LEARNING OBJECTIVES

- Recognize the clinical features of various psychiatric clinical presentations (e.g. psychosis, hypo/mania, depression, anxiety, substance use, school problems, eating disordered behavior, cognitive impairment, sleep issues, sexual issues, somatic symptoms, etc)
    - Describe the components of a mental status exam
- Apply the biopsychosocial model towards building a differential diagnosis and management plan for the following psychiatric clinical presentations and disorders
    - Psychotic disorders
    - Bipolar and related disorders
    - Depressive disorders
    - Anxiety and related disorders
    - Substance use disorders
    - School and learning problems
    - Eating disorders
    - Cognitive impairment
    - Sleep-wake disorders
    - Sexual disorders
    - Somatic symptom and related disorders
    - Personality disorders
- Understand how to assess and manage a patient with safety concerns (i.e. suicidal ideation, self-harm ideation, homicidal ideation, abuse)
- Be aware of how to navigate various medico-legal and ethical issues (e.g. consent and capacity, confidentiality)

TEACHING SCHEDULE

- Session #1 = general approach to the psychiatric patient, MSE, biopsychosocial model, differential diagnosis and key clinical features of major psychiatric disorders (psychosis, mood, anxiety and related disorders, substance use disorders, pediatric presentations, cognitive impairment, personality disorders, sleep-wake disorders, sexual disorders, somatic symptom and related disorders)
- Session #2 = investigations and management of major psychiatric disorders, safety issues, consent/capacity, confidentiality
- Session #3 = pharmacotherapy and related issues, misc psychiatric issues
- Session #4 = Psych MCQ exam
- Session #5 = review Psych MCQ exam

GENERAL APPROACH TO THE PSYCHIATRIC PATIENT

- The general approach to a psychiatric patient is similar to any other medical patient (collecting subjective and objective information, creating differential diagnosis and management plan) with the following additional considerations:
    1. Because patients may lack insight towards their own illnesses, it is important to obtain collateral information (e.g. from charts, friends/family, etc.)
    2. Objective information is also collected with a mental status exam (MSE)
    3. The biopsychosocial model is applied towards the entire process, especially when creating your differential diagnosis and management plan

MENTAL STATUS EXAM (MSE)

- The MSE is your objective assessment of the patient's mental state (ie cognition, perception, thinking, feelings, and behavior)

Components of mental status exam

- Appearance = description of what patient looks like
- Behavior = description of what the patient is doing throughout the interview, including any psychomotor retardation/agitation and movement abnormalities
- Cooperation = patient's willingness to participate in interview
- Reliability = accuracy of subjective information provided by patient
- Speech = spontaneity, rate, volume, and rhythm of what the patient is saying
- Mood = patient's subjective description of their emotional state
- Affect = objective description of the patient's emotional state, including their tone (main emotional state), range (capacity to express a variety of emotions), congruence with stated mood and context, intensity, and lability (how quickly patient shifts from one emotional state to the next))
- Perceptual disturbances, which include
    - Hallucinations (sensory perceptions in the absence of external stimuli) vs illusions (misperceptions of real external stimuli)
    - Dissociation ie depersonalization (feeling disconnected from one's own body) vs derealization (feeling disconnected from external environment)
- Thought process (aka thought form) = how the patient flows from one topic to another; from least to most severe:
    - Linear/goal-directed (patient directly answers question; variant of normal)
    - Circumstantial (includes unnecessary details but ultimately answers your question directly; variant of normal, can be seen in anxious patients)
    - Tangential (type of thought disorder where flow of ideas are connected but ultimately does not answer question)
    - Flight of ideas (similar to tangential thought form but patient shifts more rapidly and frequently between thoughts/ideas that are marginally connected eg by double meaning, rhyming, etc; commonly associated with mania)
        - Clang association (type of thought disorder where patient connects topics based on similar sounds)

    - Disorganized/loose associations (type of thought disorder where no meaningful connection exists between topics; commonly associated with psychosis)
        - Thought blocking (sudden involuntary stopping of thought and speech, where patient is often not aware of same)
        - Word salad (severe form of loose association to the point patient loses proper sentence structure)
- Thought content = description of what the patient is saying, including
    - Suicidal ideation, self-harm, and homicidal ideation
    - Delusions (fixed false beliefs that are held firmly despite indisputable evidence to the contrary and deviates markedly from cultural/religious norms; most common delusion is persecutory delusion (paranoia)) vs ideation (subthreshold delusions)
    - Obsessions (recurrent and persistent thoughts/images/urges that was once viewed as intrusive/unwanted and causes marked anxiety/distress in most individuals, that leads to individual attempting to ignore/suppress these thoughts/images/urges or neutralize them with a thought/action (ie compulsion))
- Insight = patient's level of self-awareness about their own illness/situation
- Judgment = patient's ability to make rational/reasonable decisions based on relevant facts
- Cognition = description of patient's thinking abilities, which can include commenting on patient's level of consciousness, orientation, attention, intelligence level, and other cognitive functions (memory, executive function, visuospatial function, language, etc)

Mnemonics to memorize the components of mental status exam

- "ASEPTIC" = **A**ppearance and behavior (and cooperation/reliability), **S**peech, **E**motions (mood and affect), **P**erceptions, **T**hought process and content, **I**nsight and judgment, **C**ognition
- "ABC STAMP LICKER" **=** **A**ppearance, **B**ehavior, **C**ooperation, **S**peech, **T**hought process and content, **A**ffect, **M**ood, **P**erception, **L**evel of consciousness, **I**nsight, **C**ognition, **K**nowledge fund/base, **E**ndings (suicidal, homicidal), **R**eliability

BIOPSYCHOSOCIAL MODEL

- The biopsychosocial model is a holistic view of understanding a patient's illness and organizing their differential diagnosis and management plan by considering a combination of biological (e.g. genetics, neurochemical imbalance), psychological (e.g. temperament, personality, beliefs), and social (e.g. cultural, socioeconomic status, etc.) factors
- The differential diagnosis of any psychiatric clinical presentation (e.g. psychosis, mania, depression, anxiety, etc.) can be organized using a diagnostic hierarchy, where causes are ruled out first in the following order:
    1. Medical (i.e. secondary) causes, including
        - Substance/medication-induced mental disorder
        - Mental disorder due to another medical condition
    2. Primary psychiatric disorders, to be ruled out in the following order:
        a. Primary psychotic disorders (schizophrenia, schizophreniform disorder, brief psychotic disorder, schizoaffective disorder, delusional disorder)

b. Primary bipolar and related disorders (bipolar I disorder, bipolar II disorder, cyclothymic disorder)
c. Primary depressive disorders (major depressive disorder, persistent depressive disorder, premenstrual dysphoric disorder, disruptive mood dysregulation disorder)
d. Primary anxiety and related disorders (generalized anxiety disorder, social anxiety disorder, panic disorder, agoraphobia, specific phobia, obsessive compulsive disorder, post-traumatic stress disorder, separation anxiety disorder, selective mutism, body dysmorphic disorder, trichotillomania, hoarding disorder, acute stress disorder)
e. Other primary psychiatric disorders & personality disorders
f. Adjustment disorder

★ Note that all primary psychiatric disorders must
1. Not be better explained by a medical cause AND
2. Cause clinically significant distress or functional impairment

3. Normal

- Use the biopsychosocial approach to formulate your management plan
  - Remember safety first! Consider admission if this patient is high risk for suicide/homicide or is unable to be managed properly in the community (e.g. due to lack of insight)
  - Biological treatments, including
    - Ordering relevant investigations to rule out medical causes and for baseline/follow-up investigations for medications
    - If secondary cause = treating underlying medical conditions and removing offending medications/substances
    - If primary cause = adding psychotropic medications +/- adding other biological therapies (e.g. ECT, light therapy)
  - Psychosocial treatments include psychoeducation (teaching the patient/family about their illness), psychotherapy (i.e. counselling), social work (e.g. for financial/legal/housing assistance)

SAFETY ISSUES

SUICIDAL IDEATION (SI)

