unregulated excess excitation. Treatment: longer-acting benzodiazepines.
			
Barbiturates	GABA-A receptor positive allosteric modulator.	Low safety margin, marked respiratory depression. Treatment: symptom management (eg, assist respiration, ↑ BP).	Delirium, life-threatening cardiovascular collapse.
Benzodiazepines	GABA-A receptor positive allosteric modulator.	Greater safety margin. Ataxia, minor respiratory depression. Treatment: flumazenil (benzodiazepine receptor antagonist).	Seizures, sleep disturbance, depression.
Opioids	Opioid receptor modulator.	Activation of μ receptors causes the prototypic effect of miosis (pinpoint pupils), ↓ GI motility, respiratory and CNS depression, euphoria, ↓ gag reflex, seizures. Most common cause of drug overdose death. Overdose treatment: naloxone.	Mydriasis, diarrhea, flulike symptoms, rhinorrhea, yawning, nausea, sweating, piloerection (“cold turkey”), lacrimation. Treatment: symptom management, methadone, buprenorphine.
Inhalants	Enhanced GABA signaling.	Disinhibition, euphoria, slurred speech, ataxia, disorientation, drowsiness, periorificial rash. Rapid onset and resolution.	Irritability, dysphoria, sleep disturbance, headache.
Stimulants			
	Nonspecific.	Mood elevation, ↓ appetite, psychomotor agitation, insomnia, cardiac arrhythmias, ↑ HR, anxiety.	Post-use “crash,” including depression, lethargy, ↑ appetite, sleep disturbance, vivid nightmares.
Amphetamines	Induces reversal of monoamine transporters (VMAT, DAT, SERT, NET), ↑ neurotransmitter release.	Euphoria, grandiosity, mydriasis, prolonged wakefulness, hyperalertness, hypertension, paranoia, fever. Skin excoriations with methamphetamine use. Severe: cardiac arrest, seizures. Treatment: benzodiazepines for agitation and seizures.	Meth mites (tactile hallucinations)

Psychoactive drug intoxication and withdrawal (continued)

DRUG	MECHANISM	INTOXICATION	WITHDRAWAL
Caffeine	Adenosine receptor antagonist.	Palpitation, agitation, tremor, insomnia.	Headache, difficulty concentrating, flulike symptoms.
Cocaine	Blocks reuptake by dopamine (DAT), serotonin (SERT), and norepinephrine (NET) transporters.	Impaired judgment, mydriasis, diaphoresis, hallucinations (including formication), paranoia, angina, sudden cardiac death. Chronic use may lead to perforated nasal septum due to vasoconstriction and resulting ischemic necrosis. Treatment: benzodiazepines.	Restlessness, hunger, severe depression, sleep disturbance.
Nicotine	Stimulates central nicotinic acetylcholine receptors.	Restlessness.	Irritability, anxiety, restlessness, ↓ concentration, ↑ appetite/weight. Treatment: nicotine replacement therapy (eg, patch, gum, lozenge); bupropion/varenicline.
Hallucinogens			
Lysergic acid diethylamide	5-HT _{2A} receptor agonist.	Perceptual distortion (visual, auditory), depersonalization, anxiety, paranoia, psychosis, flashbacks, mydriasis.	
Cannabis/cannabinoids	CB1 receptor agonist.	Euphoria, anxiety, paranoid delusions, perception of slowed time, impaired judgment, social withdrawal, ↑ appetite, dry mouth, conjunctival injection, hallucinations.	Irritability, anxiety, depression, insomnia, restlessness, ↓ appetite.
MDMA (ecstasy)	Induces reversal of transporters for monoamines (SERT > DAT, NET), → ↑ neurotransmitter release.	Euphoria, hallucinations, disinhibition, hyperactivity, ↑ thirst, bruxism, distorted perceptions, mydriasis. Life-threatening effects include hypertension, tachycardia, hyperthermia, hyponatremia, serotonin syndrome.	Depression, fatigue, change in appetite, difficulty concentrating, anxiety.
Phencyclidine	NMDA receptor antagonist.	Violence, nystagmus, impulsivity, psychomotor agitation, tachycardia, hypertension, analgesia, psychosis, delirium, seizures.	

