

Major Depressive Disorder  
in  
Children & Adolescents

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Part One  
**Foundations of Major Depressive Disorder**

**Objectives:**

- \* Identify the features of Major Depressive Disorder (MDD) in children and adolescents, including subtypes, risk factors, protective factors, and the course of illness
- \* Recognize the differential diagnoses for MDD that should be considered

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Prevalence of MDD

- \* Preschoolers – 2% (few studies)
- \* Children – 2% (male to female ratio 1:1)
- \* Adolescents – 4-8% (male to female ratio 1:2)
- \* A more recent study in 2015 shows that rates of MDD are rapidly increasing in youth, with **12.7% of youth ages 12-17 having MDD**
- \* By age 18 the prevalence is the same as adults – 20% (male to female ratio 1:2)

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### Why Do Children Get Depressed?

- \* **Environmental Stressors** – can contribute
  - \* After the age of 12, 50–60% of MDD is related to environmental stressors
- \* **Genetic Factors** – Runs in families
  - \* ~ 50% of adolescent depression is related to genetic factors
- \* **Psychological disposition** – Optimist vs. pessimist
- \* **Biological factors** – multiple genes that can cause a person to be pre-disposed to develop depression under stress

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### DSM-5 Depressive Disorders

- \* Major Depressive Disorder
- \* Disruptive Mood Dysregulation Disorder (core feature of DMDD is chronic, severe, persistent irritability manifested as frequent temper outbursts or an irritable angry mood)
- \* Persistent Depressive Disorder (Dysthymia)
- \* Premenstrual Dysphoric Disorder (mood lability/dysphoria that occurs during the premenstrual phase of the cycle)
- \* Substance/Medication Induced Depressive Disorder
- \* Depressive Disorder due to another medical condition
- \* Unspecified Depressive Disorder (depressive symptoms that do not meet full criteria of the other disorders)

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### DSM-5: Major Depressive Disorder

**Five or more symptoms are present during the same 2-week period and represent a change in previous functioning**

- \* Depressed Mood AND/OR Loss of Interest or Pleasure for at least 2 weeks
  - \* Can be Irritable Mood instead of Depressed Mood in Children/Adolescents

**AND**

- \* Decreased Motivation
- \* Increased or Decreased Sleep
- \* Significant Weight Loss/Increased or Decreased Appetite
- \* Psychomotor Agitation/Retardation
- \* Decreased Energy/Fatigue
- \* Feelings of worthlessness or excessive/inappropriate guilt
- \* Diminished ability to concentrate/Indecisiveness
- \* Recurrent thoughts of Death, Recurrent Suicidal Ideation, Suicide Attempt, Suicide Plan
- \* Significant distress and impairment in social occupational other functioning
- \* Symptoms not only due to conditions drugs/alcohol, or a medical conditions
- \* Not explained by another psychiatric disorder
- \* There has never been a manic or hypomanic episode

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### MDD Specifiers

- \* Single Episode
- \* Recurrent Episode
- \* Mild
- \* Moderate
- \* Severe
- \* With Psychotic Features
- \* In Partial Remission
- \* In Full Remission

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### MDD Subtypes

- \* **MDD with mixed features** – MDD plus with 3 or more manic/hypomanic symptoms (but not enough criteria to meet for Bipolar 1/Bipolar 2)
- \* **Seasonal Affective Disorder** – regular temporal relationship with a particular time of the year, most common in the fall/winter, hypersomnia, low energy, CHO cravings, may respond to light treatment
- \* **Melancholic Features** – loss of pleasure, lack of reactivity, profound despondency, early am waking, inappropriate guilt, anorexia/weight loss, psychomotor agitation/retardation, depression that is worse in the a.m.
- \* **Atypical Features** – mood reactivity, weight gain, increased appetite, increased sleep, interpersonal rejection sensitivity, heavy leaden feeling