- Suicidal ideation = wish to die prematurely
  vs parasuicidal ideation (aka self-harm ideation) = wish to harm self without intent to die
- Suicidal ideation is a common complication that can be seen with any mental disorder and thus has a broad differential diagnosis
- High risk suicidal ideation = clear plan and intent, access to weapons, limited future orientation, no protective factors, previous suicide attempts
  vs low risk suicidal ideation = no plan or intent, future orientation present, strong protective factors, no previous suicide attempts
- SAD PERSONS is a popular rating scale to assess a patient's suicide risk, but does NOT replace clinical judgment
  - Sex (1 point if male)
    Age (1 point if < 20 or > 44)
    Depression (1 point if present)
    Previous attempt (1 point if present)
    Ethanol abuse (1 point if present)
    Rational thinking, loss of (1 point if present)
    Social supports, poor (1 point if present)
    Organized plan (1 point if present and lethal)
    No spouse (1 point if divorced, widowed, separated, or single)
    Sickness (1 point if chronic, debilitating, and severe
  - Scoring (out of 10)
    - 0-2 = d/c with follow-up
    - 3-4 = close f/u; consider hospitalization
    - 5-6 = strongly consider hospitalization, depending on confidence in f/u arrangement
    - 7+ = hospitalize
- Management of suicidal ideation
  - +/- Hospitalize if high risk
  - Create a safety plan with patient and safety proof home (e.g. remove access to weapons)
  - Treat underlying cause of suicidal ideation
  - Clear documentation

HOMICIDAL IDEATION (HI)

- High risk homicidal ideation = clear target, clear plan, high intent, access to weapons, limited protective factors, prior history of violence (#1 risk factor)
  vs low risk homicidal ideation = no clear target, no plan, no intent, no access to weapons, strong protective factors, no prior history of violence
- Management of homicidal ideation
  - +/- Hospitalize if high risk and certifiable
  - Secure access to firearms
  - +/- Notify intended targets and/or police if high risk
  - Treat underlying cause of homicidal ideation
  - Clear documentation

- Landmark legal cases
    - For Canada = Smith v Jones gave MDs permission to break confidentiality in cases of high risk homicidal ideation
    - For USA
        - Tarasoff I = mandated MDs a legal "duty to warn" intended victims of homicidal ideation
        - Tarasoff II = replaced "duty to warn" with "duty to protect" intended victims of homicidal ideation (e.g. via warning victims, notifying police, hospitalizing patient, and/or securing firearms)

AGITATION

- Agitation is an episodic state of intense anxiety, arousal, and psychomotor and verbal activity causing behavioral disturbances and patient's ability to interact with their environment in a meaningful way
- Is considered a behavioral psychiatric emergency
- Management
    - #1 = Ensure everyone's safety, from least to most invasive method first
        - Non-pharmacological (verbal de-escalation, etc)
        - Pharmacological PO > IV/IM (individual dose classically lorazepam 0.5-2 mg + haloperidol 2-5 mg PO/IV/IM q 4 hrs prn severe agitation)
        - Room seclusion
        - Mechanical restraints
    - #2 = Assess and treat underlying cause

ABUSE

- Abuse is the "act or omission which results in harm or threatened harm to the health or welfare" of another person
- Types of abuse include
    - Physical (intentional infliction of physical discomfort, pain, and/or injury)
    - Emotional (intentional infliction of mental anguish or propagation of fear/isolation)
    - Neglect (failure provide for physical/medical/educational needs of dependents)
    - Sexual (non-consensual sexual activity)
    - Financial (misuse of funds or possessions)
- Red flags for abuse
    - Inconsistent story (e.g. inappropriate MOA of injury, vague/inconsistent answers)
    - Caregiver delaying or inconsistent with care of dependent
    - Abnormal or change in behavior (e.g. unexplained regression of behavior, inappropriate sexual behavior in child, development of new fears, somatic complaints, unexplained change in mood)
    - Suspicious bruises (e.g. multiple of various ages, resembling shape of objects, abnormal location i.e. inner/core body parts)
    - Suspicions burns (sharp demarcations, resembling shape of objects, zebra pattern, doughnut pattern)
    - STI in child, enlarged anus, vaginal tears
- Investigations for suspected abuse
    - **Careful history and physical exam**

        - Collect info from victim, caregiver, other related personnel separately and from previous healthcare records; minimize # of interviews; ask open ended questions (not misleading questions)
    - **CBC, INR, PTT**
    - U/A
    - STI testing
    - Pregnancy tests
    - **Skeletal survey**
    - **Referral to ophthalmologist** (look for retinal hemorrhage)
- General management of abuse
    - Treat medical conditions prn
    - Document as much as possible (ideally with quotations)
    - Report and refer prn
        - Legally mandatory for everyone to report suspected cases of child abuse and their updates to Child and Family Services
        - Social worker
        - Police (e.g. for restraining orders, pressing charges)
    - Develop emergency safety plan w/ patient (e.g. info on safe houses, what to collect when you leave)
    - Typical management of PTSD and related disorders

CONFIDENTIALITY

- Confidentiality is the clinician's obligation to not share patient information to third parties
- Exceptions to maintaining confidentiality include serious risk of harming self/others, suspicion of child abuse, and if court subpoenas clinical reports

SUBSTANCE USE DISORDERS

- Common comorbidity seen with most mental disorders
- Types of recreational substances
    - CNS depressants ("downers") = alcohol, opioids, benzodiazepines, barbiturates, cannabis (is considered a hybrid between CNS depressant and hallucinogen)
    - Stimulants ("uppers") = cocaine, crack, crystal meth, PCP
    - Hallucinogens = mushrooms, MDMA (Ecstasy), LSD, cannabis
- Key clinical features = "4 C's of addiction" over the past year
    - Cravings to use
    - Compulsions to use
    - Use despite negative Consequences (on health, relationships, employment, legal, etc)
    - Loss of Control on amount/frequency of use
- Patient must be abstinent from offending substance for $\geq$ 1 month before you can properly rule out a substance-induced mental disorder
    - Primary treatment for substance-induced mental disorders is to discontinue the offending substance; may not need psychotropic medications
    - If there is true comorbid substance use disorder and other psychiatric illness, take concurrent disorders approach (treat both at the same time)
- Stages of change (not necessarily a linear path from precontemplation to relapse)
    - Precontemplation (denial of problem)
    - Contemplation (aware of problem and ambivalent desire to change)
    - Preparation (intending to take action)
    - Action (practicing the desired behavior)
    - Maintenance (works to sustain the behavioral change)
    - Relapse (return to problematic behavior)

MANAGEMENT OF SUBSTANCE USE DISORDERS

- Rule out acute medical situation (i.e. substance intoxication or withdrawal)
- Safety/triage
    - Admit if high risk SI/HI or requires acute medical treatment (e.g. severe withdrawal from CNS depressant requiring medical treatment, substance-induced psychosis or mania)
    - Refer to Addiction Services
    - Precontemplation stage of change = motivational interviewing (Socratic-like questioning style to progress patient along the next stages of change)
    - Contemplation and beyond stage of change = biopsychosocial(spiritual)
- Bio
    - +/- medications for specific substance use disorders to decrease use / manage cravings
        - Tobacco = nicotine replacement therapy, varenicline (Champix), Wellbutrin (bupropion)
        - Alcohol = naltrexone, disulfiram (aka Antabuse), acamprosate, gabapentin, pregabalin, topiramate, varenicline
        - Opioid = methadone, suboxone (buprenorphine + naloxone)
    - Harm reduction principles (e.g. needle exchange program, safe injection sites, routine screening for infectious diseases)

- Psychosocial
    - Motivational interviewing
    - Urge surging through mindfulness and distress tolerance skills
    - Strength-based approach (commending patient for successes)

PSYCHOSIS

WHAT IS PSYCHOSIS?