Alcohol use disorder	Diagnosed using criteria for substance use disorder. Complications: vitamin B ₁ (thiamine) deficiency, alcoholic cirrhosis, hepatitis, pancreatitis, peripheral neuropathy, testicular atrophy. Treatment: naltrexone (reduces cravings; avoid in liver failure), acamprosate (contraindicated in renal failure), disulfiram (to condition the patient to abstain from alcohol use). Support groups such as Alcoholics Anonymous are helpful in sustaining abstinence and supporting patient and family.
Wernicke-Korsakoff syndrome	Results from vitamin B ₁ deficiency. Symptoms can be precipitated by administering dextrose before vitamin B ₁ . Triad of confusion, ophthalmoplegia, ataxia (Wernicke encephalopathy). May progress to irreversible memory loss, confabulation, personality change (Korsakoff syndrome). Treatment: IV vitamin B ₁ (before dextrose).

► PSYCHIATRY—PHARMACOLOGY

Psychotherapy

Behavioral therapy	Teaches patients how to identify and change maladaptive behaviors or reactions to stimuli (eg, systematic desensitization for specific phobia).
Cognitive behavioral therapy	Teaches patients to recognize distortions in their thought processes, develop constructive coping skills, and ↓ maladaptive coping behaviors → greater emotional control and tolerance of distress (eg, recognizing triggers for alcohol consumption).
Dialectical behavioral therapy	Designed for use in borderline personality disorder, but can be used in other psychiatric conditions as well (eg, depression).
Interpersonal therapy	Focused on improving interpersonal relationships and communication skills.
Motivational interviewing	Enhances intrinsic motivation to change by exploring and resolving ambivalence. Used in substance use disorder and weight loss.
Supportive therapy	Utilizes empathy to help individuals during a time of hardship to maintain optimism or hope.

Central nervous system stimulants Methylphenidate, dextroamphetamine, methamphetamine, lisdexamfetamine.

MECHANISM	↑ catecholamines in the synaptic cleft, especially norepinephrine and dopamine.
CLINICAL USE	ADHD, narcolepsy, binge-eating disorder.
ADVERSE EFFECTS	Nervousness, agitation, anxiety, insomnia, anorexia, tachycardia, hypertension, weight loss, tics, bruxism.

Antipsychotics

Typical (1st-generation) antipsychotics—haloperidol, pimozide, trifluoperazine, fluphenazine, thioridazine, chlorpromazine.

Atypical (2nd-generation) antipsychotics—aripiprazole, asenapine, clozapine, olanzapine, quetiapine, iloperidone, paliperidone, risperidone, lurasidone, ziprasidone.

