PSYCHIATRIC DISORDERS IN CHILDHOOD AND ADOLESCENCE

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DISCLOSURE

- No conflicts to disclose

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OVERVIEW

- Attention Deficit Hyperactivity Disorder (ADHD) and Attention Deficit Disorder, Inattentive Type (ADD)
- Mood Disorders
- Anxiety Disorders
- Pediatric Autoimmune Neuropsychiatric Disorders Associated with group A Streptococcus (PANDAS)
- Tic Disorder and Tourette's Disorder
- Conduct Disorder

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ADHD AND ADD

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DSM 5 CRITERIA FOR ADHD

- Hyperactivity and Impulsivity: Six or more symptoms of hyperactivity-impulsivity for children up to age 16, or five or more for adolescents 17 and older and adults; symptoms of hyperactivity-impulsivity have been present for at least 6 months to an extent that is disruptive and inappropriate for the person's developmental level:
- Often fidgets with or taps hands or feet, or squirms in seat.
- Often leaves seat in situations when remaining seated is expected.

American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders(5th edition.Arlington,VA. American Psychiatric Association, 2013.

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DSM 5 CRITERIA FOR ADHD

- Often runs about or climbs in situations where it is not appropriate (adolescents or adults may be limited to feeling restless).
- Often unable to play or take part in leisure activities quietly.
- Is often "on the go" acting as if "driven by a motor".

American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders(5th edition.Arlington,VA. American Psychiatric Association, 2013.

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DSM 5 CRITERIA FOR ADHD

- Often talks excessively.
- Often blurts out an answer before a question has been completed.
- Often has trouble waiting his/her turn.
- Often interrupts or intrudes on others (e.g., butts into conversations or games)

American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders 5th edition Arlington VA, American Psychiatric Association, 2013.

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DSM-5 CRITERIA FOR ADD

- Inattention: Six or more symptoms of inattention for children up to age 16, or five or more for adolescents 17 and older and adults; symptoms of inattention have been present for at least 6 months, and they are inappropriate for developmental level:
- Often fails to give close attention to details or makes careless mistakes in schoolwork, at work, or with other activities.
- Often has trouble holding attention on tasks or play activities.

American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, 5th edition. Arlington VA. American Psychiatric Association, 2013.

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DSM-5 CRITERIA FOR ADD

- Often does not seem to listen when spoken to directly.
- Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (e.g., loses focus, side-tracked).
- Often has trouble organizing tasks and activities.

American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, 5th edition. Arlington VA. American Psychiatric Association, 2013.

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DSM-5 CRITERIA FOR ADD

- Often avoids, dislikes, or is reluctant to do tasks that require mental effort over a long period of time (such as schoolwork or homework).
- Often loses things necessary for tasks and activities (e.g. school materials, pencils, books, tools, wallets, keys, paperwork, eyeglasses, mobile telephones).
- Is often easily distracted
- Is often forgetful in daily activities.

American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, 5th edition. Arlington, VA. American Psychiatric Association, 2013.

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DSM 5 FURTHER CRITERIA

- In addition, the following conditions must be met:
- Several inattentive or hyperactive-impulsive symptoms were present before age 12 years.
- Several symptoms are present in two or more setting, (such as at home, school or work; with friends or relatives; in other activities).
- There is clear evidence that the symptoms interfere with, or reduce the quality of, social, school, or work functioning.
- The symptoms are not better explained by another mental disorder (such as a mood disorder, anxiety disorder, dissociative disorder, or a personality disorder). The symptoms do not happen only during the course of schizophrenia or another psychotic disorder.

American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, 5th edition. Arlington, VA. American Psychiatric Association, 2013.

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DSM 5 FURTHER CRITERIA

- Based on the types of symptoms, three kinds (presentations) of ADHD can occur:
- Combined Presentation: if enough symptoms of both criteria inattention and hyperactivity-impulsivity were present for the past 6 months
- Predominantly Inattentive Presentation: if enough symptoms of inattention, but not hyperactivity-impulsivity, were present for the past six months
- Predominantly Hyperactive-Impulsive Presentation: if enough symptoms of hyperactivity-impulsivity, but not inattention, were present for the past six months.
- Because symptoms can change over time, the presentation may change over time as well.

American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, 5th edition. Arlington, VA. American Psychiatric Association, 2013.

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ADHD CORE SYMPTOMS

- Socially inappropriate behavioral responses to strong emotions, and inability to modulate behavior.
- Difficulty organizing oneself for coordinated action toward an external goal, especially one without significant limbic valence.
- Difficulty with being able to self-soothe the physiological arousal that strong emotion induces.
- Emotional dysregulation due to a relative inability of the prefrontal cortex to modulate limbic stress responses.
- The ability to become hyper-focused during activities with high levels of dopamine release (ex. video games).