- Psychosis = gross impairment of reality testing characterized by hallucinations, delusions, disorganized speech, and/or grossly disorganized or catatonic behavior

MAIN TYPES OF PRIMARY PSYCHOTIC DISORDERS

- Schizophrenia = continuous psychotic symptoms (ie prodromal, active, and/or residual symptoms of psychosis) for at least 6 months, which includes at least 2/5 of the following psychotic symptoms x 1 month (1 symptom must be either hallucinations, delusions, or disorganized speech):
    - Delusions
    - Hallucinations
    - Disorganized speech
    - Grossly disorganized or catatonic behavior
    - Negative symptoms (e.g. flat affect, avolition, poverty of speech)
- Brief psychotic episode = similar to schizophrenia but duration $\geq$ 1 day but < 1 mo
- Schizophreniform disorder = similar to schizophrenia but duration $\geq$ 1 mo but < 6 mo
- Delusional disorder = isolated delusions for at least 1 mo (ie no other psychotic symptoms)
- Schizoaffective disorder = 2+ weeks isolated psychotic symptoms + mood episode present for majority of duration of psychotic illness

DIFFERENTIAL DIAGNOSIS OF PSYCHOSIS

Medical causes (secondary psychosis)

- Most common medical cause: Substance-induced psychotic disorder (e.g. hallucinogens, stimulant intoxication, CNS depressant withdrawal)
- Medication-induced psychotic disorder (e.g. Rx stimulants, dextromethorphan, dopamine agonists (e.g. L-dopa), exogenous steroid use (e.g. corticosteroids), thyroid hormones)
- Psychotic disorder due to another medical condition e.g.
    - CNS causes (e.g. epilepsy, stroke, encephalitis, subdural hematoma, multiple sclerosis, delirium, brain tumor, Parkinson's disease, Huntington's disease, Wilson disease, dementia)
    - Endocrine causes (e.g. thyroid dysfunction, parathyroid dysfunction, hyper/hypoglycemia causing delirium, Cushing disease)
    - Nutritional deficiencies (e.g. thiamine (vitamin B1), vitamin B12, niacin (vitamin B3))
    - Systemic lupus erythematosus

Psychiatric causes (primary psychosis)

- Primary psychotic disorders
- Primary mood disorder with psychotic features
- Primary anxiety and related disorders
- Autism spectrum disorder, intellectual disability
- Major neurocognitive disorder with behavioral disturbance

- Cluster A and borderline personality disorder
- Malingering / factitious disorder

Normal

RED FLAGS FOR SECONDARY PSYCHOSIS

- Late age of onset
- Sub/acute onset
- Non-auditory hallucinations
- Abnormal vitals
- Decreased LOC
- Suspicion of intracranial pathology eg
    - Focal neurological deficits
    - Recent significant head trauma
    - New and severe or worsening headache
    - Nausea & vomiting
    - Unexplained seizures

INVESTIGATIONS FOR UNDIFFERENTIATED PSYCHOSIS

- Physical exam including complete neurological exam
- Urine drug screen
- CBC
- Metabolic profile i.e. Cr, lytes, glucose, liver function tests
- Measurement of parathyroid hormone, calcium, +/- Mg
- Thyroid function tests, vitamin B12, folate, niacin
- Height, weight, BMI, vitals, lipid panel, hemoglobin A1C or fasting glucose, ECG
- +/- beta-Hcg
- +/- HIV testing, +/- syphilis testing, +/- Hep B+C, +/- ESR, +/- antinuclear antibody testing
- +/- neuroimaging (CT or MRI) if red flags for neurological cause i.e.
    - Later age of onset
    - Rapid progression of working memory deficits within 3 mo
    - Focal neurological deficits
    - Recent significant head trauma
    - New, severe, unremitting headache
    - Nausea & vomiting
    - Unexplained seizures
- +/- EEG

MANAGEMENT OF SCHIZOPHRENIA

- Safety/triage = generally require admission for acute psychotic episodes and if high risk SI/HI
- ***Bio (mainstay of treatment)
    - Antipsychotics
        - 1st line = atypical antipsychotics > typical
        - Gold standard treatment for treatment-resistant schizophrenia (fail 2+ antipsychotics) = clozapine

        - Duration of antipsychotic treatment
            - 1 episode = 1-2 yrs
            - 2+ episodes = 5 yrs or indefinitely
    - Treat comorbid substance use disorders
- Psycho = psychoeducation for pt and family, CBT
- Social = housing/financial assistance prn, social skills training, vocational training, etc.

ANTIPSYCHOTICS

TYPICAL ANTIPSYCHOTICS

- Includes 1st generation antipsychotics (e.g. haloperidol, chlorpromazine)
- MOA = dopamine (specifically D2) antagonist
- Side effects
    - Extrapyramidal symptoms (EPS)
        - Akathisia (motor restlessness)
        - Parkinsonism (tremor, cogwheel rigidity, bradykinesia, postural/gait instability)
        - Acute dystonia (e.g. tongue/jaw rigidity, torticollis, oculogyric crisis)
        - Tardive dyskinesia (seen with chronic typical antipsychotic use involving involuntary choreoathetoid movements)
    - Hyperprolactinemia (sexual dysfunction, amenorrhea, galactorrhea, gynecomastia)
    - Worsening negative symptoms
    - Orthostatic hypotension
    - Sedation
    - Anticholinergic side effects
    - Prolonged QTc
    - Neuroleptic malignant syndrome
- Management of EPS
    - #1 = Decrease dose of antipsychotic
    - #2 = Change to lower-risk antipsychotic (e.g. atypical antipsychotic)
    - #3 = If EPS severe = medications
        - Acute dystonia or parkinsonism = 1st line is benztropine (anticholinergic agent)
        - Akathisia = 1st line is beta blockers; 2nd line is benzodiazepines
        - Tardive dyskinesia = benzodiazepines or tetrabenazine (may be irreversible)

ATYPICAL ANTIPSYCHOTICS

- Includes 2nd generation antipsychotics (e.g. clozapine, quetiapine, olanzapine, risperidone, paliperidone, lurasidone) and 3rd generation antipsychotics (e.g. aripiprazole)
- MOA
    - 2nd generation antipsychotics = dopamine (D2) antagonist and serotonin (specifically 5HT2) antagonist (which indirectly increases dopamine in certain dopamine pathways to improve negative symptoms)
    - 3rd generation antipsychotics = partial D2 agonist

- Side effects
    - Similar to typical antipsychotics but with less extrapyramidal symptoms (EPS), but risperidone is the most "atypical" like antipsychotic of the typical antipsychotics
    - Most notably metabolic side effects (weight gain, dyslipidemia, diabetes)
    - Clozapine has unique side effect profile including risk of agranulocytosis, seizures, myocarditis, cardiomyopathy and thus requires close monitoring

NEUROLEPTIC MALIGNANT SYNDROME

- Key clinical features include ingestion of (classically typical) antipsychotics and onset of lead pipe rigidity, elevated CK, hyperthermia, autonomic instability, and delirium
- Management (is a medical emergency) includes discontinuing antipsychotic, supportive treatment (fluids, cooling blanket), +/- dantrolene (muscle relaxant) or bromocriptine (dopamine agonist)

MOOD DISORDERS

WHAT ARE MOOD EPISODES?

Mood episodes (ie major depressive episode, manic episode, hypomanic episodes) are syndromes of specific mood symptoms but are not diagnoses in themselves! Rather, different combinations of mood episodes +/- other psychiatric symptoms create different psychiatric diagnoses.

- Major depressive episode (MDE) = 2+ week period of 5+/9 "SIGMECAPS" criteria (1 symptom must either low mood or anhedonia)
    - **S** = altered sleep, either increased (hypersomnia) or decreased (insomnia)
    - **I** = loss of interest/pleasure in previous activities (anhedonia) most of the day, nearly every day
    - **G** = feelings of excessive guilt or worthlessness
    - **M** = low mood most of the day, nearly every day (may be irritable in pediatrics)
    - **E** = low energy
    - **C** = poor concentration
    - **A** = change in appetite and/or weight, either increased or decreased
    - **P** = psychomotor retardation or agitation
    - **S** = suicidal ideation
    - ★ Key differentiating features between MDE and normal bereavement (grief) are
        - Predominate feelings of emptiness/loss in normal bereavement vs predominate feelings of depressed mood/inability to anticipate happiness/pleasure in MDE
        - Ability to still experience positive emotions/humor in normal bereavement vs inability in MDE
        - Low mood that occurs in waves ("pangs of grief") triggered by thoughts/reminders of loss and improve (decreases in intensity) over time in normal bereavement vs depressive symptoms that are persistently low and not associated with any particular thought in MDE
        - Preoccupation about loss with intact self-esteem (excluding guilt directly related to loss e.g. not telling how much they loved lost one) in normal bereavement vs self-critical/pessimistic rumination w/ feelings of worthlessness/self-loathing in MDE
        - Thoughts of death/dying directly related to deceased (e.g. wanting to join deceased) in normal bereavement vs thoughts of death/dying due to feeling worthless/undeserving of life/inability to cope with pains of depression in MDE
- Manic episode = 1+ week (or shorter if hospitalized) of abnormally elevated, irritable, or expansive mood with abnormally increased energy/goal-directed activity, accompanied with 3+/7 (4+/7 if irritable mood) "DIGFAST" criteria
    - **D** = distractibility
    - **I** = impulsivity in high-risk activities
    - **G** = grandiosity or inflated self-esteem
    - **F** = flight of ideas or racing thoughts
    - **A** = increased goal-oriented activity or psychomotor agitation
    - **S** = decreased need for sleep (very common symptom of manic episodes)
    - **T** = increased talkativeness