MECHANISM	Block dopamine D ₂ receptor (↑ cAMP). Atypical antipsychotics also block serotonin 5-HT ₂ receptor. Aripiprazole is a D ₂ partial agonist.
CLINICAL USE	Schizophrenia (typical antipsychotics primarily treat positive symptoms; atypical antipsychotics treat both positive and negative symptoms), disorders with concomitant psychosis (eg, bipolar disorder), Tourette syndrome, OCD, Huntington disease. Clozapine is used for treatment-resistant psychotic disorders or those with persistent suicidality (cloze to the edge).
ADVERSE EFFECTS	<p>Antihistaminic (sedation), anti-α₁-adrenergic (orthostatic hypotension), antimuscarinic (dry mouth, constipation) (anti-HAM). Use with caution in dementia.</p> <p>Metabolic: weight gain, hyperglycemia, dyslipidemia. ↑ risk with clozapine and olanzapine (obesity).</p> <p>Endocrine: hyperprolactinemia → galactorrhea, oligomenorrhea, gynecomastia (↓ activity in the tuberoinfundibular pathway).</p> <p>Cardiac: QT prolongation.</p> <p>Neurologic: neuroleptic malignant syndrome.</p> <p>Ophthalmologic: chlorpromazine—corneal deposits; thioridazine—retinal deposits.</p> <p>Clozapine—agranulocytosis (monitor WBCs clozely), seizures (dose related), myocarditis, hypersalivation.</p> <p>Extrapyramidal symptoms (↓ activity in the nigrostriatal pathway)—ADAPT:</p> <ul style="list-style-type: none"> Hours to days: Acute Dystonia (muscle spasm, stiffness, oculogyric crisis). Treatment: benztropine, diphenhydramine. Days to months: <ul style="list-style-type: none"> Akathisia (restlessness). Treatment: β-blockers, benztropine, benzodiazepines. Parkinsonism (bradykinesia). Treatment: benztropine, amantadine. Months to years: Tardive dyskinesia (chorea, especially orofacial). Treatment: benzodiazepines, botulinum toxin injections, valbenazine, deutetrabenazine.
NOTES	<p>Lipid soluble → stored in body fat → slow to be removed from body.</p> <p>Typical antipsychotics have greater affinity for D₂ receptor than atypical antipsychotics → ↑ risk for hyperprolactinemia, extrapyramidal symptoms, neuroleptic malignant syndrome.</p> <p>High-potency typical antipsychotics: haloperidol, trifluoperazine, pimozide, fluphenazine (Hal tries pie to fly high)—more neurologic adverse effects (eg, extrapyramidal symptoms).</p> <p>Low-potency typical antipsychotics: chlorpromazine, thioridazine (cheating thieves are low)—more antihistaminic, anti-α₁-adrenergic, antimuscarinic effects.</p>

Lithium

MECHANISM	Affects neurotransmission (↓ excitatory, ↑ inhibitory) and second messenger systems (eg, G proteins).
CLINICAL USE	Mood stabilizer for bipolar disorder; treats acute manic episodes and prevents relapse.
ADVERSE EFFECTS	Tremor, hypothyroidism, hyperthyroidism, mild hypercalcemia, polyuria (causes nephrogenic diabetes insipidus), teratogenesis (causes Ebstein anomaly). Narrow therapeutic window requires close monitoring of serum levels. Almost exclusively excreted by kidneys; most is reabsorbed at PCT via Na ⁺ channels. Thiazides, ACE inhibitors, NSAIDs, and other drugs affecting clearance are implicated in lithium toxicity.

LiTHIUM:

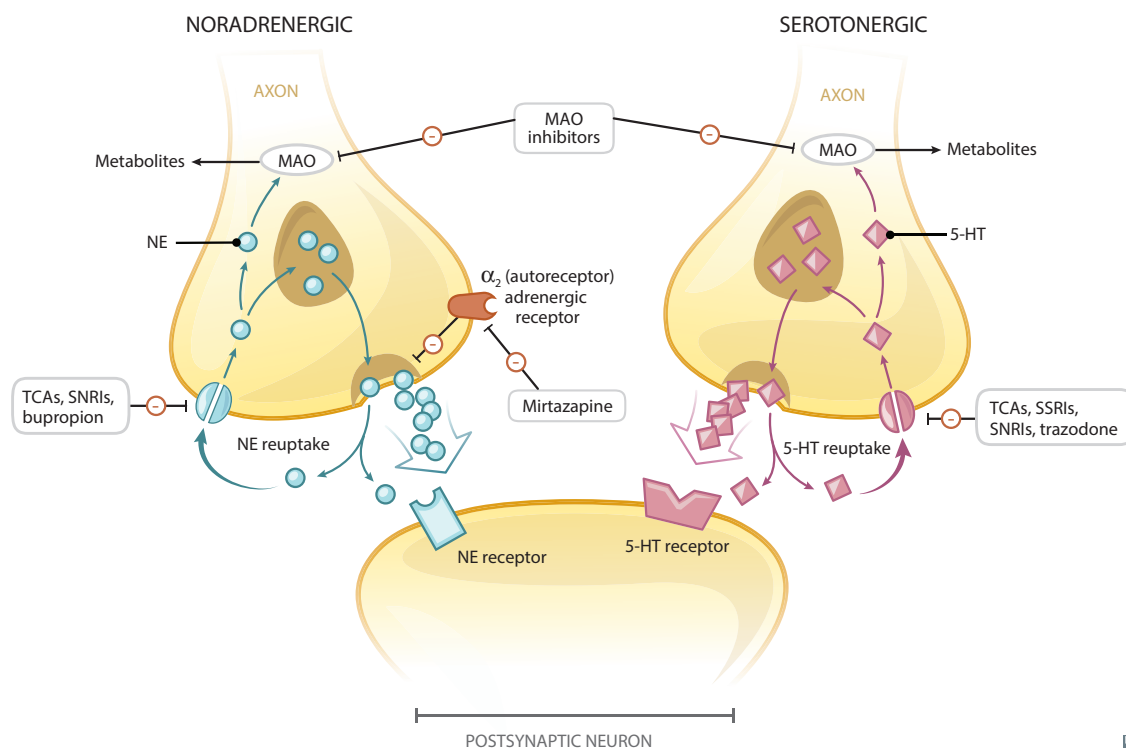
Low **T**hyroid (hypothyroidism)
Hearth (Ebstein anomaly)
Insipidus (nephrogenic diabetes insipidus)
Unwanted **M**ovements (tremor)

