PSYCHIATRY NBME

Emma Holliday review

Psych Pharm review- Divine interventional

Drugs of Abuse

Molly & Tulsi slides

Dr. Smith's advice

- Palmar crease: downs syndrome & fetal alcohol syndrome
- Rule out medical conditions
- REM sleep disorders and narcolepsy
- Pay special attention to the time frames
- Pay special attention to labs, weight gain, high glucose

Defense Mechanisms
Immature
Splitting: sorting people into categories of "all good" or "all bad"
Projection: denying unwanted feelings in the self and attributing them to others
Denial: refusing to accept reality to avoid unwanted feelings
Dissociation: disconnecting the self from the reality, often associated with impairments in perception or cognition (e.g., fugue states)
Acting out: expressing unwanted feelings through behavior
Regression: returning to an earlier developmental level of functioning to avoid unwanted feelings
Intellectualization: excessively thinking about facts instead of unwanted emotions
Rationalization: thinking of justifications for problematic situations or feelings
Displacement: transferring unwanted feelings from one person to another person, usually someone in a neutral position
Reaction formation: turning unacceptable feelings into the opposite
Repression: hiding thoughts and feelings from the consciousness
Mature
Humor: making light of uncomfortable thoughts or feelings
Altruism: doing things for others as a way to deal with painful feelings or thoughts
Sublimation: moving uncomfortable thoughts or feelings directly from the unconscious to consciousness in a useful or productive form
Suppression: consciously and purposefully deciding to put a thought or feeling out of one's mind

Brain Regions and functions / Neurotransmitters

- Substantia Nigra and Ventral Tegmental area= DOPAMINE→ nucleus accumbens
    - High: Schizophrenia, addiction
    - Low: Parkinsons
- Locus Coeruleus= NOREPINEPHRINE

    - High: Anxiety
- Nucleus basalis of Meynert= ACH
    - Low= Depression and Anxiety
- Raphe Nuclei= SEROTONIN
    - Low= Depression
- Caudate Nucleus= GABA
    - Low= Huntington
- Hippocampus= MEMORY → decreased volume in Schizophrenia
- Prefrontal cortex= high cognitive function → decreased in frontotemporal dementia, MDD, negative symptoms of schizophrenia
- Amygdala= EMOTIONS and FEAR
- Temporal Lobe
    - Dominant (Left) = Language
    - Bilateral= agraphia, agnosia, acalculia
    - Temporal lobe epilepsy → psychosis / schizophrenia
- Parietal Lobe
    - Dominant= calculations, drawing
    - non-dominant= visuospatial orientation (drawing a clock)
- Ventricles
    - Enlarged lateral ventricles= schizophrenia
    - Ex vacuo ventriculomegaly= huntington

Psychiatric Emergencies

- **Hypertensive crisis**
    - > 180/ 120 from MAOi + tyramines (aged cheese, wine) or ephedrine
    - Nausea, vomit, diaphoresis, headaches, hypertension, intracranial bleed (due to sympathomimetic effect)
    - Phenelzine + tyramine
    - Tx: **phentolamine**
- **Malignant Hyperthermia**
    - Must have surgery
    - Inhaled anesthetic agent (halothane, isoflurane), succhinylcholine
    - RYR1 calcium channel deficiency
    - Muscle rigidity, hyperthermia, tachycardia
    - Tx: **dantrolene**
- **Neuroleptic Malignant Syndrome**
    - High potency Typical antipsychotics D2 antagonists (haloperidol), clozapine
    - Occurs over **WEEKS**
    - **Dopamine**
    - HYPOreflexia, hyperthermia, muscle **rigidity/ lead-pipe,** ANS instability, bradykinesia, akinesia, rhabdomyolysis, CK elevation develops in 1 day - weeks
    - Leukocytosis, protein elevation in CSF
    - Sustained muscle contractions : high CK, Cr and BUN

        - Tx: discontinue antipsychotic (**haloperidol** common cause) → IV fluids → benzodiazepine → dantrolene/ bromocriptine/ amantadine
        - Supportive care
        - Benzodiazepine
        - Bromocriptine, amantadine
        - **Dantrolene**
- **Serotonin Syndrome*****
    - SSRI + antidepressant, dextromethorphan (OTC cough suppressant)= Increased 5HT
    - Serotonin
    - Can occur with Linezolid for MRSA (serotonergic)
    - Rapid onset of lethargy, confusion, restless, flushing → hypertonicity, HYPERreflexia, **clonus**, hyperthermia, convulsions, coma, death
    - Stop medications
    - Tramadol, SNRI, SSRI
    - Tx: Benzodiazepines > cyproheptadine
Hunter Criteria for Diagnosing Serotonin Syndrome		
Recent use of serotonergic agent (usually in the past 5 weeks)	**Plus**	Any of the following: • Spontaneous clonus • Hyperreflexia **AND** tremor • Muscle rigidity **AND** hyperthermia (temp > 100.4°F) **AND** ocular or inducible clonus • Inducible clonus **AND** agitation **OR** diaphoresis • Ocular clonus **AND** agitation **OR** diaphoresis
- **Acute dystonia**
    - Sudden, involuntary sustained contraction of the head/ eyes/ neck muscles.
    - starts in hours- days from starting antipsychotic medication (haloperidol) potent dopamine D2 receptor blockers. (first generation > second generation)
        - Tx: **Anticholinergics= benztropine**, **diphenhydramine**
        - Aspirin, Acetaminophen, physiotherapy
        - 2nd line: botox, surgical release
    - Caused by first generation antipsychotics (haloperidol, fluphenazine)
    - Features: oculogyric crisis, forced upward gaze deviation
- **Pseudoparkinsonism**
    - Days-weeks after antipsychotic drug started or dose increased
        - Reduce drug dose
        - Change to lower potency
        - Prescribe antipsychotic
- **Akathisia**
    - Hours to weeks of starting antipsychotic
        - Reduce drug dose

        - Change to lower potency
        - Propranolol for symptoms
        - 5HT2 antagonists “cyproheptadine, mirtazapine, trazodone, diphenhydramine
- **Tardive dyskinesia**
    - Lip smacking, blinking, choreoathetoid movements due to upregulated D2 receptors in basal ganglia→ dopamine hypersensitivity
    - Abrupt stop to antipsychotic worsens TD → gradually taper
    - Tx: stop causative agent slowly, VMAT inhibitor (tetrabenazine)
        - Decrease monoamine uptake
        - Switch to 2nd generation agent
- **Agitated Patients**
    - Verbal de escalation
    - Offer something to eat and drink
    - Chemical and physical restraints are last resort
    - Acutely agitated behavior → benzodiazepine (lorazepam)

Antipsychotic extrapyramidal effects		Pharmacotherapy*
Acute dystonia	• Sudden, sustained contraction of the neck, mouth, tongue & eye muscles	• Benztropine • Diphenhydramine
Akathisia	• Subjective restlessness, inability to sit still	• Beta blocker (propranolol) • Benzodiazepine (lorazepam) • Benztropine
Parkinsonism	• Gradual-onset tremor, rigidity & bradykinesia	• Benztropine • Amantadine
Tardive dyskinesia	• Gradual onset after prolonged therapy (>6 months): dyskinesia of the mouth, face, trunk & extremities	• Valbenazine • Deutetrabenazine

Extrapyramidal Symptoms			
Subtype	**Time to Onset**	**Description**	**Treatment**
Acute dystonia	1-5 days	Involuntary and painful muscle spasms primarily affecting the head, neck, and tongue	• Stop the offending agent • Start an anticholinergic medication (benztropine or diphenhydramine
Parkinsonism	1 week	Cogwheel rigidity, muscle stiffness, shuffling gate, tremor	• Lower the dose of the offending agent or switch to an antipsychotic with a lower risk of EPS • Start an anticholinergic medication or dopamine agonist (amantadine)
Akathisia	1-8 weeks	Inability to sit or stand still, persistent urge to move	• Lower the dose or switch the offending agent • Start propranolol • If propranolol is ineffective or cannot be tolerated, could use a benzodiazepine or benztropine
Tardive dyskinesia	months to years	Involuntary muscle movements such as: • Sucking, smacking of lips • Choreoathetoid movements of the tongue • Facial grimacing • Lateral jaw movements • Choreiform or athetoid movements of the extremities and/or truncal areas	• Prevention is key as there is little evidence of any highly effective treatments • Stop the offending agent, may switch to an antipsychotic with less risk of EPS

- Suicide
    - Risk factors: guns at home, men, live alone, schizophrenia
    - Clozapine and lithium reduce suicidality
- Homicide
    -

Homicide risk factors
• Young male • Unemployed • Impoverished • Access to firearms • Substance abuse • Antisocial personality disorder • History of violence or criminality • History of childhood abuse • Impulsivity