- Hypomanic episode = similar to manic episode except minimum 4 day duration that does not require hospitalization, severe impairment in functioning, or psychotic symptoms
- Mixed episode = meeting criteria for manic episode + major depressive episode (except for duration criteria) at the same time

MAIN TYPES OF PRIMARY MOOD DISORDERS

Primary bipolar and related disorders

- Bipolar I disorder = manic episode +/- major depressive episode +/- hypomanic episode
- Bipolar II disorder = hypomanic episode + major depressive episode with no manic episode
- Cyclothymic disorder = 2+ yr (1 yr if pediatric) history of subthreshold hypomanic and depressive symptoms not meeting criteria for hypomania and MDE, with no euthymic period lasting longer than 2 months

Primary depressive disorders

- Major depressive disorder = major depressive episode(s) with no hypo/manic episodes
    - ★ The specifier "with psychotic features" can be added to major depressive disorder or bipolar disorder if the mood disorder is accompanied with psychotic features that are only present when a mood episode is present
    - ★ The specifier "with anxious distress" can be added to major depressive disorder if the major depressive episode is accompanied with anxiety that does not meet criteria for a primary anxiety disorder
- Persistent depressive disorder (aka dysthymia) = "rule of 2" i.e.
    - **2**+ years (1 year if pediatric) of depressed mood
    - with no euthymic period lasting longer than **2** months
    - accompanied by **2**+ related depressive symptoms (hopelessness, poor concentration, poor appetite, poor sleep, poor energy, poor self-esteem)
- Premenstrual dysphoric disorder = mood symptoms that occur within the final week before onset of menses, for the majority of menstrual cycles over the past year
- Disruptive mood dysregulation disorder = 12+ mo of severe temper outbursts occurring ≥ 3x/week with persistently irritable/angry mood in between, first diagnosed at 6-18 yo

DIFFERENTIAL DIAGNOSIS OF MANIA

Medical causes

- Substance-induced bipolar and related disorder (e.g. stimulants, LSD)
- Medication-induced bipolar and related disorder (e.g. Rx stimulants, antidepressants, corticosteroids, thyroid medications, dopamine agonists)
- Bipolar and related disorder due to another medical condition (e.g. CNS, hyperthyroidism, vitamin B12 deficiency, systemic lupus erythematosus)

Psychiatric causes

- Primary psychotic disorders (e.g. featuring grandiosity, schizoaffective disorder)
- Primary bipolar and related disorders
- Primary depressive disorder (featuring irritability)

- Primary anxiety and related disorders
- ADHD
- Substance use disorders
- Oppositional defiant disorder, conduct disorder
- Major neurocognitive disorder with behavioral disturbance
- Cluster B personality disorders
- Adjustment disorder

Normal

DIFFERENTIAL DIAGNOSIS OF DEPRESSION

Medical causes

- Substance-induced depressive disorder (e.g. alcohol; cannabis; stimulant withdrawal)
- Medication-induced depressive disorder (e.g. corticosteroids, oral contraceptives)
- Depressive disorder due to another medical condition (e.g. CNS, hypoactive delirium, hypothyroidism, hyperparathyroidism, Cushing's, adrenal insufficiency, diabetes, HIV, mononucleosis, hepatitis, cancer, anemia, vitamin B12 deficiency, systemic lupus erythematosus)

Psychiatric causes

- Primary psychotic disorders (e.g. negative symptoms, delusions of guilt, schizoaffective disorder)
- Primary bipolar and related disorders
- Primary depressive disorders
- Primary anxiety and related disorders
- ADHD
- Major neurocognitive disorder with behavioral disturbance
- Primary eating disorders
- Primary sexual disorders
- Primary sleep-wake disorders
- Cluster B and C personality disorders
- Adjustment disorder

Normal (e.g. normal bereavement)

INVESTIGATIONS FOR UNDIFFERENTIATED MANIA

- Urine drug screen
- CBC
- Cr, electrolytes, Ca
- Liver enzymes
- TSH
- Lipid panel, fasting glucose, ECG
- Pregnancy test

INVESTIGATIONS FOR UNDIFFERENTIATED DEPRESSION

- +/- Urine drug screen, EtOH

- CBC
- Cr, electrolytes
- Liver enzymes
- TSH
- Pregnancy test

MANAGEMENT OF BIPOLAR I DISORDER

- Safety/triage = hospitalize if severe SI/HI, severe self-neglect, or acute manic episode
- ***Bio (mainstay of treatment)
  - 1st line for acute mania, acute MDE, and maintenance treatment = atypical antipsychotics and/or mood stabilizer
  - Generally avoid antidepressant monotherapy for bipolar depression (but if must use, should use in combination with atypical antipsychotic or mood stabilizer)
  - Avoid divalproex in women of childbearing age, especially during pregnancy, if possible due to high risk of neural tube defects → atypical antipsychotics and lithium are the preferred choice during pregnancy as relatively smaller risk of teratogenicity
    - Avoid lithium while breastfeeding as up to 50% of lithium is passed into breastmilk → atypical antipsychotics and anticonvulsants are the preferred choice while breastfeeding
- Psycho
  - Acute mania = no evidence for psychosocial interventions during this time
  - Acute bipolar MDE = CBT
  - Maintenance treatment = 1st line is psychoeducation
- Social = family therapy, vocational rehabilitation, social skills training, reduce stressors

MOOD STABILIZERS

- Mood stabilizers are a class of medications classically used to treat bipolar disorder, which include lithium and certain anticonvulsants (e.g. divalproex, carbamazepine, lamotrigine)

<u>LITHIUM</u>

- Unknown MOA; not metabolized but excreted by kidneys as lithium is a type of metal
- Side effects
  - Common = sedation, tremor, hypothyroidism, weight gain, GI upset, polydipsia/polyuria, hypercalcemia
  - Serious = lithium toxicity, renal toxicity (nephrogenic diabetes insipidus, chronic tubulointerstitial nephropathy), teratogenic effects (Ebstein's anomaly), arrhythmias
- Narrow therapeutic range that requires monitoring of trough serum drug levels (i.e. measured 5 days from last dosage change and ~12 hrs from last dose)
  - Target lithium level = 0.8-1.2 mEq/L (for acute mania/MDE) or 0.6-1 mEq/L (for maintenance treatment)
- Lithium toxicity occurs at plasma level $\geq$ 1.5 mEq/L (lethal level $\geq$ 2.5 mEq/L)
  - Be wary of factors that could influence plasma lithium level e.g.
    - Kidney disease increase plasma lithium levels

        - Medications influence renal clearance (e.g. NSAIDs, diuretics (especially thiazide diuretics), ACEi, calcium channel blockers increase plasma lithium levels)
        - Pregnancy decrease plasma lithium levels
    - Clinical features of lithium toxicity
        - Altered LOC (lethargy/excitement → delirium → death)
        - Coarse tremor, ataxia, hyperactive deep tendon reflexes → general convulsions
        - Dizziness → syncope
        - Cardiovascular changes → circulatory failure (BP drop, arrhythmias)
        - GI symptoms (nausea, vomiting, diarrhea)
        - Renal dysfunction → renal failure
    - Management of lithium toxicity (is a medical emergency)
        - Discontinue lithium
        - Fluid resuscitation
        - Consult poison control regarding detoxification (e.g. with sodium polystyrene sulfonate, polyethylene glycol, or gastric lavage; hemodialysis indicated if plasma lithium level > ~4 mEq/L)

<u>ANTICONVULSANTS</u>

- Divalproex
    - MOA = increases GABA and blocks sodium channels
    - Especially helpful for mania w/ mixed features or rapid cycling
    - Side effects include sedation, weight gain, GI upset, elevated liver enzymes (hepatitis rare), pancreatitis (rare), blood dyscrasias, alopecia, teratogenesis (neural tube defects), polycystic ovarian syndrome
- Carbamazepine
    - MOA = blocks sodium channels
    - Side effects include GI, sedation, blood dyscrasias, Steven-Johnson syndrome, toxic epidermal necrolysis, hepatitis, teratogenesis

MANAGEMENT OF MAJOR DEPRESSIVE DISORDER

Depends on severity of MDD

- Mild MDD
    - 1st line = psychosocial interventions
    - 2nd line = add pharmacological measures
- Moderate to severe MDD → 1st line is combo therapy (i.e. antidepressants + psychosocial interventions +/- neurostimulation)

Biopsychosocial model

- Safety/triage = admit if severe SI or severe self-neglect
- Bio
    - 1st line = antidepressants
        - 1st line antidepressants = SSRIs, SNRIs, mirtazapine, bupropion