Buspirone

MECHANISM	Partial 5-HT _{1A} receptor agonist.
CLINICAL USE	Generalized anxiety disorder. Does not cause sedation, addiction, or tolerance. Begins to take effect after 1–2 weeks. Does not interact with alcohol (vs barbiturates, benzodiazepines). I get anxious if the bus doesn't arrive at one , so I take buspirone .

Antidepressants

It normally takes 4–8 weeks for antidepressants to show appreciable effect.



Selective serotonin reuptake inhibitors

Fluoxetine, fluvoxamine, paroxetine, sertraline, escitalopram, citalopram.

MECHANISM	Inhibit 5-HT reuptake.
CLINICAL USE	Depression, generalized anxiety disorder, panic disorder, OCD, bulimia, binge-eating disorder, social anxiety disorder, PTSD, premature ejaculation, premenstrual dysphoric disorder.
ADVERSE EFFECTS	Fewer than TCAs. Serotonin syndrome, GI distress, SIADH, sexual dysfunction (anorgasmia, erectile dysfunction, ↓ libido), mania precipitation if underlying bipolar disorder.

Serotonin-norepinephrine reuptake inhibitors

Venlafaxine, desvenlafaxine, duloxetine, levomilnacipran, milnacipran.

MECHANISM	Inhibit 5-HT and NE reuptake.
CLINICAL USE	Depression, generalized anxiety disorder, diabetic neuropathy. Venlafaxine is also indicated for social anxiety disorder, panic disorder, PTSD, OCD. Duloxetine and milnacipran are also indicated for fibromyalgia.
ADVERSE EFFECTS	↑ BP, stimulant effects, sedation, sexual dysfunction, nausea.

Tricyclic antidepressants

Amitriptyline, nortriptyline, imipramine, desipramine, clomipramine, doxepin, amoxapine.

MECHANISM	TCAs inhibit 5-HT and NE reuptake.
CLINICAL USE	MDD, peripheral neuropathy, chronic neuropathic pain, migraine prophylaxis, OCD (clomipramine), nocturnal enuresis (imipramine).
ADVERSE EFFECTS	Sedation, α_1 -blocking effects including postural hypotension, and atropine-like (anticholinergic) adverse effects (tachycardia, urinary retention, dry mouth). 3° TCAs (amitriptyline) have more anticholinergic effects than 2° TCAs (nortriptyline). Can prolong QT interval. Tri-CyCliC's: C onvulsions, C oma, C ardiotoxicity (arrhythmia due to Na ⁺ channel inhibition); also respiratory depression, hyperpyrexia. Confusion and hallucinations are more common in older adults due to anticholinergic adverse effects (2° amines [eg, nortriptyline] better tolerated). Treatment: NaHCO ₃ to prevent arrhythmia.