Ego defense mechanisms

- Suppression: consciously minimizes thoughts of stressor
- Repression: Unconsciously minimizes thoughts of stressor
- Denial: patient refuses to accept reality
- Projection: patient puts their own feelings on someone else
- Reaction Formation: taking an unacceptable feeling and compulsively embraces the opposite idea

- Sublimation: doing something opposite

Projection	Seeing the inside in the outside	Paranoid behavior
Denial	Saying it is not so	Substance-related disorders, reaction to death
Splitting	The world composed of polar opposites	Borderline personality; good vs. evil
Blocking	Transient inability to remember	Momentary lapse
Regression	Returning to an earlier stage of development	Enuresis, primitive behaviors
Somatization	Physical symptoms for psychological reasons	Somatic symptom disorders
Introjection	The outside becomes inside	Superego, being like parents
Displacement	Source stays the same, target changes	Redirected emotion, phobias, scapegoat
Repression	Forgetting so it is nonretrievable	Forget and forget
Isolation of affect	Facts without feeling	Blunted affect, *la belle indifference*
Intellectualization	Affect replaced by academic content	Academic, not human, reaction
Acting out	Affect covered up by excessive action or sensation	Substance-related disorders, fighting, gambling
Rationalization	Why the unacceptable is OK in this instance	Justification, string of reasons
Reaction formation	Unacceptable transformed into its opposite	Manifesting the opposite, feel love but show hate, "Girls have cooties"
Undoing	Action to symbolically reverse the unacceptable	Fixing or repairing, obsessive–compulsive behaviors
Passive-aggression	Passive nonperformance after promise	Unconscious, indirect hostility
Dissociation	Separating self from one's own experience	Fugue, depersonalization, amnesia, multiple personality
Humor	A pleasant release from anxiety	Laughter hides the pain
Sublimation	Unacceptable impulse into acceptable channel	Art, literature, mentoring
Suppression	Forgetting but it is retrievable	Forget and remember

Key defense mechanisms	
Immature	• Acting out: Expressing unacceptable feelings through actions • Denial: Behaving as if an aspect of reality does not exist • Displacement: Transferring feelings to less threatening object/person • Intellectualization: Focusing on nonemotional aspects to avoid distressing feelings • Passive aggression: Avoiding conflict by expressing hostility covertly • Projection: Attributing one's own feelings to others • Rationalization: Justifying behavior to avoid difficult truths • Reaction formation: Transforming unacceptable feelings/impulses into the opposite • Regression: Reverting to earlier developmental stage • Splitting: Experiencing a person/situation as either all positive or all negative
Mature	• Sublimation: Channeling impulses into socially acceptable behaviors • Suppression: Putting unwanted feelings aside to cope with reality

Depressive Disorders *due to decreased 5HT and NE

- **Functional**
  - Next step= physiotherapy, refer for psych
  - Neurologic tests that do not point to an organic cause
- **Major Depressive Disorder (Unipolar- MDD trumps all other diagnosis)**
  - > 5/9 SIGECAPS + depressed mood for **> 2 weeks**
    - Sleep Disturbance (more/ less)
    - Interest (anhedonia)
    - Guilt/ feeling worthless
    - Energy Low
    - Concentration Low
    - Appetite/ Weight change
    - Psychomotor retardation
    - **Suicidal Ideation**
  - Cognitive theory: Negative views about self, the world, and expectation of future failure
  - Increased sleep latency, shortened REM latency & decreased slow-wave sleep
  - Reduced REM latency
  - Increased serum cortisol concentration
  - Low 5-HIAA in CSF (thus why SSRIs help)

- Etiology: hyperactivity of the HPA ⇒ High cortisol, beta blockers (propranolol), methyl-Dopa, clonidine IFN-y, drugs of abuse, Left MCA stroke
- Tx: **SSRI (4-6 weeks)** + therapy
  - SSRI = sexual side effects → ALWAYS taper and switch to SNRI, mirtazapine or Bupropion
  - Tx resistant depression → ECT
  - Add atypical antipsychotic + SSRI if SSRI alone doesn't work
  - Recommend exercise (shortens recovery)

Major Depressive Disorder	
Diagnostic Criteria	**Initial Treatment**
Must have ≥ 5 of 9 (SIG E CAPS)[1] • Depressed mood • **S**leep disturbance • Loss of **I**nterest (anhedonia) • Feeling of **G**uilt or worthlessness • **E**nergy loss and fatigue • **C**oncentration problems • **A**ppetite and weight changes • **P**sychomotor retardation/agitation • **S**uicidal ideation	SSRI and psychotherapy **Resistant (Second line)** • SNRI, MAOI, TCA, atypical antidepressant[2] • Electroconvulsive therapy **Adjuvant (Add-on therapy to SSRI/SNRI)** • Atypical antipsychotic and lithium • Psychotherapy (cognitive based therapy)

Antidepressants		
Drug	**Class**	**High-yield notes**
Citalopram	SSRI	• Fewest drug-drug interactions • Dose-dependent QTc prolongation
Escitalopram	SSRI	• Dose-dependent QTc prolongation
Fluoxetine	SSRI	• Longest half-life, no need to taper • Safe in pregnancy • Approved for use in children and adolescents
Paroxetine	SSRI	• Short half-life, withdrawal syndrome • Weight gain
Sertraline	SSRI	• High risk for gastrointestinal disturbances
Duloxetine	SNRI	• Also used for neuropathic pain
Bupropion	NDRI	• Does not cause sexual dysfunction • Effective for smoking cessation • Weight neutral or weight loss • Contraindicated in seizure disorders

- **Severe MDD w/ Psychotic features or Catatonic Features (unipolar)**
    - Psychotic features: auditory/ visual hallucinations, delusions
    - Catatonic features: staring, stuporous, Sloth-like, echolalia (repeat your words), echopraxia (mimic movements)
        - #1: lorazepam
        - ECT

    - Tx: ECT (induces a epileptic seizure for < 1 minute)- short term
    - Tx: antidepressant + antipsychotic (sertraline + risperidone)- long term
    -

Electroconvulsive therapy for depression	
Indications	• Treatment resistance • Psychotic features • Emergency conditions ◦ Pregnancy ◦ Refusal to eat or drink ◦ Imminent risk for suicide
Safety	• No absolute contraindications • Increased risk ◦ Severe cardiovascular disease, recent myocardial infarction ◦ Space-occupying brain lesion ◦ Recent stroke, unstable aneurysm

- **Atypical depression**
    - Depressive symptoms, hyperphagia, mood reactivity, leaden paralysis
    - Tx: SSRI
- **MDD- Seasonal affective disorder**
    - 2 years of this pattern around the same time of year (winter)
    - Tx: Light therapy, Bupropion
- **Unipolar MDD (one episode)**
    - SSRi until remission, continue for 6 months (continuation phase treatment) and taper
- **Depressed mood due to underlying medical condition**
    - Adrenal insufficiency
    - HIV
    - Cushings syndrome
    - MI
        - SSRI (sertraline) safest
    - Obstructive sleep apnea
        -

STOP-Bang survey for obstructive sleep apnea	
1 point for each characteristic present	• **S**noring • Excessive daytime **t**iredness • **O**bserved apneas or choking/gasping • High blood **p**ressure • **B**MI >35 kg/m^2 • **A**ge >50 • **N**eck size: men >17 in, women >16 in • Male **g**ender

- **Persistent Depressive Disorder (PDD)**
    - Mild depression for **> 2 years**
    - No suicidal ideation or psychomotor agitation
    - Low self-esteem, low energy, poor concentration, hopelessness
    - tx:SSRI or bupropion
- **Postpartum Blues:** sadness, mild sleep and mood disturbance
    - Self-limited 5-14 days postpartum
    - Tx: reassurance & monitoring

- **Postpartum depression**
    - MDD after delivery, 2nd child
    - Tx: SSRI + CBT
- **Postpartum psychosis**
    - Depression + psychosis (hallucinations/ delusions), increased risk of suicide and infanticide > 2 weeks after labor
    - Tx: Inpatient hospitalization, close supervision with baby
- **Premenstrual syndrome**
    - Physical and mood symptoms before menses, resolves
    - No loss of function
    - Tx: lifestyle change, nutrition, exercise, OCPs
- **Premenstrual dysphoric disorder**
    - Somatic symptoms a week before menses 5/11 criteria
        - 1 Mood symptom and 1 depression symptom and physical symptoms
            - Serotonin modulation secondary to estrogen and progesterone
            - Dx: documentation of 2 cycles

1. Depressed mood
2. Anxiety or tension
3. Increased emotional lability
4. Anger or irritability
5. Decreased interest in activities
6. Lethargy or increased fatigue
7. Increased appetite or food cravings
8. Changes in sleep patterns (increased or decreased)
9. Feeling overwhelmed
10. Concentration difficulties
11. Physical symptoms - breast tenderness, swelling, **change in weight and/or bloating,** headaches, muscle/joint pain