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ADHD IS A NEUROLOGICAL DISEASE

- In a prospective magnetic resonance imaging (MRI) study, children and adolescents with ADHD (n=223) exhibited delays in cortical maturation versus typically developing controls (n=223).10 Delays were most prominent in prefrontal regions, which are important for control of cognitive processes, including attention and motor planning.
- A prospective follow-up study, which compared MRI brain scans of adults with ADHD and adults without ADHD (n=59 and n=80, respectively), found that adults with residual ADHD had significantly lower mean surface-wide cortical thickness and regional grey matter density ($p<0.001$) compared with adults without ADHD.

Cortical maturation in patients with and without ADHD. Shaw P et al. Proc Natl Acad Sci U S A 2007;104:19649-19654.10

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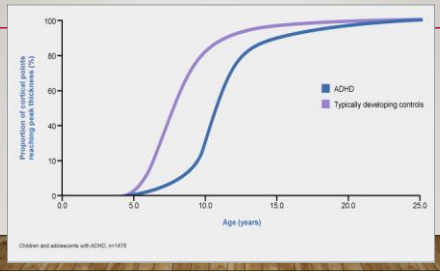
DEVELOPMENTAL DELAY IN ADHD



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REMISSION DATA

- Differs by diagnostic type:
- Inattentive only: 55%-75% (increased risk of depression and anxiety disorders for all patients).
- Hyperactive only: 55%-65% (increased risk of anxiety disorders and substance abuse for non-remitters).
- Combined Inattentive/Hyperactive: 18%-35% (markedly increased risk of substance abuse, increased risk of legal problems/incarceration, increased risk of mood disorders-esp. bipolar disorder).

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PRESCRIBING PEARLS

- Although initial effects may be seen early, medication may take weeks for full effect. Avoid too rapid titration of doses.
- Individual patients may respond differently to immediate release vs extended release stimulants.
- Patients may be sensitive to stimulant blood level decline at the end of the dose. Symptoms may include agitation, excessive hyperactivity, excessive appetite, heightened emotional responses.
- Patients may respond better to one type of stimulant over the others, even those with a very similar structure.
- Patients on extended release preparations may require an afternoon dose of immediate release medication to boost stimulant blood levels for homework. Always use the lowest possible dose in this case to avoid sleep disturbance.
- Many patients do better with medication "holidays" when it is not absolutely required to allow for appetite bounce back.

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MORE PRESCRIBING PEARLS

- First line treatment for ADHD: stimulant of choice.
- Second line treatment: different mechanism of action stimulant or non-stimulant.
- Third line treatment: Combination of stimulant and non-stimulant.
- For anorexia: consider Cyproheptadine 4 mg QD to TID.
- For insomnia: consider Clonidine or Melatonin 1 mg.
- For aggression: consider Divalproex 20 mg/kg/D, Guanfacine 1 mg BID, or Oxcarbazepine 150 mg BID. Monitor drug level, liver function tests, CBC (Divalproex) and serum sodium level (Oxcarbazepine).

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PSYCHOTHERAPY OPTIONS

- Behavioral therapy: Can be used to attempt to change negative behaviors into positive ones. It often involves using a rewards system at home (token economy).
- Cognitive behavioral therapy (CBT): Targets addressing thoughts, feelings and behavior with specific goals such as replacing negative thoughts with ones that are more realistic and positive or helping to build self-esteem, which tends to be negatively affected by ADHD.
- Social skills groups: This may help children learn and practice important skills for interacting with others.

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SCHOOL AND HOMEWORK OPTIONS

- Sit the child closer to the teacher.
- Consider smaller class sizes.
- Break up work in to smaller tasks with built in breaks.
- Consider an Individualized Education Plan (IEP): An IEP is a better option for students with a disability that is adversely impacting education. Students who need more than just accommodations to regular education would need an IEP.
- Consider a 504 plan: A 504 Plan is a better option when the student is able to function well in a regular education environment with accommodations. The 504 is generally less restrictive than the IEP, and it is also less stigmatizing.