        - Follow-up in 2-4 weeks after starting new antidepressant regime to look for signs & symptoms of early improvement (>20-30% improvement from baseline in depression rating scale e.g. PHQ-9)
        - Early improvement seen by week 2-4 is correlated with response/remission at week 6-12 → after achieving remission, should continue antidepressant maintenance treatment for 6-9 mo (1st MDE) or 2+ yrs if risk factors for relapse (e.g. severe/treatment-resistant MDE, frequent episodes, chronic MDD, geriatric MDD, strong family history)
        - If inadequate response (i.e. <50% improvement in symptoms) to antidepressant by week 2-4:
            - #1 = check for med compliance, drug-drug-interactions, comorbid substance use
            - #2 = optimize therapeutic dose of 1st line agent if tolerable
            - #3 = re-evaluate diagnosis (bipolar commonly misdiagnosed)
            - #4 = switch to different antidepressant (especially if non-response (<25% improvement) to 1st med trial or intolerable side effects) OR add adjuvant therapy
            - #5 (treatment-resistant depression i.e. fail 2+ antidepressant trials) = adjuvant psychotherapy or neurostimulation
    - Last line = neurostimulation (treatments involving the delivery of electric (e.g. electroconvulsive therapy (ECT)) or magnetic (e.g. repetitive transcranial magnetic stimulation (rTMS)) stimuli to targeted areas of the brain)
        - Indications for ECT for MDD
            - Treatment-refractory (failed 4+ meds)
            - Severe MDD requiring rapid response (i.e. MDD with psychotic features, MDD with severe motor symptoms (e.g. catatonia), severe suicidal ideation, refusal of PO intake)
    - Others = Light therapy if seasonal component
- Psycho
    - Psychoeducation (patient education on illness)
    - Behavioral activation (increasing patient's participation in meaningful activities and non-depressive behaviors)
    - Psychotherapy (1st line = cognitive behavioral therapy (CBT) or interpersonal therapy)
- Social = reduce stressors, optimize social support (eg group)

ANTIDEPRESSANTS

<u>SELECTIVE SEROTONERGIC REUPTAKE INHIBITORS (SSRIs)</u>

- E.g. citalopram, escitalopram, fluoxetine, paroxetine, sertraline, fluvoxamine
- MOA = blocks serotonin reuptake pump to increase amount of serotonin in synaptic cleft
- Generally well tolerated
    - Common side effects include headaches, GI upset, fatigue/sedation, behavioral activation, weight gain, sexual dysfunction

  - Serious side effects include increased SI < 24 yo, serotonin syndrome if overdose, prolonged QTc, switch into mania, discontinuation syndrome, hyponatremia (i.e. SIADH), bleeding (especially if combine with NSAIDs), fractures, falls

SEROTONIN AND NOREPINEPHRINE REUPTAKE INHIBITORS (SNRIs)

- E.g. venlafaxine, desvenlafaxine, duloxetine
- MOA = blocks serotonin and norepinephrine reuptake pumps to increase amount of serotonin and norepinephrine in synaptic cleft
- Has additional indications for chronic pain
- Generally well tolerated with similar side effect profile as SSRIs, but can also cause hypertension and seizures (rare) from increasing norepinephrine

TRICYCLIC ANTIDEPRESSANTS (TCAs)

- Suffix -pramine (e.g. clomipramine, imipramine) or -triptyline (e.g. nortriptyline, amitriptyline)
- MOA can be thought of as a "dirty SNRI" (blocks serotonin and norepinephrine reuptake as well as various other neurotransmitters)
- Has additional indications for chronic pain
- Similar side effects to SNRIs but more problematic side effects as TCAs also affect various other neurotransmitters
  - Anticholinergic side effects (e.g. dry mouth, tachycardia, urinary retention, constipation, cognitive impairment) from blocking cholinergic receptors
  - Sedation and weight gain from blocking histamine receptor
  - Orthostatic hypotension from blocking alpha 1 receptors
  - Highly lethal in overdose as risk QTc prolongation and Torsades de Pointes

MONOAMINE OXIDASE INHIBITORS (MAOIs)

- E.g. moclobemide (reversible), phenelzine (irreversible), tranylcypromine (irreversible)
- MOA = inhibits monoamine oxidase, an enzyme involved in the metabolism of monoamines (i.e. serotonin, norepinephrine, dopamine)
- Similar side effect to SNRIs but increased risk of hypertensive crisis if patient takes MAOI with tyramine rich food (e.g. red wine, aged cheese, cured meats, etc.) → therefore medication requires tyramine diet restriction
  - MAOIs can cause build-up of tyramine (which ultimately converts into epinephrine) as monoamine oxidase enzyme normally metabolizes tyramine

OTHER ANTIDEPRESSANTS

- Bupropion is a norepinephrine dopamine reuptake inhibitor (NDRI), but contraindicated in asthma and seizure patients (can increase seizure threshold)
- Mirtazapine is an alpha receptor antagonist, with notable side effects of weight gain and sedation

SEROTONIN SYNDROME

- Toxidrome of excess serotonergic activity

- Key clinical features
    - Quick onset and offset of symptoms i.e. within 24 hrs of ingestion of serotonergic agent (e.g. TCA overdose; serotonergic agent (SSRI, SNRI, Demerol, Tramadol, St John's wort) during or within 2 weeks of MAOI, MDMA (Ecstasy) combined with serotonergic drugs)
    - Classic triad of altered mental status, autonomic instability, and neuromuscular excitation (e.g. hyperreflexia, clonus, tremor, hypertonia, muscle rigidity, seizure)
        - Hyperreflexia including clonus is a must have to meet diagnostic criteria for serotonin syndrome
    - Early signs and symptoms include diarrhea and akathisia (restlessness)
    - Late signs and symptoms include hyperthermia, seizures, delirium
- Management includes discontinuing serotonergic agents, supportive treatment (ABCs; intubate if temp > 41.1°C), benzodiazepines (for mild hypertension/tachycardia, agitation, and neuromuscular excitation), +/- cyproheptadine (serotonergic antagonist) if supportive care and benzodiazepines ineffective for agitation and vitals

CATATONIA

- Catatonia is a neuropsychiatric syndrome characterized by aLOC and characteristic psychomotor findings (e.g. stupor, mutism, negativism, abnormal posturing, agitation, stereotypic movements, mannerisms, grimacing, echolalia, echopraxia)
- Underlying causes include medical causes (e.g. delirium), severe mood disorder, severe psychotic disorder
- Management
    - Break catatonia with benzodiazepines (1st line) or ECT (if fail benzos)
    - Treat underlying cause
    - Supportive treatment (as patients may have poor PO intake, self-care, immobility)

ANXIETY AND RELATED DISORDERS

MAIN TYPES OF PRIMARY ANXIETY AND RELATED DISORDERS

- Generalized anxiety disorder (GAD) = 6+ mo of excessive anxiety of generalized nature, accompanied with 3+/6 (1+/6 if pediatric) of "SCREAM" criteria
    - **S** = poor sleep
    - **C** = poor concentration
    - **R** = restlessness or feeling on edge
    - **E** = poor energy
    - **A** = anger/irritability
    - **M** = muscle tension
- Social anxiety disorder (SAD; aka social phobia) = 6+ months of excessive fear of being negatively judged by others with avoidance of social situations
- Panic disorder = recurrent untriggered panic attacks, with 1 month of the following: excessive fear of having another panic attack OR maladaptive change in behavior related to panic attacks
- Agoraphobia = 6+ months of excessive fear of being in certain environments (outside of home alone, open/enclosed spaces, public transportation, standing in crowds/lines) for fear that escape might be difficult or help not available in the event of developing panic-like or embarrassing symptoms
- Specific phobia = 6+ months of excessive fear about a specific object/situation with avoidance of same (or enduring object/situation with intense fear/anxiety), not better explained by other anxiety disorders
- Separation anxiety disorder = 6+ months (4 weeks if pediatrics) of developmentally inappropriate and excessive fear of being separated from an attachment figure
- Selective mutism = 1+ month of consistent failure to speak in specific social situations not better explained by language barrier, lack of knowledge, communication disorder, psychosis
- Post-traumatic stress disorder (PTSD) = 1+ month meeting "TRAUMA" criteria
    - **T** = exposure to traumatic event (death/near death, serious injury, sexual violence)
    - **R** = re-experiencing symptoms of traumatic event (e.g. flashbacks, nightmares, marked psychological/physical reactions to stimuli related to event)
    - **A** = avoidance of stimuli associated with traumatic event
    - **U** = unable to function
    - **M** = 2+ mood or cognitive symptoms since the traumatic event (negative emotional state, anhedonia, inability to experience positive emotions, social withdrawal, exaggerated negative beliefs about self/others/world, inappropriate blame of self/others for cause of event, inability to remember part of trauma)
    - **A** = 2+ (hyper)arousal symptoms since the traumatic event (hypervigilance, exaggerated startle response, poor concentration/sleep, reckless behavior, anger)
- Acute stress disorder = similar to PTSD but duration 3+ days to < 1 mo
- Adjustment disorder = emotional or behavioral symptoms (e.g. low mood, anxiety, acting out) due to clear stressor(s) and
    - Occurring within 3 months of onset of stressor
    - Do not persist more than 6 mo after stressor or its consequences have terminated
    - Not better explained by other primary psychiatric disorders