- **Bereavement**
    - Depressed mood, seeing/ hearing loved one, depressive symptoms with in 1 year of loved ones death, gradually improves
    - If patient meets MDD criteria, MDD is the diagnosis. Tx: mirtazapine to improve sleep and appetite

Major depressive episode & grief reaction	
Major depressive episode	**Grief reaction**
• ≥2 weeks; ≥5 of 9 symptoms: low mood, anhedonia, sleep disturbance, appetite change, low energy, psychomotor changes, guilt/worthlessness, concentration difficulty, suicidal ideation • May occur in response to a variety of stressors, including loss of a loved one • Marked social & occupational dysfunction • Suicidality related to hopelessness & worthlessness	• Normal reaction to loss (bereavement) • Sadness more specific to thoughts of the deceased • "Waves" of grief at reminders • Self-esteem usually preserved • Functional decline less severe • Thoughts of dying involve wish to join the deceased; active suicidality uncommon • Intensity decreases over time

Mood Disorders

- **BiPolar 1**= MANIA (7 days)
    - DIGFAST
        - Distractibility
        - Insomnia (goes several days without sleep)
        - Grandiosity (superpowers, like God)
        - Flight of Ideas (tangential thoughts, racing thoughts)
        - Increased Activity
        - Pressured Speech, rapid speech
        - Pleasure seeking, hypersexual, risky behaviours (drinking, sex, gambling)
        - Marked impairment
    - Tx: Benzodiazepine, Antipsychotic (acute, agitation) → **Lithium** (0.6-1.2 is therapeutic range), valproate, lamotrigine (safe in pregnancy) + 2**nd generation antipsychotic (aripiprazole)**
        - Toxicity: confusion, thyroid problems, N/V/D, loss of renal function
        - If renal function is bad (high BUN/ Cr) → valproic acid
        - Follow up with CBC, renal function, thyroid tests
    - Antidepressants can induce mania if patient is hypomanic*
    - Drugs of abuse can precipitate Mania

Common Treatments for Bipolar Disorder		
Drug	**Treats Mania**	**Treats Depression**
Lithium (salt)	Yes	No
Aripiprazole (AA)	Yes	No
Lurasidone (AA)	No	Yes
Olanzapine (AA)	Yes	Yes
Quetiapine (AA)	Yes	Yes
Risperidone (AA)	Yes	No
Carbamazepine (AC)	Yes	No
Valproic acid (AC)	Yes	No
AA = atypical antipsychotic; AC = anticonvulsant.		

- **Bipolar 1 with rapid cycling**
  - 1 week of mania + 3 other mood disturbances in 1 year
  - Tx: valproic acid
- **BiPOLAR 2**= HYPOMANIA (4 days, 3 Manic symptoms) + Depression
  - Tx: Lithium/ valproate + 2nd generation Antipsychotic (quetiapine)
  - Tx for kids: Atypical antipsychotics
- **Bipolar with psychosis:** psychosis occurs in absence of up/ down mood
  - Treatment is still lithium despite acute episode of hallucinations
- **Bipolar depression**
  - Tx: lurasidone, quetiapine
  - Avoid antidepressant monotherapy if hypomanic, can induce mania
- **Antidepressant-induced hypomania/ mania**
  - SSRI (fluoxetine) causes manic symptoms→ discontinue the antidepressant → lithium is mania persists or quetiapine
  - All antidepressants can cause mania
- **Cyclothymic disorder**
  - 2 years of hypomanic, dysthymia symptoms with < 2 months symptom free
- **Acute mania**

Acute mania	
Clinical features	• Elevated, irritable, labile mood • Increased energy & activity, decreased need for sleep • Pressured speech, racing thoughts, distractibility • Grandiosity, risky behavior • Marked impairment, may have psychotic symptoms
Management	• Antipsychotics (first- & second-generation) • Lithium (avoid in renal disease) • Valproate (avoid in liver disease) • Combinations in severe mania (eg, antipsychotic plus lithium or valproate) • Adjunctive benzodiazepines for insomnia, agitation

Bipolar & related disorders	
Manic episode • Symptoms more **severe** • **1 week** unless hospitalized • **Marked impairment** in social or occupational functioning or **hospitalization** necessary • May have **psychotic features**; makes episode manic by definition	**Hypomanic episode** • Symptoms **less severe** • **≥4 consecutive days** • Unequivocal, observable change in functioning from patient's baseline • Symptoms not severe enough to cause marked impairment or necessitate hospitalization • **No psychotic features**
Bipolar I • **Manic episode(s)** • Depressive episodes common but not required for diagnosis	
Bipolar II • **Hypomanic episode(s)** • ≥1 major depressive episodes	
Cyclothymic disorder • **≥2 years** of fluctuating, mild hypomanic & depressive symptoms that do not meet criteria for hypomanic or major depressive episodes	

Manic episode	
Clinical features	• ≥1 week of elevated or irritable mood & increased energy/activity • ≥3 of the following symptoms (4 if mood is irritable only) (**DIGFAST** mnemonic): ◦ **Distractibility** ◦ **Impulsivity**/indiscretion, risky behavior ◦ **Grandiosity** ◦ **Flight of ideas**/racing thoughts ◦ Increased **activity**/psychomotor agitation ◦ Decreased need for **sleep** ◦ **Talkativeness**/pressured speech
Severity	• Impaired psychosocial function • May have psychotic features (hallucinations, delusions) • May require hospitalization

Psychotic Disorders

- **Psychosis**
  - Temporal lobe epilepsy
  - Medication induced:
    - Prednisone, glucocorticoids → reduce dose
- **Brief psychotic disorder**
  - Stressful event → **1 day-1 month** of delusion, hallucination, disorganized speech/ behavior more “schizo”
  - Tx: typical Antipsychotics (haloperidol) for acute use

    - **Acute stress disorder:** re-experiencing of trauma, hyperarousal, dissociation, avoidance < 1 month
- **Schizophreniform Disorder**
    - 1-6 months of schizophrenia
- **Schizophrenia**
    - > 6 months with 2 or more of the following:
        - **Delusions**
        - **auditory/ visual hallucinations**
        - disorganized speech
        - negative symptoms: flat affect, alogia, apathy, asociality, attention impaired
        - social/ occupational dysfunction
    - Positive symptoms have better prognosis than negative symptoms
    - Once stabilised, higher cognitive functions continue to decline
    - Catatonic symptoms vary, but respond to a **Benzo** / Lorazepam or **ECT**
    - 50% attempt suicide
    - Tx: antipsychotics indefinitely
        - 1st generation/ typical: D2 blockade, more EPS effects
        - 2nd generation/ atypical: D2 and 5HT blockade, less EPS effects
        - **Clozapine** for treatment resistant schizophrenia
        - Family therapy
    - If comorbid anxiety → do not give Benzodiazepines.
- **Schizoaffective Disorder**
    - Long period of Mood disorder followed by schizophrenic symptoms for > 1 months
    - Psychosis occurs out of the blue > 2 weeks in absence of mood disorder
- **Delusional Disorder** (> 1 month)
    - Fixed, false beliefs = Bizarre delusions, can be Folie a deux, persecutory, jealous, erotomanic, somatic
    - Tx: antipsychotics + psychotherapy
    - Capgras- imposters
- **Neuropsychiatric symptoms + underlying condition**
    - Acute intermittent porphyria (abdominal pain, neurology changes, hallucinations)

Antipsychotic medication effects (dopamine antagonism) in dopamine pathways	
Pathway	**Effect**
Mesolimbic	Antipsychotic efficacy
Nigrostriatal	Extrapyramidal symptoms: Acute dystonia, akathisia, parkinsonism
Tuberoinfundibular	Hyperprolactinemia

Anxiety Disorders

- **Normal stress response**
  - Identifiable stressor, no loss of function
- **Specific phobias**
  - **CBT**
- **Agoraphobia**
  - Anxiety in > 2 spaces (crowds, public transportation), functional impairment > 6 months and not explained by another disorder
  - Commonly diagnosed in older teens and young adult women
- **Generalized Anxiety Disorder**
  - > 6 months of excessive anxiety unable to be eased.
    - Feeling on edge
    - Fatigued
    - Difficulty concentrating
    - Irritability
    - Sleep disturbances (restlessness)
    - Muscle tension
  - Also other comorbid anxiety disorders: avoidant, restrictive food intake disorder
  - Check thyroid, B12, PTH functions
  - Tx: **SSRI**, Acute= Benzodiazepine, Maintenance= Buspirone
    - Early side effect of SSRI= increased anxiety, insomnia, somnolence in first few weeks → decrease dose and titrate as needed
    - Benzos not recommended for long-term tx bc potential for abuse
  - Perinatal GAD causes symptoms that can be distressing → psychotherapy
- **Panic Disorder**
  - Unexpected, recurrent panic attacks that develop quickly with unknown trigger
  - >4 of the following
    - Palpitations
    - Abdominal distress
    - Numbness, nausea
    - Intense fear of death
    - Choking, chills, chest pain
    - Sweating, shaking, shortness of breath
  - Check ECG, COPD, Parkinsons
  - Tx: **long-term= SSRI**
    - **short-acting/ immediate = Benzodiazepine**
- **Social Anxiety Disorder/ performance anxiety**
  - Persistent fear of being embarrassed or humiliated (social phobia)
  - Tx: SSRI, Beta-blocker for acute situations, lorazepam (short acting benzo, best if alcoholic or liver disease), help develop coping mechanisms
- **Agoraphobia**
  - > 6 months of distress in open/ closed spaces, public transportation, crowds
- **Specific Phobia**
  - Fear that is unreasonable or irritations due to specific object