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MOOD DISORDERS

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MAJOR DEPRESSION DIAGNOSTIC CRITERIA

- At least 5 of 9 symptoms for a 2-week period, representing a change in previous functioning
- At least one of the symptoms must be depressed mood (irritable in children) or loss of interest or pleasure in usual activities

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MAJOR DEPRESSION CRITERIA

1. Depressed mood (feels sad or empty) by self-report or observation
2. Diminished interest or pleasure in most activities
3. Weight gain or weight loss; in children, failure to make expected weight gain

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MAJOR DEPRESSION CRITERIA

4. Insomnia or hyper-somnia nearly every day
5. Psychomotor agitation or retardation nearly every day, observable by others
6. Fatigue or loss of energy

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MAJOR DEPRESSION CRITERIA

7. Feelings of worthlessness or guilt (which may be delusional)
8. Inability to concentrate; indecisiveness
9. Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan

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MAJOR DEPRESSION CRITERIA

- The symptoms cause clinically significant distress or impairment
- The symptoms do not meet criteria for a Bipolar Mixed Episode
- The symptoms are not better accounted for by bereavement (>2 mos. after the loss)

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DEPRESSION IN CHILDREN

- Depression frequency varies with age and gender
  - Preschool – 0.3%
  - Pre-pubertal children-0.4% to 3%
  - Adolescents – 0.4% to 6.4%

  *Rates in males and females are equal until adolescence when females outnumber males 2-3:1

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DEPRESSIVE SYMPTOMS THAT INCREASE WITH ADVANCING AGE

- Sleep/Appetite Changes
- Fatigue
- Anhedonia ("I'm bored")
- Psychomotor retardation
- Hopelessness
- Delusions

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DEPRESSIVE SYMPTOMS THAT DECREASE WITH ADVANCING AGE

- Predominantly angry (rather than sad) mood
- Somatic complaints (head, stomach, muscle aches)
- Behavioral problems
- Guilt, irritability
- Hallucinations

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SUICIDE

- Suicide is the 4th leading cause of death in children aged 10-15 years
- Suicide is the 3rd leading cause of death among adolescents and young adults aged 15-25 years
- Rates of suicide attempts are 3 times higher in females
- Rates of completed suicides are 5 times higher in males
- Significant suicidal ideation should prompt you to screen for bipolar disorder

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DEPRESSION SALIENT FACTS

- Consider psychosocial/life stressors
- Considerrganic etiologies/infections, medications, endocrine disorders, neurological disorders
- Lifetime risk of depression in children of depressed parents is 15-45%
- 2/3 recover within one year
- Recurrence rate: 70% in 5 years
- Pre-pubertal: 30% become Bipolar
- Adolescents: 20% become Bipolar
- Increased risk for depression as adults

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TREATMENT OPTIONS

- Cognitive Therapy
- Interpersonal therapy
- Group therapy
- Family therapy
- Antidepressants-black box warning of increased risk of suicidal ideation, fluoxetine has the most robust data in patients under 18

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ANXIETY DISORDERS

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ANXIETY DISORDERS IN CHILDREN

- Anxiety Disorders occur in 13% of children and adolescents
- Etiology:
  - Genetic (high heritability)
  - Environmental (rejection, assault)
  - Temperament (shy, inhibited, Autistic spectrum disorders)

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SYMPTOMS OF ANXIETY IN CHILDREN

- Physical complaints: headache, stomachache, severe unexplained pain
- Difficulty falling asleep, frequent awakening, nightmares
- Overeating or lack of appetite
- Avoiding outside activities or social gatherings
- Poor school performance
- Inattention or easily distracted
- Excessive need for reassurance

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GENERALIZED ANXIETY DISORDER

- Less prevalent, but may be more severe than other anxiety disorders
- Excessive anxiety or worry that is difficult to control, lasts at least 6 months and creates impairment in functioning
- Accompanied by at least one of the following: restlessness, fatigue, difficulty concentrating, irritability, muscle tension, sleep disturbance
- Mean age of onset between 10-13 years of age
- Prevalence: Latency age 3%; adolescent 10%

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SEPARATION ANXIETY DISORDER

- The most common anxiety disorder of childhood
- Most commonly occurs at age 7 or 8 years, but may occur in adolescence
- May be a reason for school refusal, especially in younger children

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SEPARATION ANXIETY SALIENT POINTS

- Recurrent and excessive distress when separation from home or major attachment figures occurs or is anticipated
- Persistent, excessive worry about losing, or possible harm befalling, major attachment figures
- Persistently, excessively fearful or reluctant to be alone or without major attachment figures at home or without significant adults in other settings
- Important to screen for depression
- Treatment consists of individual and family therapy and psycho-education
- In severe or persistent cases, medications may be necessary (SSRIs)

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OBSESSIVE COMPULSIVE DISORDER (OCD)

- Recurrent, time-consuming obsessions or compulsions that cause distress and/or impairment. The compulsive behaviors are often an attempt to reduce the obsessive thoughts.
- Half of adults with OCD report their symptoms began in childhood or adolescence
- High degree of genetic etiology
- 10% may have been precipitated by PANDAS