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### MDD Subtypes

- \* **Anxious Distress** – worried, keyed up, tense, might lose control, difficulty concentrating, fear that something awful may happen, unusual restlessness
- \* **Psychotic Features** – delusions or hallucinations, can be mood congruent or mood incongruent
- \* **Catatonia** – stupor, grimacing, mannerisms, agitation, posturing, negativism (no response), echolalia (mimicking speech), echopraxia (mimicking movements) waxy flexibility (slight resistance to positioning), stereotypy (repetitive non-goal directed movements), catalepsy (induction of a posture)
- \* **Peripartum Onset** – onset of mood symptoms occurs during pregnancy or the four weeks following delivery, occurs in 3-6% of women, often presents with anxiety, can occur with or without psychotic features (worry of infanticide)

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### MDD Symptoms by Age

- \* **Preschoolers** – Dysphoria, Anhedonia, Irritability, Acting Out, Somatic Complaints
- \* **School Age** – Dysphoria, Lack of Fun, Irritability, Acting Out, Somatic Complaints, Decreased Energy
- \* **Adolescents** – Isolation, Boredom, Irritability, Acting Out, Decreased Energy, Somatic Complaints, Sleep Disturbance, Change in Appetite

\*\* Delusions are rare but increase with age

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### MDD is Hard to Diagnose

- \* Difficulty in the child verbalizing the symptoms; most likely will not say I am depressed or sad
- \* Children are flexible; they may look fine playing a video game, but with more questioning/observation you find out that they are feeling sad
- \* Co-morbid disorders occur in 40-70% of youth with MDD; SUD, ADHD, Anxiety Disorders, Eating Disorders, Personality Disorders
- \* Environmental issues that are stressful can cloud the picture

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### MDD Often Goes Undiagnosed or Untreated

- \* Depression can be more of an internal problem vs. the externalization seen in Disruptive Disorders
- \* Not knowing when help is needed
- \* Stigma associated with mental health disorders
- \* Symptom Overlap (e.g., anxiety and depression)
- \* Clinical Biases – may not consider depression in a younger child
- \* About 13% of youth are diagnosed with MDD by age 18, but roughly 66% of youth with MDD do not receive mental health treatment for the disorder

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### Differential Diagnoses

- \* **Bipolar Disorder** – look for a history of manic or hypomanic symptoms, family history (25% risk if a parent has Bipolar Disorder), psychotic symptoms.
- \* **Disruptive Mood Dysregulation Disorder** – persistent irritability with temper outbursts
- \* **Premenstrual Dysphoric Disorder** – symptoms present in the final week before the onset of menses and start to improve within a few days after the onset of menses
- \* **Disruptive Behavior Disorders** – ADHD, ODD, Conduct Disorder
- \* **Anxiety Disorders**
- \* **Personality Disorders** – e.g., Borderline, Antisocial
- \* **Substance Use Disorders**
- \* **Grief** – predominant affect is emptiness or loss
- \* **Autism Spectrum Disorder**
- \* **Medical/Neurologic Illnesses** – Hypothyroidism, Mononucleosis, Anemia, Sleep Apnea
- \* **Medications** – Corticosteroids, Beta-Blockers, Birth Control, Benzodiazepines, Stimulants (Ritalin), Anticonvulsants (Topamax, Tegretol)

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### Course of Illness

- \* Average duration is 7-9 months
- \* In two years, 90% have achieved remission
- \* 50% relapse (same episode of illness comes back)
- \* 40% have a recurrence (new episode) in 2 years
- \* 70% have a recurrence in 5 years
- \* 6-10% have a chronic course
- \* Can be continuous into adulthood

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### Risk Factors Include... . Keep an Eye on these Children

- \* Anxiety Disorders frequently precede the onset of MDD
- \* Irritability
- \* ADHD, ODD, Conduct Disorder
- \* Sleep Problems
- \* Negative Cognitive Distortions
- \* Difficulty with emotional regulation
- \* Low positive affect
- \* Medical Illnesses

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**Protective Factors**

- \* Positive Parent-Child Relationship
- \* Parental Supervision & Monitoring
- \* Pro-Social Peer Group
- \* Connection to School
- \* Higher IQ
- \* Participation in sports, religion, and physical activity

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**Part Two**  
**Suicide in Children & Adolescents**

**Objective:**

- \* Discuss suicide in children and adolescents, including statistics, risk factors, warning signs, and suicide prevention

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**Suicide – The #2 Cause of Death in the United States**