- Tx: SSRI, benzodiazepine (targets GABA), exposure desensitization , CBT

Differential diagnosis of DSM-5 anxiety disorders	
Social anxiety disorder (social phobia)	Anxiety restricted to social & performance situations, **fear of scrutiny** & embarrassment
Panic disorder	Recurrent, **unexpected** panic attacks
Specific phobia	Excessive anxiety about a **specific object** or situation (phobic stimulus)
Generalized anxiety disorder	**Chronic multiple worries**, anxiety, tension

Eating Disorders	
Condition	**Notes**
Pica	Consuming nonfood substances (eg, soil, paper, chalk) on a regular basis >1 month
Rumination disorder	Regurgitation of food (eg, re-chewing, re-swallowing) >1 month
Anorexia nervosa	• Excessive fear of gaining weight • Restriction of caloric intake resulting in significantly lower weight than normal • Distorted body image
Bulimia nervosa	• Excess fear of gaining weight • Repeated binge eating with compensatory behaviors (eg, induced vomiting, laxative use) • Distorted body image • Usually normal weight if not overweight
Binge eating disorder	• Repeated binge eating episodes[1] without compensatory behaviors

Obsessive - Compulsive Disorders

- **OCD**
  - Intrusive obsessions or compulsions with repetitive behaviors that reduce anxiety to prevent a feared situation, affects daily life, ego-dystonic
  - Obsessions “what ifs” → Anxiety → compulsion (behavior) → relief
  - Comorbid with ADHD/ ADD, check for brain lesions, epilepsy
  - Tx: exposure-response prevention, **SSRI**, clomipramine for treatment resistant OCD, CBT

- **Body Dysmorphic Disorder**
  - Obsession about perceived flaw on the body that causes distress → self-consciousness
  - Comorbid with social anxiety disorder
  - Tx: SSRI, cbt
- Gender dysphoria (gender identity is not a disorder)
  - > 6 months incongruence between assigned and felt gender, dislikes anatomy, feels distress.
- **Trichotillomania & excoriation**
  - Recurrent hair pulling or skin picking
- **Intermittent Explosive Disorder**
  - Stressor (violation of space or emotional attack) → violent action that is out of proportion to the stressor to reduce anxiety
  - Pyromania= > 2 occasions setting fire that causes arousal
  - Tx: therapy
- **Kleptomania**
  - Stressor= object with little value → action= stealing impulsivity
  - Feel remorse
  - Tx: coach with therapy
- **Hoarding disorder**
  - Difficulty throwing things away regardless of value → distressing to throw things away
  - Treatment with CBT

Personality Disorders

- **Paranoid Personality Disorder**
  - Distrustful, suspicious, emotionally distant
  - Perceives attacks and holds grudges
  - DO NOT HAVE DELUSIONS
- **Schizoid personality disorder**
  - Loners, do not desire close relationship
  - Flattened affect and emotionally distant
  - Takes pleasure in few activities, indifferent to praise, detached
- **Schizotypal personality disorder**
  - Odd thoughts and behavior, magical thinking
  - Ideas of reference, paranoid ideation
  - Can dress oddly
- **Antisocial personality disorder**
  - > 18 yo with conduct disorder, remorselessness, wreckless, criminal behavior

    - Serotonin decreased in CSF
- **Borderline Personality Disorder**
    - Unstable relationships, impulsive, poor self image and mood instability, fear abandonment, suicidal and injurious behavior
    - Splitting: see people as all good or all bad
    - Tx: **DBT**, lorazepam
- **Histrionic personality disorder**
    - Emotionally excessive and attention seeking behaviors; considers relationships more meaningful than they are (assumed intimacy), denial defense mechanism, seductive behavior to get needs met
    - Need to be the center of attention
- **Narcissistic personality disorder**
    - Grandiosity, lack of empathy, need for admiration
    - Belief of uniqueness, entitlement, exploits people
- **Avoidant personality disorder**
    - Social inhibition, hypersensitive to criticism but desires relationships
- **Dependent personality disorder**
    - Need to be cared for, submissive, fear of separation
    - Goes to extreme lengths for support and gain nurture
- **Obsessive-compulsive personality disorder**
    - Preoccupation with control, orderliness, rigid schedules, lack of flexibility that are ego-syntonic

DSM-5 personality disorders	
Cluster A Odd/eccentric	• **Paranoid:** suspicious, distrustful, hypervigilant • **Schizoid:** prefers to be a loner, detached, unemotional • **Schizotypal:** unusual thoughts, perceptions & behavior
Cluster B Dramatic/erratic	• **Antisocial:** disregard & violation of the rights of others • **Borderline:** chaotic relationships, abandonment fears, labile mood, impulsivity, inner emptiness, self-harm • **Histrionic:** superficial, theatrical, attention-seeking • **Narcissistic:** grandiosity, lack of empathy
Cluster C Anxious/fearful	• **Avoidant:** avoidance due to fears of criticism & rejection • **Dependent:** submissive, clingy, needs to be taken care of • **Obsessive-compulsive:** rigid, controlling, perfectionistic

Somatic Disorder

- **Somatic symptom disorder**

    - Unconscious control of symptoms and motivation, involves multiple organ systems, brought on by psychosocial factors (< 30, GI, sexual, pseudoneurological- tingling, numbness)
    - Symptoms cause anxiety
    - Undergo several procedures
    - Thoughts and behaviors distressing because of pain
    - Comorbid with depression, anxiety or personality disorder
    - Tx: SNRI or TCA, SSRI
- **Illness anxiety disorder**
    - NO symptoms
    - Exaggerated concern for symptoms, high level of anxiety about health
    - Thinks benign things are malignant
    - Not diagnosed when illness preoccupation is explained by another mental health disorder, like panic disorder, etc.
- **Conversion disorder**
    - Patient is indifferent to serious symptoms (la belle indifference)
    - Pseudo-seizures, manifestation of something underlying. Not faked; long seizure, no loss of consciousness, EEG negative, negative prolactin
    - HAVE NEUROLOGIC FINDINGS
- **Factitious disorder/ Munchausen to self or by proxy**
    - Conscious production of symptoms with unconscious motivation to assume sick patient role
        - Melanosis coli- taking too many laxative
    - Munch
- **Malingering**
    - Consciously faking symptoms to gain external incentive, symptoms stop when gain attained

Key features of somatic symptom & related disorders	
Somatic symptom disorder	≥1 unexplained symptoms; excessive thoughts, anxiety & behaviors in response to symptoms
Illness anxiety disorder	Minimal to no symptoms; preoccupation with idea of having a serious illness
Conversion disorder (functional neurologic symptom disorder)	Neurologic symptom(s) incompatible with anatomy or pathophysiology
Factitious disorder	Falsification of symptoms/inducing injury in the absence of obvious external rewards
Malingering	Falsification of illness for obvious external rewards