- Obsessive-compulsive disorder (OCD) = presence of obsessions (defined above) and/or compulsions (repetitive behaviors/mental acts done in response to an obsession or set of rigid rules, in which the purpose of the act is to prevent/decrease anxiety or a dreaded event but act is either done excessively or not realistically connected to what it is intended to prevent) that are time-consuming (e.g. 1+ hr/day), cause clinically significant distress, or impairment in functioning
- Body dysmorphic disorder = preoccupation with exaggerated perceived flaw in physical appearance and related repetitive behaviors/mental acts
- Hoarding disorder = persistent difficulties discarding items causing clinically significant distress or impairment in functioning
- Trichotillomania = recurrent hair pulling resulting in hair loss despite efforts to stop/decrease
- Excoriation disorder = recurrent skin picking resulting in skin lesions despite efforts to stop/decrease
- ★ The specifier "with panic attacks" can be added most anxiety disorders if panic attacks are present, which is defined as a period of intense fear/discomfort that peaks within minutes, accompanied by various other physical symptoms (e.g. lightheadedness, fear of losing control, fear of dying, derealization, choking sensation, choking sensation, chest discomfort, shortness of breath, palpitations, GI distress, paresthesia, heat/chill sensations, shakiness)

DIFFERENTIAL DIAGNOSIS OF ANXIETY

Medical causes

- Substance-induced anxiety disorder (e.g. caffeine, energy drinks, nicotine, stimulants, cannabis, CNS depressant withdrawal)
- Medication-induced anxiety disorder (e.g. Rx stimulants, corticosteroids, Synthroid, beta2-agonists, epinephrine)
- Anxiety disorder due to another medical condition (e.g. CNS, hyperthyroidism, hypoglycemia, pheochromocytoma, menopause, angina, arrhythmia, acute exacerbation of asthma/COPD, systemic lupus erythematosus)

Psychiatric causes

- Primary psychotic disorder
- MDD with anxious distress
- Primary anxiety and related disorders
- ADHD
- Autism spectrum disorder
- Major neurocognitive disorder
- Eating disorders
- Somatic and related disorders (illness anxiety disorder, somatic symptom disorder)
- Substance use disorders
- Cluster B and C personality disorders
- Adjustment disorder with anxiety

Normal

INVESTIGATIONS FOR ANXIETY

- +/- Urine drug screen
- CBC
- Cr, lytes, glucose
- Liver enzymes
- TSH
- Lipid panel, fasting glucose, ECG
- Beta hCG

MANAGEMENT OF PRIMARY ANXIETY DISORDERS

- 1st line = medications OR psychotherapy (equally efficacious as 1st line)
  2nd line = add or switch to the other treatment modality

Biopsychosocial model

- Safety/triage/legal = admit if severe SI or severe self-neglect
- Bio
  - 1st line = SSRI or SNRI with adjuvant short-term (until onset of efficacy of antidepressant) + regular > prn dosing of benzodiazepine for acute anxiety/agitation
  - 2nd line = other antidepressants, atypical antipsychotics, certain anticonvulsants
    - Gold standard 2nd line treatment for OCD = clomipramine
  - Dosing of medications for anxiety disorders typically start lower, titrate slower, and have a target dose higher compared to doses for depressive disorders
  - Usually get onset of relief by 2-8 weeks and full response by 12+ weeks
- Psychosocial
  - 1st line = cognitive behavioral therapy (CBT) including exposure therapy
    - Can also use EMDR (eye movement desensitization and reprocessing) for PTSD
  - Psychoeducation

BENZODIAZEPINES

- MOA = modulates GABA system by binding onto benzodiazepine receptors
- Suffix -zepam (e.g. lorazepam, clonazepam, diazepam, midazolam, oxazepam, temazepam, alprazolam)
- Side effects
  - Sedation
  - Cognitive impairment
  - Respiratory depression (higher risk if given IV or with other respiratory depressants)
  - Dependency (rare if duration of use < 1 mo)
  - Tolerance (if history of substance use disorder or personality disorder)
- Antidote if benzodiazepine overdose = flumazenil (benzodiazepine antagonist)

UNDIFFERENTIATED SCHOOL DIFFICULTIES

KEY CLINICAL FEATURES OF COMMON PRIMARY PEDIATRIC PSYCHIATRIC DISORDERS

- Attention-deficit/hyperactivity disorder (ADHD) = 6+ month pattern of developmentally inappropriate difficulties with inattention (more common in females) and/or hyperactivity/impulsivity (more common in males) in 2+ more settings and onset prior to 12 yoa
- Autism spectrum disorder = persistent deficits in social communication/interaction and restricted, repetitive patterns of behavior/interests/activities with onset in early developmental period
- Specific learning disorder = persistent difficulties inappropriate for one's age in learning and using academic skills in reading, writing, and/or mathematics that last for at least 6 mo despite appropriate interventions to target these difficulties and onset during school-age years
- Intellectual disability = global cognitive impairment (i.e. intellectual and adaptive functioning deficits) with onset during the developmental period
- Oppositional defiant disorder = 6+ month pattern of angry/irritable mood, argumentative/defiant behaviors towards authority figures, and/or vindictiveness
- Conduct disorder = 12+ month pattern of violating basic rights of others (e.g. aggression, stealing, property destruction) , violating major age-appropriate norms (e.g. skipping school, running away from home) not better explained by antisocial personality disorder if 18+ yo
- ★ These diagnoses are typically diagnosed in the pediatric population, but can also be seen in the adult population

DIFFERENTIAL DIAGNOSIS OF SCHOOL DIFFICULTIES

- #1: Rule out developmental delay,
  vision/hearing impairment,
  medical disorders
- 2: Distinguish if primarily academic and/or primarily behavioral problems
  - If both academic and behavioral difficulties = ADHD
  - If primarily behavioral difficulties
    - Mood disorder
    - Anxiety disorder
    - Oppositional defiant disorder
    - Conduct disorder
    - Autism spectrum disorder
    - Abuse/neglect
  - If primarily academic difficulties = neurodevelopmental disorder
    - Specific learning disorder
    - Intellectual disabilities

INVESTIGATIONS FOR ADHD

- ADHD rating scales by patient and collateral (e.g. SNAP-IV-26, Adult ADHD Symptom Rating Scale)
- Old/current school report cards
- +/- ECG (if suspect heart disease)

MANAGEMENT OF ADHD

- Multimodal approach preferred
  - Psychosocial interventions first line for preschoolers
- Bio = medications (includes stimulants + non-stimulants)
  - 1st line = 1st line agent ie long-acting psychostimulant
  - 2nd line = different class of long-acting psychostimulant
  - 3rd line = 2nd line agent (atomoxetine, guanfacine XR, short/intermediate acting psychostimulants)
- Psycho
  - Psychoeducation
  - CBT, behavioral therapy, cognitive therapy
  - Mindfulness training
  - Parent-training
- Social = educational/occupational accommodations

PSYCHOSTIMULANTS

- MOA psychostimulants = increases dopamine levels in synaptic cleft by blocking dopamine transporter (dopamine reuptake pump)

	Long-Acting Psychostimulants	Intermediate-Acting Psychostimulants	Short-Acting Psychostimulants
Amphetamine-based	Vyvanse (lisdexamfetamine dimesylate) Adderall XR (amphetamine mixed salts)	Dexedrine Spansule (dextro-amphetamine sulphate)	Dexedrine (dextro-amphetamine sulphate)
Methylphenidate-based	Concerta (methylphenidate HCl) Biphentin (methylphenidate HCl) Foquest	Ritalin SR (methylphenidate HCl)	Ritalin (methylphenidate HCl)