- \* Suicide is the **2nd leading cause of death** for children, adolescents and young adults, ages 10-24 (#1 = unintentional injuries; #3 = homicides).
- \* Accounts for **400 deaths in youths ages 10-14 years old**.
- \* However, it accounts for **more than 5000 deaths per year in adolescents and young adults ages 15-24**.
- \* For each completed suicide there are several thousand attempts.
- \* There has been a **24% increase in the suicide rate** in the US from 1999 to 2014.
- \* The **largest percent increase** has been in girls ages 10-14; tripling between 1999-2014.
- \* However, **males** still have the higher number of **suicide deaths** in ages 10-24.

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### Suicide – The #2 Cause of Death in the United States

- The **majority** of children & adolescents who attempt suicide have a **significant mental health disorder, usually depression.**
- Suicide accounts for **more deaths** than any major single medical illness.
- **Firearms is the most common suicide method**, followed by suffocation, poisonings, falls and other in **adolescents over age 14.**
- **Suffocation is the most common method in ages 10-14**, followed by firearms and poisoning.
- **60% of first suicide attempts are planned.**

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### Ideation, Plans, Attempts: 2014 National Youth Risk Behavior Survey

- \* 17% seriously have considered attempting suicide
- \* 13.6% have ideation with a plan
- \* 8% have reported making a suicide attempt within the prior year
- \* 2.7% have made a suicide attempt requiring medical intervention
- \* **All higher in girls than boys**

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### Some Risk Factors for Suicide

- MDD Diagnosis (32-54%)
  - Also occurs in Bipolar Disorder (20%), SUD (27-62%), Anxiety Disorders (27%), Eating Disorders (4%), Schizophrenia (4%)
- Previous Suicide Attempt
  - The strongest predictor of an adolescent suicide attempt is the **number** of previous suicide attempts
- Use of drugs/alcohol
- Chronic non suicidal self injury
- Personality Disorders – Borderline & Antisocial
- Family Conflict and Family History of Suicide
- Adverse Childhood Experiences such as sexual assault, physical abuse
- Exposure to Violence
- Impulsivity, Aggression, Disruptive Behaviors
- Access to Firearms
- Bullying and Acute Loss or Rejection
- Depression, Hopelessness, Helplessness

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### Risk Assessment

- \* **#1 is the Clinical Interview of child, guardian, family and collateral contacts.**
- \* Augment with tools such as:
  - \* Columbia Suicide Severity Rating Scale – measures severity and intensity of suicide
  - \* Harkavy-Asnis Suicide Scale
  - \* Beck Depression Inventory
  - \* Suicidal Intent Scale
  - \* Child Adolescent Suicide Potential Index

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### High Risk Groups for Suicidal Behaviors

- \* Alaska Native and American Indian Youth
- \* Young adults with substance use problems
- \* Children of depressed parents
- \* Youth and young adults who identify as sexual or gender minorities

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### Children vs. Teens

- \* **Among younger children**, suicide attempts are often **impulsive**
- \* Associated with feelings of sadness, confusion, anger or problems with attention and hyperactivity
- \* **Among teens**, suicide may be seen as a solution to their problems
- \* Associated with feelings of stress, self-doubt, pressure to succeed, financial uncertainty, disappointment and loss

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### Warning Signs in Children

- \* Changes in eating or sleep habits
- \* Frequent or pervasive sadness
- \* Withdrawal from friends, family, and regular activities
- \* Frequent complaints about physical symptoms often related to emotions such as stomachaches, headaches, or fatigue
- \* Decline in the quality of schoolwork
- \* Preoccupation with death and dying
- \* Not planning for future events
- \* Giving away belongings

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### Warning Signs in Teens

- \* Drug or Alcohol Use
- \* Violent Actions
- \* Severe Rebellious Behavior
- \* Running Away
- \* Unusual Neglect of Appearance
- \* Marked Personality Change
- \* Loss of Interest in Activities

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### Anecdotal: Look for Warning Signs...