Trauma and Stress-related Disorders

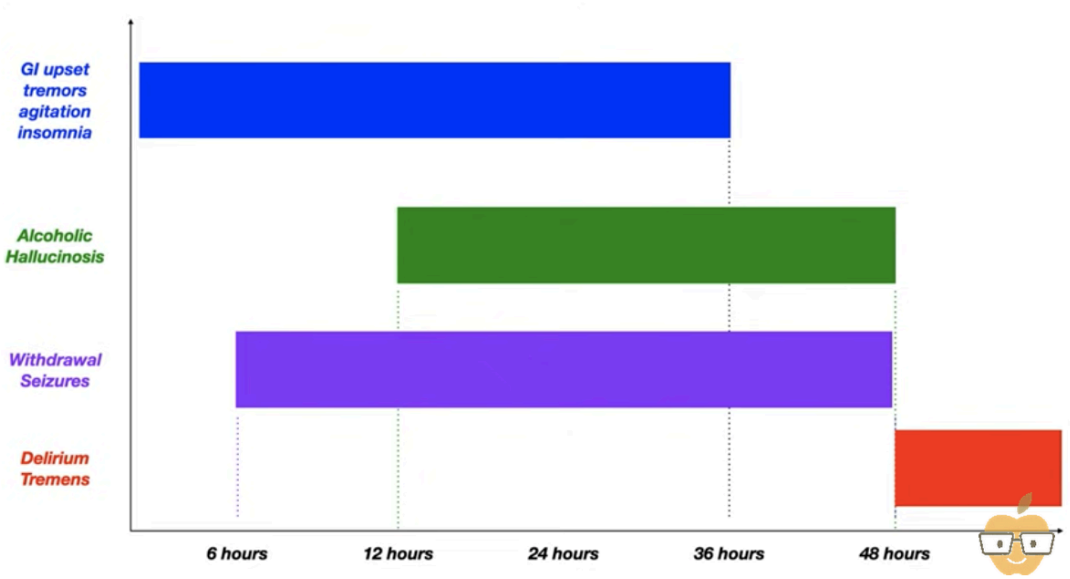
- **Stages of change**
Stages of change model		
Stage		**Motivational interviewing**
Precontemplation	**Not ready to change:** patient does not acknowledge negative consequences	• Encourage patient to evaluate consequences of current behavior • Explain & personalize the risk • Recommending action is premature
Contemplation	**Thinking of changing:** patient acknowledges consequences but is ambivalent	• Encourage evaluation of pros & cons of behavior change • Promote new, positive behaviors
Preparation	**Ready to change:** patient decides to change	• Encourage small initial steps • Reinforce positive outcome expectations
Action	**Making change:** patient makes specific, overt changes	• Help identify appropriate change strategies & enlist social support • Promote self-efficacy for dealing with obstacles
Maintenance	**Changes integrated** into patient's life; focus on relapse prevention	• Follow-up support; reinforce intrinsic rewards • Develop relapse prevention strategies
Identification	**Behavior is automatic:** changes incorporated into sense of self	• Praise changes
- **Reactive attachment disorder**
  - Uninhibited emotionally withdrawn behavior due to neglect and inability to form healthy attachment to caregivers → limited reactivity, sadness, fearful
- **Disinhibited social engagement disorder**
  - Child interacts with unfamiliar adults/ strangers
- **Acute Stress Disorder**
  - Symptoms lasting < 1 month since traumatic event
    - Difficulty sleeping, concentrating, heightened emotional reactivity, avoidance of triggers, cause significant distress
    - Tx: Talk about common physical/ emotional responses to trauma
      - CBT
      - Last resort: SSRI
- **PTSD**
  - Symptoms lasting > 1 month since traumatic event
    - Recurrent intrusive thoughts/ memories
    - Nightmares
    - Avoidance of situations/ memories
    - Hyperarousal/ irritable
    - Distress

        - Negative alterations in mood or cognition
        - High risk of suicidal ideation
    - Tx: trauma focused CBT, SSRI (sertraline, paroxetine), SNRI (venlafaxine), beta blockers (prevent PTSD), clonidine/ guanfacine (agitation), Prazosin (nightmares, insomnia)
- **Adjustment Disorder**
    - ANY Stressor → MILD mixed emotional and behavioral symptoms with in 3 months (depression, anxiety)
    - Marked maladaptive distress out of proportion to the stressor → functional impairment
    - Tx: **psychotherapy** brief cognitive therapy, Benzodiazepine (Clonazepam), sleep aid, anxiolytic
- **Acute stress disorder**
    - Re-experiencing events, avoidance, negative mood, dissociation, hyperarousal for 3 days - 1 month after trauma
- **Dissociative disorder**
    - Consciousness, memory, identity, awareness of self and surroundings are disrupted
    - Detachment from acute trauma

Substance Abuse / Addiction Medicine

- **High yield**
    - Naloxone has no effect → NOT OPIOID OD
- Sedative-hypnotic overdose
    - Combined alcohol + benzos or other substance
- **Smoking**
    - Cessation + behavioral therapy
        - Nicotine replacement therapy
        - Combination therapy: short (gum) + long acting (patch)
        - Bupropion: avoid in seizures
        - Buspirone: anxiety only
        - Set a quit date: 2-4 weeks out
- **Alcohol**
    - Mechanism: increase GABA, decrease Glutamate → withdrawal leads to increased glutamate → massive excitation → sympathetic overdrive
    - Causes portal HTN, hepatitis cirrhosis → ascites, hepatic encephalopathy, decreased albumin, easy bleeding (loss of coag factors), telangiectasias, increased estrogen → testicular atrophy
    - Associations:
        - Cirrhosis, gastritis

        - Wernicke korsakoff syndrome
        - Pancreatitis
        - Beri beri
            - Wet: high output
            - Dry: peripheral neuropathy
        - Dilated cardiomyopathy
        - Peripheral neuropathy
        - Testicular atrophy
        - Cerebellar degeneration
        - Marchiafava-bignami disease
    - **Withdrawal**



    - **Korsakoff syndrome:** alcoholic dementia, confabulation, anterograde and retrograde **amnesia**
    - **Wernicke encephalopathy: confusion, ataxia, nystagmus**
        - Tx: Thiamine → Glucose
        - Naltrexone for abstinence
        - Disulfiram causes aversion to alcohol
        - Chlordiazepoxide for alcohol withdrawal
        - Acamprosate: glutamate modulator reduces risk or relapse

Alcohol withdrawal syndrome		
Manifestations	**Symptoms/signs**	**Onset since last drink (hr)**
Mild withdrawal	Anxiety, insomnia, tremors, diaphoresis, palpitations, gastrointestinal upset, intact orientation	6-24
Seizures	Single or multiple generalized tonic-clonic	12-48
Alcoholic hallucinosis	Visual, auditory, or tactile; intact orientation; stable vital signs	12-48
Delirium tremens	Confusion, agitation, fever, tachycardia, hypertension, diaphoresis, hallucinations	48-96

    - Delirium tremens
        - Sympathetic overdrive (high glutamate)

- **Opioids**
    - Malingering for drugs
        - Query the prescription drug monitoring database
    - **Opioid withdrawal management**
        - 1. Naltrexone (opioid antagonist) for maintenance to prevent relapse, requires detoxification period
        - 2. Methadone (long acting opioid) prevents withdrawal symptoms. Safe in pregnancy. Can cause respiratory suppression
        - 3. Naloxone for immediate IV use, opioid OD
    - MPTP is synthetic opioid that targets the substantia nigra

Pharmacotherapy for opioid use disorder		
	Mechanism of action	**Characteristics**
Buprenorphine	• Mu opioid receptor partial agonist	• Lower risk of respiratory suppression/lethal overdose • Lower risk of misuse • Daily clinic dosing not required
Methadone	• Mu opioid receptor full agonist	• Greater risk of respiratory suppression/lethal overdose • Greater risk of misuse • Adverse effects: risk of hyperalgesia, hypogonadism, QTc prolongation • Daily clinic dosing required

- **Benzodiazepines**
    - Inhibit GABA
    - Sudden withdrawal causes excitatory state
    - OD: altered mental status, ataxia, slurred speech
- **Anabolic steroids**
    - Improve athletic performance but cause baldness, gynecomastia, hepatic dysfunction, altered lipids, virilization, testicular failure , mood and behavioral changes

	Intoxication	Withdrawal	Antidote
Alcohol	CNS depression Impaired coordination, nystagmus Slurred speech, ataxia, emotional lability, disinhibition	Agitation, seizures, hyperexcitability	
Amphetamines	CNS excitation	CNS depression	
Benzodiazepine	CNS depression (fatal with opioid and alcohol), ataxia, slurred speech Tx: Flumazenil	Agitation, seizures, hyperexcitability	flumazenil
Bath salts	Combative, High BP, fever Symptoms last days Negative tox screen		
Cocaine-stimulant	CNS excitation, euphoria Don't give beta blockers!	CNS depression, dysphoria, Crash, vivid dream, hyperphagia, drug craving, por concentration	
Cannabis	Mild euphoria, Munchies, red eyes, dry mouth Recurrent n/v cannabinoid hyperemesis syndrome (chronic use)	none	
Synthetic cathinones Bath salts/ amphetamine analogs	Severe agitation, combative,psychosis, delirium, myoclonus, seizures		
Caffeine	CNS stimulation, focus	headaches	
Opioids (heroin, xanax)	Sedation, euphoria, constipation, Miosis **Naltrexone, Naloxone (IV)**	Agitation, abdominal pain, diarrhea, mydriasis, YAWNING, PILOERECTION **Methadone, buprenorphine, naltrexone**	Naloxone
PCP	Aggression, belligerent,		

	psychosis, homicidal Vertical and horizontal nystagmus, superhuman strength Tx: lorazepam		
MDMA	Bruxism, euphoria, sensory distortions, emotional closeness, severe hyperthermia		
Methamphetamine	Delusions, textile hallucinations, aggressive behavior, poor dentition, excoriations, skin picking Like a manic episode		
LSD	Synthesia / sensory blending		
Inhalants	Short lived high Patchy brain changes		