Monoamine oxidase inhibitors

Tranylcypromine, phenelzine, isocarboxazid, selegiline (selective MAO-B inhibitor). (MAO takes pride in Shanghai).

MECHANISM	Nonselective MAO inhibition → ↑ levels of amine neurotransmitters (norepinephrine, 5-HT, dopamine).
CLINICAL USE	Atypical depression, anxiety. Parkinson disease (selegiline).
ADVERSE EFFECTS	CNS stimulation; hypertensive crisis, most notably with ingestion of tyramine. Contraindicated with SSRIs, TCAs, St. John's wort, meperidine, dextromethorphan, pseudoephedrine, linezolid (to avoid precipitating serotonin syndrome). Wait 2 weeks after stopping MAO inhibitors before starting serotonergic drugs (risk for serotonin syndrome) or stopping dietary restrictions (risk for tyramine induced hypertensive crisis).

Atypical antidepressants

Atypical Bees Make Tasty Vegan Venison.

Bupropion	Inhibits NE and DA reuptake. Also used for smoking cessation. Adverse effects: stimulant effects (tachycardia, insomnia), headache, seizures in patients with bulimia and anorexia nervosa. ↓ risk of sexual adverse effects and weight gain compared to other antidepressants.
Mirtazapine	α_2 -antagonist (↑ release of NE and 5-HT), potent 5-HT ₂ and 5-HT ₃ receptor antagonist, and H ₁ antagonist. Adverse effects: sedation (which may be desirable in depressed patients with insomnia), ↑ appetite, weight gain (which may be desirable in underweight patients), dry mouth. Mirtazapine makes you munch more and move less.
Trazodone	Primarily blocks 5-HT ₂ , α_1 -adrenergic, and H ₁ receptors; also weakly inhibits 5-HT reuptake. Used primarily for insomnia, as high doses are needed for antidepressant effects. Adverse effects: sedation, nausea, priapism, postural hypotension. Think traZZZobone due to sedative and male-specific adverse effects.
Vilazodone	Inhibits 5-HT reuptake; 5-HT _{1A} receptor partial agonist. Used for MDD. Adverse effects: headache, diarrhea, nausea, anticholinergic effects. May cause serotonin syndrome if taken with other serotonergic agents.
Vortioxetine	Inhibits 5-HT reuptake; 5-HT _{1A} receptor agonist and 5-HT ₃ receptor antagonist. Used for MDD. Adverse effects: nausea, sexual dysfunction, sleep disturbances, anticholinergic effects. May cause serotonin syndrome if taken with other serotonergic agents.

Pharmacotherapies for smoking cessation

Nicotine replacement therapy	Binds to nicotinic ACh receptors. Aim to relieve withdrawal symptoms upon stopping smoking. Long-acting patch and short-acting products (ie, gum, lozenge) can be used in combination. Adverse effects: headache, oral irritation.
Varenicline	Nicotinic ACh receptor partial agonist. Diminishes effect on reward system, but also reduces withdrawal. Adverse effects: GI discomfort, sleep disturbance. Varenicline helps nicotine cravings decline.

Medically supervised opioid withdrawal and relapse prevention

Methadone	Long-acting oral opioid used for medically supervised opioid (eg, heroin) withdrawal or long-term maintenance therapy.
Buprenorphine	Partial opioid agonist. Sublingual form (film) used to suppress withdrawal and for maintenance therapy. Partial agonists can precipitate withdrawal symptoms in opioid-dependent individuals or when administered shortly after use of a full agonist.
Naloxone	Short-acting opioid antagonist given IM, IV, or as a nasal spray to treat acute opioid overdose, particularly to reverse respiratory and CNS depression.
Naltrexone	Long-acting oral opioid antagonist used after detoxification to prevent relapse. May help alcohol and nicotine cessation, weight loss. Use naltrexone for the long trex back to sobriety.