What is written on social media

- \* Types of pictures drawn
- \* Conversations with peers including suicide pacts
- \* Written poetry, stories, journals
- \* Websites/Social media platforms visited
- \* Significant change in dress or grooming
- \* Suicide notes
- \* Assess the developmental understanding of suicide
  - \* Some younger children do have an understanding of the finality of death
  - \* Average understanding usually between ages 5-7 but understanding can occur as young as 3 yrs of age

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### Open Suicide Statements

Children & Adolescents may make openly suicidal statements:

- “I wish I were dead.”
- “I won’t be a problem for you much longer.”
- “Nothing matters.”

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### Ask Questions

Rather than putting thoughts into your child’s head, asking questions can provide assurance that someone cares and will give the child a chance to talk about feelings.

- A. Are you feeling sad or depressed?
- B. Are you thinking about hurting or killing yourself?
- C. Have you ever thought about hurting or killing yourself?

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### Err On The Side Of Caution!!!

- \* Any child or adolescent with suicidal thoughts or plans should be immediately evaluated by a trained mental health professional.
- \* Depression and suicidal feelings are treatable mental disorders.
- \* Children & adolescents need to have the illness recognized and diagnosed with a plan for appropriate treatment.

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### Treatment for Suicide Attempts

- \* **Acutely, must evaluate risk** of suicide and need for a higher level of care if safety is unpredictable and if removal from a stressful environment is indicated
- \* **Written safety plan** which assesses suicide intent, methods for maintaining safety, and no access to lethal means
- \* **Focus on protective factors** such as sources of support (familial and non-familial), positive affect
- \* **Focus on interventions** with risk factors, such as promoting healthy sleep, addressing SUD
- \* **Focus on motivation** for treatment and coordination with other services
- \* Close monitoring and follow-up!!! R/O medical issues such as overdoses

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### Suicide Prevention

- \* Educate youth on how to cope with stress and develop emotional and behavioral self regulation via school and family programs
- \* Educate youth about avoiding substance use
- \* Enhance accessibility to mental health care, public education to reduce stigma
- \* Educate caretakers about the accessibility of firearms
- \* Development of universal screening monitoring methods
- \* Greater understanding of socio-cultural risk factors such as social media

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### Part Three

#### Pharmacotherapy

**Objective:**

- \* Review current anti-depressant medications prescribed for children and adolescents with MDD

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Anti-Depressant Medications

**Selective Serotonin Re-uptake Inhibitors (SSRIs)**  
INHIBIT THE REUPTAKE OF SEROTONIN

- \* Citalopram – Celexa
- \* Escitalopram – Lexapro
- \* Fluoxetine – Prozac
- \* Fluvoxamine – Luvox
- \* Paroxetine – Paxil
- \* Sertraline – Zoloft

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Anti-Depressant Medications

**Selective Norepinephrine Re-uptake Inhibitors (SNRIs)**

- \* Venlafaxine – Effexor
- \* Duloxetine – Cymbalta
- \* Desvenlafaxine – Pristiq

**Tricyclic Anti-depressants (TCAs)**

- \* Clomipramine – Anafranil
- \* Desipramine – Norpramin
- \* Nortriptyline – Pamelor

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Anti-Depressant Medications

**Atypical Anti-depressants**

- \* Bupropion – Wellbutrin
- \* Mirtazapine – Remeron
- \* Vilazodones – Viibryd
- \* Vortioxetine – Trintellix
- \* Trazodone – Desyrel

Treatment Refractory depression is sometimes augmented with anti-psychotic medication (SGA)

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**AEV1** Albert, Elizabeth V, 4/13/2021

### FDA Approved Anti-Depressants

- \* **Lexapro** (Escitalopram): 10mg–40mg
  - \* FDA approved in ages 12-17
  - \* Start with 5mg
- \* **Prozac** (Fluoxetine): 20mg–80mg
  - \* FDA approved in ages 8-18
  - \* Start with 10mg

\* These are average dose ranges; in children, start with low doses and use the lowest possible dosage.