Standard urine drug screen

Drug	Duration of positive test (short-term use)	Duration of positive test (long-term use)	False positives
Amphetamine	≤2 days	≤4 days	• Atenolol, propranolol • Bupropion • Nasal decongestants
Cocaine	≤2 days	≤7 days	• High specificity
Cannabis	≤3 days	1-2 months	• Hemp-containing foods
Opioids*	≤3 days	≤3 days	• Poppy seeds
Phencyclidine	≤7 days	≤7 days	• Dextromethorphan • Diphenhydramine, doxylamine • Ketamine • Tramadol • Venlafaxine

Child/ Adolescent Psychiatry

- **Separation Anxiety Disorder**

    - Developmentally inappropriate fear when separated from caregiver
        - Distress with anticipation and separation
        - Worry about losing caregiver
        - Worry about getting lost, kidnapped, harmed
        - Refuse to leave home
        - Fear of being alone
        - Nightmares of separation
        - Physical symptoms when separated (stomach ache)
    - Tx: SSRI
- **Generalized anxiety disorder**
    - Range of issues (social, criticism, etc) → irritability, poor sleep, trouble concentration.
    - SOMATIC symptoms
- **Childhood depression**
    - Somatic symptoms, feeling down, suicidal ideation, poor psychosocial support
    - Emergency assessment for possible hospitalizations
- **Autism Spectrum Disorder**
    - Social and emotional reciprocity deficit, no eye-contact, hand flapping
    - Unusual interests and rigid rituals
    - Language and cognitive delay
        - **A**gain and again (repetitive behavior) **U**nusual abilities
        - **T**alking (language) delay
        - **I**Q subnormal
        - **S**ocial development poor
        - **T**hree years of age at onset
        - **I**nherited component
        - **C**ognitive impairment
        - **S**elf-injury
    - Tx: behavioral management, applied behavioral analysis
- **Asperger's Disorder**
    - Normal-high intelligens, but may struggle in social interactions
    - No delay in language or cognitive development
- **Fragile X syndrome**
    - FMR1 gene, trinucleotide expansion
- **Retts Syndrome**
    - X-linked inheritance, small heads and hands
    - Wringing of hands and heads, impaired milestones, lurching gait, seizures, autistic
    - DNA analysis MECP2 mutation
- **Specific learning disorder**
    - Below expected academic achievement, IQ normal
- **Disruptive mood dysregulation disorder**
    - Temper outbursts out of proportion to stimulus
- **ADHD*****
    - Exhibit symptoms of inattentiveness, hyperactivity, and impulsivity in 2 environments for > 6 months
    - Must be present < 12 yo, assess by poor performance in class
    - Behavioral rating scale by teachers
    - Tx: amphetamines, methylphenidate, atomoxetine
        - Decreases appetite, weight loss
    - Stimulant intoxication tx: lorazepam

- **Tourrette's syndrome**
  - 2 motor and 1 vocal tics present daily > 1 year and onset < 18 yo
  - Comorbid with OCD or ADHD
  - Tx: Aripiprazole, risperidone , tetrabenazine, alpha receptor agonists
- **Persistent motor tic disorder**
  - > 1 year of either motor or vocal tic disorder
- **Oppositional Defiant Disorder**
  - 4 symptoms for > 6 months
    - Losses temper
    - Disobedient
    - Defies authority, trouble with law
    - Anger and resentment
    - Easily annoyed and angered
    - Annoys others on purpose
    - Spiteful, vindictive, does not accept blame
  - Tx: parent management training
- **Conduct Disorder**
  - < 18 yo in legal trouble for violating the law, aggression, destruction and harm to others
  - Develop antisocial pe
  - Tx: multisystemic therapy, probate court
- **Substance abuse**
  - Teens with nonspecific sudden behavioral changes = drug abuse
  - Get urine toxicology
- **Wilson disease**
  - Neuropsychiatric symptoms, liver problems
  - Parkinsonism, tremor, hallucinations
- **Fetal alcohol syndrome**
  - Thin upper lip, narrow philtrum, palmar creases, temper tantrums
- **Acute psychotic episode**
  - Hyperpyrexia > 103
  - Antihistamine, alpha adrenergic agents, dextromethorphan (NMDA antagonist)
- **Enuresis/ bed wetting**
  - > 5
  - <5 reassurance

Eating disorders

- **Anorexia nervosa**
  - BMI < 18.5 with hypothermia, bradycardia, hypotension, amenorrhea, electrolyte abnormality, endocrine abnormality, leukopenia,
    - Hypokalemia
    - Hypochloremia
    - High bicarb
    - Metabolic acidosis
    - High LFTs
    - High amylase
    - High cortisol
    - Low estrogen, low LH/ FSH
    - Low bone mineral density
  - Complications: osteoporosis, amenorrhea, lanugo, constipation, enlarged parotids, arrhythmias and suicide risk

    - Tx: weight restoration (oral), fluoxetine, CBT, hospitalization if hemodynamically unstable
    - Increased vulnerability in certain vocations (ballet, wrestling)
- **Bulimia nervosa**
    - Average BMI with recurrent binge eating episodes, purging
    - Non-anion gap metabolic alkalosis with respiratory compensation
    - Calluses on hands, enlarged parotid glands
    - **Hypokaemia, hypochloremic**, hyponatremia, hypomagnesemia
    - High bicarbonate
    - High amylase
    - Tx: SSRI
        - Do not give buspirone!

Electrolyte and Acid-Base Changes Associated With Self-Induced Emesis In Bulimia Nervosa		
Laboratory	**Urine**	**Serum**
Potassium	↑	↓
Sodium	↓	↓/↑/normal
Chloride	↓	↓
Bicarbonate	--	↑
pH	↓	↑

- **Binge-eating disorder**
    - Recurrent episodes of binge eating, no compensatory behaviors
    - Eating fast, eating until uncomfortably full, eating when not hungry, eating alone due to embarrassment, feeling disgusted/ depressed/ guilty
    - Tx: CBT/ psychotherapy, weight loss therapy, lisdexamfetamine
        - Lisdexamfetamine has risk of abuse bc its a stimulant

Eating disorders		
Diagnosis	**Clinical features**	**Treatment**
Anorexia nervosa	• **BMI <18.5 kg/m^2** • Intense fear of weight gain • Distorted views of body weight & shape	• Cognitive-behavioral therapy • Nutritional rehabilitation • **Olanzapine** if no response to first-line treatments
Bulimia nervosa	• Recurrent episodes of binge eating • Binge eating and **inappropriate compensatory behavior** to prevent weight gain • Excessive worrying about body shape & weight	• Cognitive-behavioral therapy • Nutritional rehabilitation • **SSRI (fluoxetine)**, often in combination with first-line treatments
Binge eating disorder	• Recurrent episodes of binge eating • **No inappropriate compensatory behaviors** • Lack of control during eating	• Cognitive-behavioral therapy • Behavioral weight loss therapy • SSRI • Lisdexamfetamine, topiramate

Comparison of Eating Disorders				
Characteristic	**Anorexia Nervosa**	**Bulimia Nervosa**	**Binge Eating Disorder**	**ARFID**
Significantly low body weight or failure to gain weight as expected	Yes	No	No	Yes
Persistent restriction of caloric intake	Yes	No	No	Yes
Desire for thinness	Yes	Yes	No	No
Excessive concern about body weight/image	Yes	Yes	No	No
Disturbance in perception of body weight/image	Yes	Yes	No	No
Presence of binge eating behaviors	Possibly*	Yes	Yes	No
Presence of compensatory behaviors†	Possibly	Yes	No	No

Geriatric Psychiatry

- **Depression-related cognitive impairment**

    - Psychotherapy and antidepressants
    - Use MOCA to test memory and cognition < 26 is abnormal
- **Post-stroke depression**
    - Increased risk of depression in strokes
- **Dementia/ neurocognitive disorders**
    - **Medications** can cause abrupt onset memory impairment
    - **Pseudodementia**
        - Reversible recurrent decline due to MDD
    - **Major neurocognitive disorder**
        - Impaired functioning (getting lost, dressing bathing ,eating and operating appliances)
            - Global cognitive decline, impairment in > 3 areas. Function, psychiatric, neurological
        - Mini-mental status exam < 23 suggests of dementia, but not specific
            - Affected by level of education
            - Not a requirement for legal consent
    - **Vascular dementia**
        - Stepwise progression of dementia
        - CT shows multiple infarcts
        - Damage to cognition, abrupt decline in functioning, apathy
    - **Alzheimers**
        - Early short term memory loss, language deficits, later personality change
        - NMDA receptor antagonist: Memantamine
    - **Lewy Body dementia**
        - Waxing and waning, hallucinations, parkinson's features
        - Visual hallucinations, REM sleep behavior disorder, parkinsonism
        - Severe sensitivity to antipsychotics (dopamine antagonists)
    - **Frontotemporal dementia**
        - Pick disease, disinhibited behavior, hypersexual, personality change early onset
        - Rapid change in personality , loss of execute function, hoarding
    - **Parkinson's Disease**
        - Asymmetric motor symptoms, hallucinations with dopamine agonist (Pramipexole)
            - Next steps: reduce dose levodopa, pramipexole) when psychotic PD develops
        - Memory loss: Amantadine (dopamine agonist)
        - COMT inhibitors (entacapone) sustain levodopa levels
        - Quetiapine is used for parkinson's psychosis
        - MAO-B inhibitors (selegiline)
        - Risperidone can cause parkinson like features and rigidity
        - Drug-induced: **MPTP**, most drugs