- Side effects
  - Common (will typically wear off over 2-3 weeks as you build tolerance) = headache, initial insomnia, decreased appetite, increased HR/BP, worsening dysphoria, increased anxiety, unmask tics
  - Serious = psychosis, mania (hypothetical risk), sudden cardiac death (extremely rare/controversial), decreased height (1-2 cm)
- Contraindications
  - Severe cardiovascular risk
  - Hyperthyroidism
  - Glaucoma

MANAGEMENT OF OPPOSITIONAL DEFIANT DISORDER

- Treatment primarily psychosocial (meds are for tx of comorbidities)
  - Behavioral therapy (reinforce/praise good behavior, ignore/not reinforce undesired behavior)

  - Individual psychotherapy (improve self-esteem and adaptive responses)
  - Family intervention (assessment of family interaction + direct training of parents and child, getting rid of harsh physical and verbal punishment)

MANAGEMENT OF CONDUCT DISORDER

- 1st line = psychosocial (behavioral therapy, social skills training, family therapy/education)
- 2nd line = antipsychotics for aggression

DELIRIUM

KEY CLINICAL FEATURES OF DELIRIUM

- Delirium = (1) and (2) and (3 or 4):
  - Acute onset (hours to days) and fluctuating course
  - Inattention (i.e. hypoalert or hyperalert)
  - Altered level of consciousness (i.e. hypoactive or hyperactive)
  - Disorganized thought process or perceptual disturbance

DIFFERENTIAL DIAGNOSIS FOR DELIRIUM (think "DIMS")

- D = drugs intoxication/withdrawal (e.g. anticholinergics, CNS depressants, recreational drugs)
- I = infections (sepsis, CNS infection, pneumonia, UTI, C. diff, soft tissue infection)
- M = metabolic
  - Endocrine (hypo/hyperglycemia, thyroid, adrenal, parathyroid, pituitary)
  - Renal (electrolytes (Na, Ca, PO4), acid/base, uremia, hypovolemia)
  - Liver (hepatic encephalopathy)
  - Malnutrition (thiamine, vit B12, dehydration, niacin, anemia)
- S = structural insults (e.g. stroke, TBI, acute coronary syndrome, CHF, arrhythmia, hypoxia, GI bleed), seizures
- Other = postoperative, pain, urinary retention, constipation, restraints (physical), immobility, sensory deficits (hearing, sight)

INVESTIGATIONS FOR DELIRIUM

- Vitals, volume status assessment
- +/- urine drug screen, EtOH level, salicylate, acetaminophen
- CBC
- +/- urinalysis, urine culture
- +/- blood culture
- Glucose, chem panel, extended lytes
- +/- CK
- ALT
- TSH, vitamin B12, thiamine
- CXR, ECG, troponin
- +/- echocardiogram
- +/- lumbar puncture if febrile (except if suspect CNS mass)
- +/- neuroimaging, EEG

MANAGEMENT OF DELIRIUM

- #1 priority = treat underlying cause (#1 priority)
- Comfort rounds (frequent orientation, clocks/calendars available, familiar objects/people available, ensure eating/voiding/bowel movements, optimize sleep-wake cycle)

COGNITIVE IMPAIRMENT

KEY CLINICAL FEATURES OF MAJOR AND MILD NEUROCOGNITIVE DISORDER

- Major neurocognitive disorder (old aka dementia) = gradual and significant cognitive decline (e.g. with memory, attention, executive functioning, visuospatial skills, language, social cognition) from one's cognitive baseline resulting in functional impairment; there are many different causes of major neurocognitive disorder, common ones including:
    - #1 overall: Alzheimer's disease = gradual cognitive decline starting with predominantly short-term memory deficits; family history of same common
    - #2 overall: Vascular dementia = stepwise progression of cognitive deficits; cardiovascular risk factors common
    - #2 neurodegenerative cause: Dementia with Lewy Bodies = gradual worsening of persistent and fluctuating cognition, recurrent detailed visual hallucinations, parkinsonism (onset within 1 yr or after onset of cognitive deficits), REM sleep behavior disorders, and/or sensitivity to antipsychotic side effects
    - #2 in patients < 60 yo = Frontotemporal dementia = gradual impairment in behavior (e.g. apathy, disinhibition, compulsive behaviors, dietary changes) and/or language abilities
- Mild neurocognitive disorder (aka mild cognitive impairment (MCI)) = significant cognitive decline but with no functional impairment

DIFFERENTIAL DIAGNOSIS OF COGNITIVE IMPAIRMENT

Medical causes
- Delirium
- CNS (e.g. stroke)
- Hypothyroidism, vitamin B12 deficiency
- Sleep apnea and other sleep-wake disorders

Psychiatric causes
- Depression (old aka pseudodementia)
- Anxiety
- Developmental handicap
- ADHD
- Neurocognitive disorder
    - Mild neurocognitive disorder (old aka mild cognitive impairment (MCI))
    - Major neurocognitive disorder (old aka dementia)

Normal aging

INVESTIGATIONS FOR COGNITIVE IMPAIRMENT

- Cognitive testing + functional testing
- Depression screening
- Bloodwork
    - +/- UDS, heavy metal
    - CBC
    - Chem panel (Cr, lytes, glucose, BUN)
    - Calcium & albumin, +/- PO4, +/- Mg, +/- NH3

    - U/A
    - Liver function tests
    - TSH, vitamin B12, folate
    - HgA1C, lipid panel, BP
    - ESR, RPR/VDR
    - +/- HIV if high risk
- +/- neuroimaging (if atypical presentation i.e.
    - Onset < 60 yo
    - Rapid decline (< 2 mo deterioration, < 2 yr duration)
    - Focal neuro deficits or unexplained CNS symptoms (e.g. urinary incontinence and gait disturbance early in course)
    - Recent and significant head trauma
    - Carcinoma
    - Bleeding disorder or on anticoagulants
- +/- CSF (if onset < 60 yo, rapid progression, suspect infectious/autoimmune/neoplastic etiology)

MANAGEMENT OF MILD NEUROCOGNITIVE DISORDER

- Common-sense prevention measures that promote healthy brain aging but not yet proven to slow progression into dementia (i.e. healthy diet, exercise, sleep, controlling vascular risk factors, mindfulness, cognitive stimulation, social interaction, leisure activities)
- Follow-up (including repeat cognitive testing) q 6 mo

MANAGEMENT OF MAJOR NEUROCOGNITIVE DISORDER

#1: Treat predominant cause of dementia

- Alzheimer's = cholinesterase inhibitors (for mild to severe; e.g. donepezil, rivastigmine, galantamine) and/or NMDA agonist (for moderate to severe; e.g. memantine)
- Vascular dementia = treat cardiovascular risk factors
- Dementia w/ Lewy Bodies = cholinesterase inhibitors
- Frontotemporal dementia = primarily symptomatic tx (meds have limited role)
- Alcohol related dementia = discontinue EtOH + thiamine supplementation

#2: Symptomatic treatment of BPSD (1st line = psychosocial interventions)

#3: Triage/safety/legal, biopsychosocial

- Triage = +/- referral to specialty service, supportive living facilities, community supports
- Safety = admit if high risk SI/HI; screen for elder abuse; remove fire hazards; driving assessment if concerns
- Legal = will, personal directive, enduring power of attorney, +/- capacity assessment
- Bio = remove anticholinergics/CNS depressants +/- add anti-dementia medications
- Psychosocial = refer to Alzheimer's Society, memory aids, psychosocial interventions for behavioral and psychological symptoms of dementia (BPSD)

CAPACITY AND CONSENT

- Capacity is the ability to make decisions based on one’s ability to understand relevant information and the ability to appreciate reasonably foreseeable consequences of a decision
    - Capacity is situation based and determined by a MD vs competence refers to general decision making ability and is determined by a judge