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OCD

- First-line treatment is cognitive- behavioral therapy
- sertraline is approved for OCD age 6+ years
- fluvoxamine approved for age 8+ years
- Other SSRIs may be effective in children, good data in adults
- Clomipramine only in older adolescents with close monitoring but may be more effective

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PANDAS

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PANDAS

- Pediatric Autoimmune Neuropsychiatric Disorders Associated with group A Streptococcus
- Infection may precipitate abrupt onset of tics, compulsions, emotional lability, episodic and recurrent
- It is thought that anti-neuronal antibodies formed against the group A beta-hemolytic streptococcal cell wall antigens may cross-react with caudate neural tissue
- If clinically indicated, obtain streptococcal culture, ASO titers and anti-DNAase B. If streptococcal infection is confirmed, treatment with penicillin may improve tics and OCD symptoms

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TIC DISORDERS

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TIC DISORDER PREVALANCES

- Transient tics occur in 6-13% of all children, the most common of the tic disorders
- Chronic tic disorder occurs in 1-2%, with 3:1 ratio of boys to girls
- Tourette's disorder is the least common, with a rate of between 5-10 per 10,000 children

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TICS AND NON-TIC BEHAVIORS

- Tics are brief clonic movements of eyes, face, neck and shoulders
- The most common tics are eye-blinking, facial grimacing and head-jerking
- Typically, vocal tics involve throat-clearing, grunting or barking
- Tics may be simple (brief) or complex (elaborate)
- Non-tic behaviors may include "nervous" habits such as hair-twirling and skin-picking
- Compulsions of OCD are also not tics
- Allergic throat-clearing and sniffing are physiological, non-tic behaviors

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TRANSIENT TIC DISORDERS

- Single or multiple motor and/or vocal tics, occurring many times a day, nearly every day, for at least 4 weeks, but no longer than 12 months
- Most transient tics are simple, not complex, and do not usually cause distress
- No specific treatment

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CHRONIC TICS

- May be motor of vocal
- Single or multiple motor or vocal tics that last more than a year
- Mindfulness and relaxation training can be beneficial

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TOURETTE'S DISORDER

- Multiple motor and one or more vocal tics lasting at least 1 year, many times a day, nearly every day, without a tic-free period of more than three consecutive months
- Onset before age 18; peak onset at age 5 to 8 years
- Severity tends to peak around 8 to 11 years, with improvement or possible resoluction during puberty
- 40% of Tourette's children also meet criteria for OCD
- >20% of children with any tic disorder have OCD
- Many children with Tourette's Disorder have comorbid depression or anxiety
- 8-27% of children with Tourette's also have ADHD, but more have just significant impulsivity

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TREATING TOURETTE'S DISORDER

- Education is key for the patient as well as family and school personnel
- Supportive psychotherapy can be beneficial with managing stigma
- Pharmacotherapy is indicated for Tourette's in many cases
- Alpha agonists such as clonidine and guanfacine have been helpful
- Antipsychotics are beneficial, the most robust research supports risperidone
- Nicotine patches may be useful for severe tics resistant to other medications (off label)

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CONDUCT DISORDER

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CONDUCT DISORDER

Repetitive behaviors that violate the rights of others and/or societal laws, with 3 or more of the following in past 12 months, with one in last 6 months:

- Aggression or cruelty to people or animals
- Destruction of property
- Theft
- Truancy
- Running away

- The prevalence rates are 12% for boys and 7% for girls
- This is the most frequent reason for psychiatric hospital admissions for children and adolescents

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ETIOLOGY AND RISK FACTORS

- Harsh punishment
- Institutional living
- Inconsistent parental figures and poor parental monitoring in early childhood
- Parental conflict
- Maternal depression
- Paternal alcoholism
- Fetal Alcohol Syndrome
- Prenatal drug exposure

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CONDUCT DISORDER, VARIABLE ONSET

- Oppositional Defiant Disorder (ODD) manifests in preschool years developing into a serious conduct disorder by adolescence
- ODD patients have a 2-3 fold likelihood of becoming juvenile offenders
- Other patients show no behavioral issues until middle school, when symptoms of Conduct Disorder become prevalent
- This group has a more favorable prognosis and are more likely to respond to treatment

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CONDUCT DISORDER SALIENT FACTS

- The combination of ADHD and Conduct Disorder increases the likelihood of antisocial behavior persisting into adulthood as compared to Conduct Disorder alone
- Conduct Disorder is a multifactorial disorder, arising from the interplay of biological risk factors and adverse childhood experiences, therefore early intervention can be key
- Treatment includes various forms of psychotherapy to include family therapy, behavior management training, social skills groups, and problem-solving skills
- Medications are not specifically indicated or particularly helpful except with specific targeted symptoms

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