Table 2. Differentiating Clinical Features: 4 Types of Dementia

Features	FTD	AD	VD	LBD
Presenile or senile onset	Presenile	Senile	Senile	Senile
Symptom onset	Insidious	Insidious	Variable Stepwise progression	Insidious
Cognitive features	Executive dysfunction	Memory decline Executive dysfunction	Executive dysfunction Memory decline	Memory decline Visuospatial deficits Executive dysfunction
Motor symptoms	Parkinsonian and ALS symptoms in some cases	Rare Apraxia in severe stages	Variable, depending on location of lesions	Parkinsonian symptoms occurring along with, or within 1 year of, cognitive symptoms
Progression	6-8 years	8-10 years	3-5 years	6-8 years

- **Anticholinergic toxicity**
  - Acute onset delirium and psychosis with autonomic symptoms (urinary retention, decreased bowels)
  - Belladonna ingestion
  - TCAs (doxepin) → check **ECG**
  - Tx: supportive, charcoal, benzos, physostigmine

Common agents with anticholinergic properties	
Antihistamines	• Diphenhydramine, cyproheptadine, doxylamine
Psychotropics	• 1st generation: haloperidol • 2nd generation: clozapine • TCAs: amitriptyline, clomipramine, doxepin
Antiparkinson	• Benztropine, trihexyphenidyl
Antimuscarinics	• Ipratropium (bronchodilator) • Oxybutynin, darifenacin (overactive bladder) • Dicyclomine, hyoscyamine (antispasmodics) • Scopolamine (antiemetic)
Mydriatics	• Atropine, cyclopentolate
Plant-based	• Muscarinic mushroom species • Jimson weed • Nightshade species

Anticholinergic toxicity	
Etiology	• Overdose or combination of anticholinergic agents(s) • Competitive inhibition of muscarinic ACh receptors in CNS, ciliary body, heart, smooth muscle, secretory glands
Clinical features	• Agitation, delirium, hallucinations, seizures • Mydriasis, blurry vision • Tachycardia • Urinary retention, ↓ bowel sounds • Dry & flushed skin, dry mucous membranes, hyperthermia
Diagnosis	• Based on clinical findings, no confirmatory laboratory tests
Treatment	• Supportive care • Activated charcoal (awake patients <2 hr of ingestion) • Benzodiazepines for agitation & seizures • Physostigmine for severe central & peripheral symptoms

Clinical features & management of tricyclic antidepressant overdose		
Clinical presentation	**CNS**	• Mental status changes (eg, drowsiness, delirium, coma) • Seizures, respiratory depression
	Cardiovascular	• Sinus tachycardia, hypotension • Prolonged PR/QRS/QT intervals • Arrhythmias (eg, ventricular tachycardia, fibrillation)
	Anticholinergic	• Dry mouth, blurred vision, dilated pupils • Urinary retention, flushing, hyperthermia
Management	**Supportive care & therapy**	• Supplemental oxygen, intubation • Intravenous fluids • Activated charcoal for patients within 2 hours of ingestion (unless ileus present) • Intravenous sodium bicarbonate for QRS interval widening or ventricular arrhythmia

t

- **Delirium**
  - Due to underlying medical condition (UTI, anticholinergics), drugs
  - Waxing and waning Disturbance of consciousness, attention, mood and behavior
- **Creutzfeldt Jakob disease**
  - Rapid progression of dementia, personality change, and death in 1 year
  - Widespread atrophy, cortical enhancement, positive 14-3-3 proteins
  - EEG: triphasic synchronous discharges
- **Normal pressure hydrocephalus**
  - Urinary incontinence, unsteady gait, dementia
  - CT shows enlarged ventricles → large volume lumbar puncture/ shunt placement
  - Gait dysfunction, upper motor neuron signs (hyperreflexia, babinski sign, spasticity)
- **Pseudotumor cerebri**
  - Fat forty female
  - Tx: acetazolamide
- **Charles bonnet syndrome**
  - Vision loss in elderly leading to visual hallucinations to fill in the blanks
- **Restless leg syndrome**
  - Dysesthesia- crawling or itching feelings, urge to move legs at rest, relieved by movement
    - Tx: pramipexole (D agonist), alpha 2 delta calcium channel ligands (gabapentin), Ropinirole
    - Can cause hallucinations

Restless legs syndrome	
Clinical features	Uncomfortable urge to move legs with: • Unpleasant sensations in the legs • Onset with inactivity or at night • Relief with movement (eg, walking, stretching)
Associated secondary causes	• Iron deficiency anemia • Uremia (ESRD, CKD) • Diabetes mellitus • Multiple sclerosis, Parkinson disease • Pregnancy • Drugs (eg, antidepressants, metoclopramide)
Treatment	• Supplement iron when serum ferritin ≤75 µg/L **Mild/intermittent symptoms:** • Use supportive measures (eg, leg massage, heating pads, exercise) • Avoid aggravating factors (eg, sleep deprivation, medications) **Persistent/moderate to severe symptoms:** • Dopamine agonists (eg, pramipexole) • α2δ calcium channel ligands (eg, gabapentin)

- Tremors
    - **Essential**: worse with action and anxiety
    - **Medication-induced**: lithium enhanced physiologic tremor (fine, symmetric action tremor)
    - Psychogenic tremor: inconsistent, improve with distraction
    - Physiologic: dose dependent and symmetrical
    - Functional tremor: abrupt onset, decreased with distraction, changeable features

Tremor	Clinical features
Essential	• Action tremor • Bilateral hands &/or head • Improves with alcohol
Parkinson disease	• Resting tremor (decreases with movement) • Hands & legs • "Pill-rolling" • Associated parkinsonian features (eg, rigidity, masked faces, wide-based gait)
Cerebellar	• Action tremor (increases as hand reaches target) • Associated ataxia, dysmetria, or gait disorder
Physiologic	• Action & rest tremor • Low amplitude, high frequency (ie, "fine" tremor) • Not visible under normal circumstances • Enhanced with sympathetic activation (eg, anxiety, caffeine, hyperthyroidism)

Pediatric Psychiatry

- Pediatric Depression

Pediatric Depression	
Diagnostic Criteria	**Treatment**
• ≥ 5 "SIGECAPS" symptoms (must include depressed mood/irritability or loss of interest) ◦ **S**leep disturbances ◦ **I**nterest loss ◦ **G**uilt/worthlessness ◦ **E**nergy loss ◦ **C**oncentration problems ◦ **A**ppetite/weight change ◦ **P**sychomotor agitation/retardation ◦ **S**uicidal thoughts • Symptoms persist for ≥ 2 weeks • Symptoms must cause significant distress and/or impairment • Symptoms must not be better explained or caused by another disorder, illness, or substance • No history of manic/hypomanic episodes	• First-line medication ◦ Fluoxetine • Second-line medication ◦ Citalopram ◦ Escitalopram ◦ Sertraline ◦ Venlafaxine • Third-line medication ◦ Bupropion ◦ Duloxetine • Ineffective/discouraged ◦ Paroxetine ◦ Tricyclics • Psychotherapy and exercise

Sleep disorders

- **Delayed sleep-wake phase disorder**
  - Sleep-onset insomnia (cannot fall asleep “night owls”) and morning sleepiness

- **Advanced sleep-wake phase disorder**
    - Cannot stay awake in the evening, wake up early
- **Sleep terrors**
    - Kids have nightmares with little recall, cannot be awakened.
    - Tx: reassurance → low dose benzo if it persists. Most kids outgrow it
- **Chronic fatigue syndrome**
    - Excess fatigue not alleviated by rest, somatic complaints (HA, muscle/ joint aches, low-grade fever
- **Circadian rhythm sleep disorder**
    - Cannot sleep at night, sleep during daytime
- **Narcolepsy**
    - Short REM sleep latency, cataplexy, hypnagogic hallucinations, sleep paralysis
        - Mouth open and head tilted
- **Primary hypersomnia**
    - Excess daytime sleepiness with adequate sleep
    - Sleep-drunk: confusion, disorientation, clumsiness
- **REM sleep behavior disorder**
    - Not paralyzed during REM, act out dreams
    - parkinsons