- Criteria needed for patients to demonstrate capacity
    - Ability to have factual understanding of their situation (e.g. patient understands what depression is in general)
    - Appreciation i.e. ability to apply knowledge to their own situation (e.g. patient understands that they themselves have depression)
    - Ability to demonstrate a preference (e.g. patient consistently expresses preference to not take antidepressants)
    - Demonstrate reasoning i.e. ability to use facts in a rational fashion to weigh pros/cons and make a decision (e.g. patient bases decision on facts that side effects outweigh the benefits of antidepressants at this time)
- If a patient does not have capacity, will need an alternative decision maker
    - Personal directive is a legal document where patient is able to appoint an alternative decision maker (called an agent) for non-financial matters
    - Enduring power of attorney is a legal document where patient is able to appoint an alternative decision maker (called the power of attorney) for financial matters
    - In the absence of a personal directive or enduring power of attorney, the Office of Public Guardian and Trustee may appoint someone for non-financial matters (called a public guardian) and/or financial matters (called a trustee)
- Capacity is required to be able to give legal consent
    - Consent is when someone gives permission for something (i.e. treatment) to happen vs assent is when someone who is not able to give legal consent agrees to something
- Components of informed consent ("DTRAP')
    - Diagnosis
    - Treatment, nature of
    - Risks and benefits of treatment
    - Alternatives to treatment
    - Prognosis with and without treatment
- Parental consent for a minor is not required in emergency settings, for mature minors, and emancipated minors
    - Mature minors are individuals that are not legally adults (i.e. < 18 yo) but can legally provide consent, determined on a case-by-case basis by their healthcare practitioner on whether or not they demonstrate capacity for a particular situation
- Consent is not required for treatment of emergency situations (2 MD consent is sufficient instead)

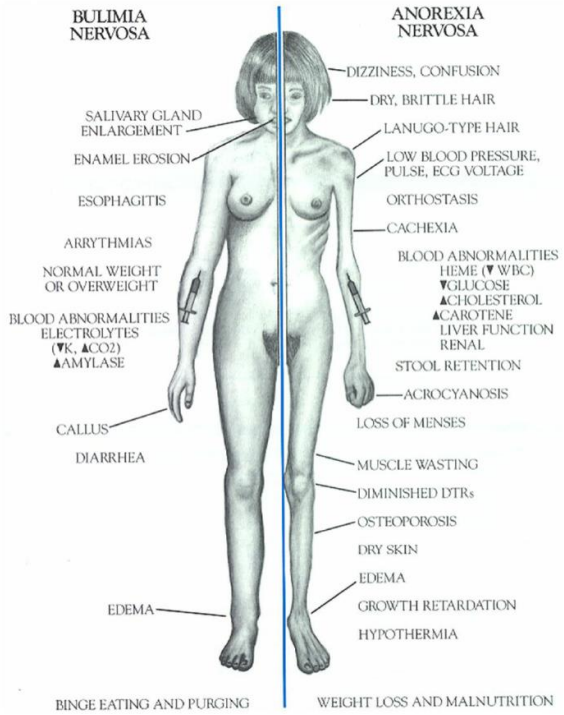
EATING DISORDERS

KEY CLINICAL FEATURES OF PRIMARY EATING DISORDERS

- Anorexia nervosa = restricted intake leading to abnormally low body weight, accompanied with intense fear of gaining weight/becoming fat and disturbance in perception of one's own body weight or shape (e.g. poor insight towards seriousness of low body weight, self-esteem based on body weight/shape) +/- binge eating/purging behaviors
- Bulimia nervosa = 3 month period of recurrent episodes of binge eating and inappropriate compensatory behaviors to prevent weight gain (e.g. self-induced vomiting, abuse of laxatives/diuretics, excessive exercise) without abnormally low body weight

COMPLICATIONS OF EATING DISORDERS

- Vitals (from starvation) = hypothermia / cold intolerance, bradycardia, (orthostatic) hypotension
- Neuropsychiatric (from starvation) = cognitive impairment, emotional changes (e.g. depression, irritability)
- HEENT (from purging) = periorbital petechiae, dental erosions, parotid gland swelling, Russel's sign (excoriation on knuckles from teeth scraping knuckles as put fingers down throat to induce vomiting)
- Cardioresp = arrhythmias (from starved heart / hypokalemia from purging) including prolonged QTc, cardiac arrest
- GI = esophagitis, Mallory-Weiss tear (from purging), impaired rectal tone (from enemas), swallowing difficulties (from extreme weakness from starvation), constipation (from starvation)
- Heme (from starvation as bone marrow shuts down) = anemia, leukopenia
- Nephro = prerenal AKI (dehydration from starvation), electrolyte imbalances (from both starvation / purging; i.e. hypokalemia, hypophosphatemia, hypocalcemia, metabolic alkalosis)
- Endo (from starvation) = low T3 (sick euthyroid syndrome), elevated cholesterol (related to Kreb cycle)
- Reproductive = amenorrhea/oligomenorrhea, decreased LH and/or FSH, infertility, decreased libido (starvation)
  MSK/derm (from starvation) = osteoporosis, lanugo, dry skin and hair



INVESTIGATIONS FOR EATING DISORDERS

- Vitals, height/weight
- CBC
- Cr, electrolytes, glucose
- Extended electrolytes
- ECG, lipid panel
- TSH

MANAGEMENT OF EATING DISORDERS

- Safety/triage = admit if
  - High risk SI/HI
  - Failed outpatient treatment
  - Medical complications i.e. HR < 40, orthostatic changes in BP, temperature < 36, ,85% ideal body weight, kidney/cardiac/GI complications
- Treatment predominately psychosocial = psychotherapy (family-based therapy > Cbt0
- Bio
  - Nutritional rehabilitation (watch for refeeding syndrome)
  - +/- medications (e.g. fluoxetine for bulimia nervosa; olanzapine for anorexia nervosa)

SOMATIC SYMPTOM AND RELATED DISORDERS

MAIN TYPES OF SOMATIC SYMPTOM AND RELATED DISORDERS

- Somatic symptom disorder = 1+ somatic symptoms ≥ 6 mo causing clinically significant distress or functional impairment (e.g. excessive time/energy devoted to these symptoms)
- Conversion disorder = somatic neurological symptom (sensory or motor deficit or seizure) causing clinically significant distress or functional impairment
- Illness anxiety disorder = 6+ mo of excessive anxiety about getting a serious illness
- Factitious disorder = intentionally faking illness in the absence of obvious external rewards

Malingering = intentionally faking illness to obtain external rewards (e.g. housing, meds, etc)

PERSONALITY DISORDERS

MAIN TYPES OF PERSONALITY DISORDERS

A general personality disorder is an enduring pattern of inner experience and behavior (i.e. perception of self/others, affect, impulsivity, interpersonal functioning) that causes clinically significant distress or functional impairment that markedly deviates from the expectations of their culture. This pattern is inflexible, present in various personal/social situations, and over time as it can be traced back to adolescence/early adulthood. It is not better explained by a primary psychotic, mood, or anxiety disorder. There are many different types of personality disorders (divided over 3 clusters), including

- Cluster A ("weird")
    - Paranoid personality disorder = pervasive pattern of distrust and suspiciousness towards others
    - Schizoid personality disorder = pervasive pattern of detachment from social relationships and restricted range of emotional expression
    - Schizotypal personality disorder = pervasive pattern of eccentric behaviors, beliefs, or perceptual distortions and reduced capacity for close relationships
- Cluster B ("wild")
    - Borderline personality disorder = pervasive pattern of instability in affect (mood swings, inappropriate anger, chronic feelings of emptiness), impulsivity (including chronic suicidal ideation/self-harm), cognition (unstable sense of self, dissociation/transient paranoia with stress), and relationships (unstable relationships, frantic efforts to avoid perceived/real abandonment)
    - Antisocial personality disorder = 18+ yo person with pervasive pattern of disregard for and violation of rights of others (e.g. repeatedly breaking law, repeated lying, aggression, irresponsibility, lack of remorse from hurting others) with premorbid conduct disorder
    - Narcissistic personality disorder = pervasive pattern of inflated self-esteem, need for admiration, and lack of empathy
    - Histrionic personality disorder = pervasive pattern of attention seeking behaviors and excessive emotionality
- Cluster C ("wimpy")
    - Obsessive-compulsive personality disorder = pervasive pattern of preoccupation with perfectionism, orderliness, mental/interpersonal control, and inflexibility
    - Avoidant personality disorder = pervasive pattern of social inhibition related to feelings of inadequacy and hypersensitivity to negative judgement from others
    - Dependent personality disorder = pervasive pattern of excessive need to be taken care of others that leads to submissive/clinging behavior and fears of separation

MANAGEMENT OF PERSONALITY DISORDERS

- Management is predominantly psychosocial (medications have limited, if any, role)
- Triage/safety = admit short-term if high-risk SI/HI
- Psychosocial = outpatient psychotherapy, psychoeducation
    - Gold standard treatment for borderline personality disorder = dialectical behavioral therapy (DBT; integrative psychotherapy that combines CBT with mindfulness)

RECOMMENDED READINGS

- Introductory Textbook of Psychiatry by Nancy Andreasen
- Diagnostic and Statistical Manual of Mental Disorders: DSM-5
- https://mcc.ca/objectives/