Neuro

- Psychogenic nonepileptic seizures
    - Asynchronous thrashing, head turning and pelvic thrusting, no loss of consciousness or postictal state
        - Dx: video electroencephalogram
        - Tx: CBT

Cardiovascular

- QT prolongation
    - Electrolyte abnormality
        - Hypocalcemia
        - Hypokalemia
        - Hypomagnesemia
    - Medication
        - Opioids
        - TCAs
        - Antipsychotics
        - SSRIs

Medications

- **SSRIs**
    - Treat just about everything -- depression, anxiety, OCD
    - Take 4-6 weeks to take effect
        - Early adverse effects of SSRI (anxiety, insomnia) improve with time, If severe sensitive effects, temporary dose reduction
    - Sexual side effects

    - Serotonin syndrome (myoclonus, ANS instability) due to SSRI + TCA/ MAOi
        - Tx: **cyproheptadine**, benzodiazepine
    - SSRI withdrawal syndrome if treatment stopped abruptly
        - Paroxetine: teratogenic, weight gain
        - **Fluoxetine: short t ½,** no need to taper → **hyperhidrosis**
        - Sertraline: serotonin syndrome
        - Citalopram: fewest interactions
        - Fluvoxamine: only SSRI for OCD
        - Escitalopram
- **SNRI**
    - Inhibits 5HT and NE
    - Discontinuation syndrome: flu-like symptoms
    - Venlafaxine: avoid in hypertensive patients and St. John's wort
    - Duloxetine
- **TCAs**
    - Inhibits 5HT, H1, NE, alpha 1
    - Anticholinergic side effects & delirium = coma, convulsions, cardiotoxicity
        - Tx: sodium bicarbonate
    - Causes QT prolongation. Stop treatment if QT > 0.44 → obtain ECG
    - Treats fibromyalgia, chronic pain, depression
        - Clomipramine: most effective for OCD, most seratonergic
        -

Clinical features & management of tricyclic antidepressant overdose		
Clinical presentation	**CNS**	• Mental status changes (eg, drowsiness, delirium, coma) • Seizures, respiratory depression
	Cardiovascular	• Sinus tachycardia, hypotension • Prolonged PR/QRS/QT intervals • Arrhythmias (eg, ventricular tachycardia, fibrillation)
	Anticholinergic	• Dry mouth, blurred vision, dilated pupils • Urinary retention, flushing, hyperthermia
Management	**Supportive care & therapy**	• Supplemental oxygen, intubation • Intravenous fluids • Activated charcoal for patients within 2 hours of ingestion (unless ileus present) • Intravenous sodium bicarbonate for QRS interval widening or ventricular arrhythmia

- **MAO inhibitors**
    - Increases 5HT, NE Epi, Dopamine, tyramine in synapses
    - Hypertensive crisis

    - Serotonin syndrome
- **Atypical Antidepressants**
    - **Bupropion** (inhibits NE and dopamine uptake)
        - Good for smoking cessation, depression
        - Contraindicated in bulimia, epilepsy and alcohol withdrawal
        - Counteracts weight gain or sexual dysfunction
    - Mirtazapine (Rimeron) (inhibits 5HT2A, 2C, alpha 2 antagonist, H1 antagonist)
        - Good for skinny ladies with depression, helps with sleep, increases appetite
        - Helps cause weight gain, no effect on HTN
    - Trazodone (blocks alpha 1 and 5HT2)
        - Good for insomnia
        - Causes priapism
- Benzodiazepine
    - Potentiates GABA Cl channel opening
    - Used for mania, agitation, withdrawal from substance
        - Alcoholic liver: Lorazepam, oxazepam, temazepam
        - Shorter acting have high addiction potential
        - Overdose: tx is flumazenil
- Hypnotics
    - Zolpidem: acts on GABA-a receptor to improve sleep
        - Early morning awakenings
    - Melatonin
        - Mediates circadian rhythm
    - Prazosin
        - PTSD traumatic nightmares
- **Antipsychotics**
    - Quetiapine: Anxiety and paranoia, bipolar
    - **Risperidone**
        - Can cause akathisia, restlessness, inability to sit still
        - Blocks dopamine, hyperprolactinemia
        - Gynecomastia, galactorrhea, menstrual dysfunction, decreased libido
    - Clozapine
        - Causes insulin resistance, metabolic syndrome, **agranulocytosis** / **neutropenia**
            - Next best step with resistant schizophrenia

First generation	Second generation
Haloperidol **-EPS** **Fluphenazine** **Risperidone** Paliperidone -	• **Clozapine (Clozaril) - metabolic syndrome, agranulocytosis** • **Risperidone (Risperdal)- prolactin** **Olanzapine-metabolic syndrome** - Avoid in obese and diabetics

Chlorpromazine Perphenazine Thioridazine	• **Ziprasidone (Geodon)- weight neutral** - Best for ob • **Quetiapine (Seroquel) - orthostatic hypotension** • **Aripiprazole (Abilify)- weight neutral, akathisia** • **Paliperidone (Invega)** • **Lurasidone (Latuda)** • **Asenapine (Saphris)** • **Iloperidone (Fanapt)**

- **Lithium**
  - Watch renal function
  - Causes nephrogenic diabetes insipidus
    - Tx: amiloride
  - Causes hyperparathyroidism → hypercalcemia
  - Hypothyroidism
  - Avoid things that cause dehydration, alcohol, hypertensive drugs that act in the kidney
  - Lithium toxicity: n/v, AMS, seizure, fasciculations
    - Tx: hemodialysis

Lithium toxicity	
Etiology	Acute toxicity • Intentional overdose Chronic toxicity • Decreased renal perfusion (↓ lithium clearance) ◦ Dehydration ◦ Thiazide diuretics, NSAIDs, ACE inhibitors
Clinical features	Acute toxicity • Gastrointestinal: nausea, vomiting, diarrhea • Late neurologic sequelae Chronic toxicity (neurologic) • Lethargy, confusion, agitation • Ataxia, tremor/fasciculations, seizure
Treatment	• Intravenous hydration • Hemodialysis (severe cases)

- Mood stabilizers/ anticonvulsants
  - **Lamotrigine**: used for bipolar depression
    - Causes SJS/ TEN
  - **Topiramate**: migraine prophylaxis and weight loss
  - **Carbamazepine:** agranulocytosis/ aplastic anemia, induces CYP450
  - **Valproic acid:** mood, seizure and migraine
    - Causes sedation, hepatotoxicity, weight gain, hair loss
    - Causes drug-induced liver injury

Therapy

Modality	Primary indications	Features
Cognitive-behavioral therapy	• Depression • Generalized anxiety disorder • PTSD • Panic disorder • OCD • Eating disorders • Negative thought patterns	• Combines cognitive & behavioral therapy • Challenges maladaptive cognitions • Targets avoidance with behavioral techniques (relaxation, exposure, behavior modification)
Interpersonal psychotherapy	• Depression	• Links symptoms to current relationship conflicts & interpersonal skill deficits
Supportive psychotherapy	• Lower functioning; psychotic disorders • Patients in crisis	• Maintains hope; provides encouragement • Reinforces coping skills, adaptive defenses
Psychodynamic psychotherapy	• Higher functioning • Personality disorders	• Builds insight into unconscious conflicts & past relationships • Uses transference • Breaks down maladaptive defenses
Motivational interviewing	• Substance use disorders	• Nonjudgmental; acknowledges ambivalence & resistance • Enhances intrinsic motivation to change
Dialectical behavioral therapy	• Borderline personality disorder	• Improves emotion regulation, distress tolerance, mindfulness • Decreases self harm; builds skills
Biofeedback	• Prominent physical symptoms; pain disorders	• Improves control over physiological reactions to emotional stressors

How to Know Whether Psychotic Symptoms Are Schizoaffective or Bipolar-Related

Because psychotic symptoms can underlie a diagnosis of either bipolar or schizoaffective disorder, it's important to take note of *when the psychotic symptoms occur*, *for how long they occur, and when they go away—if at all.* These criteria, when considered together, probably hold the most sway in distinguishing schizoaffective from bipolar disorder.

With bipolar disorder, psychotic symptoms can manifest when you're depressed or when you're manic. A key difference is that these symptoms tend to occur only when a person is having that mood episode, and once that mood episode has been controlled with the help of medication, the psychotic symptoms dissipate. For example, you can be manic for seven days, during which time you can be convinced you're a celebrity, but once you get treatment and the episode remits, those delusions of grandeur will pass.

In contrast, with schizoaffective disorder, the psychotic symptoms can occur seemingly out of the blue, are unattached to mood changes, and must occur for at least two weeks in order to be diagnosed as schizoaffective. (That said, you can also have a two-week period of schizoaffective psychosis that precedes an episode of depression.)