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### Non-FDA Approved Anti-Depressants

- \* **Celexa** (Citalopram): 20mg–40mg ; start with 10mg
- \* **Paxil** (Paroxetine): 20mg–60mg ; start with 10mg
- \* **Zoloft** (Sertraline): 50mg–200mg; start with 25mg–50mg
- \* **Fluvoxamine** (Luvox): 50mg–150mg; start with 25mg
- \* **Cymbalta** (Duloxetine): 40mg–60mg; start with 20mg
- \* **Effexor XR** (Venlafaxine XR): 150mg–225mg ; start with 37.5mg/day
- \* **Wellbutrin** (Bupropion): 150mg–300mg; start with 100mg
- \* **Strattera** (Atomoxetine): not effective in MDD; used for ADHD

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### Others That Are Sometimes Used Though Not FDA Approved

- \* **Effexor** – causes sedation and dizziness, diastolic hypertension; some evidence that it may help
- \* **Trazodone** – usually used as an adjunct for sleep; serious adverse effect of priapism (sustained and painful erection in males)
- \* **Remeron** – used as an adjunct for sleep; weight gain
- \* **Wellbutrin** – may reduce the seizure threshold daily
  - \* Doses should not exceed 300mg in children
  - \* A single dose should not exceed 150mg
  - \* Should not be used in co-morbid Eating Disorders
  - \* Used to treat ADHD

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### Not Usually Used In Children And Adolescents

- \* **MAOIs**
  - \* Anti-depressants introduced in the 1950s
  - \* Not used very much in children and teens due to dietary restrictions and safety concerns
  - \* Used only in treatment-resistant depression
  - \* Certain foods/drug interactions can cause lethal hypertension (Nadal, Marplan, Parnate, Eldepryl, Azilect, Manerix)
  - \* Example: Prozac should not be taken with or within 6 weeks of taking an MAOI
  - \* Example: Avoid foods with high levels of tyramine, dopamine and tryptophan, such as aged cheeses, yogurt, cured meats, fermented sausages, sauerkraut, etc.
- \* **Tricyclic anti-depressants**
  - \* Not effective in MDD in youth
  - \* Sometimes low doses can be helpful for migraines
  - \* May be used as an augmenting agent (Amitriptyline, Nortriptyline), for OCD (Clomipramine), and ADHD (Desipramine)

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### Some Side Effects of SSRIs/SNRIs

- \* Gastrointestinal- stomach pain, nausea, indigestion
- \* Dizziness
- \* Headaches
- \* Increased or Decreased Sleep
- \* Fatigue
- \* Nightmares
- \* Decreased Libido, Erectile Dysfunction
- \* Increased or Decreased weight
- \* Sweating
- \* Easier Bruising

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### Usual Well Tolerated But Beware of ...

- \* **Behavioral Activation:** disinhibition, restlessness, impulsiveness, garrulousness
- \* Look for the development of mania or hypomania
- \* Usually occurs early in treatment
- \* These symptoms can occur any time between 2 weeks and one year after the initial exposure to the SSRI
- \* In these children (particularly under the age of 12) 21% had a family history of Bipolar Disorder

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### Usual Well Tolerated But Beware of ...

- **Drug-Drug Interactions:** Cytochrome P450 enzymes primarily found in the liver affect the way drugs are metabolized
- **Switching from Prozac to another SSRI:** A gap of 4-7 days is recommended
- **Serotonin Syndrome:** Use of SSRIs with an MAOI, L-tryptophan, or lithium can raise plasma serotonin levels
  - Serious and potentially fatal syndrome with a constellation of symptoms:
    - Diarrhea
    - Restlessness
    - Extreme agitation, hyperreflexia, autonomic instability with rapid fluctuations in vital signs
    - Seizures, myoclonus (involuntary muscle jerk) , hyperthermia, shivering and rigidity
    - Delirium, coma, status epilepticus, cardiovascular collapse, and death

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### SSRIs are Usually Well Tolerated but Beware of ...

- **Discontinuation Syndrome:** flu like syndrome from abrupt discontinuation
  - Characterized by dizziness, moodiness, nausea, vomiting, myalgia, irritability, and fatigue
  - More likely with the shorter acting SSRIs
  - A slow taper is recommended
- **Black Box Warning:** increased suicidal ideation and behavior in children treated with anti-depressants
  - In June 2003, a warning came out in the UK about the possible increased risk of suicidal ideation/suicide in children taking the drug Paxil (SSRI)
  - US FDA, in response to this report, issued a black box warning in 2004 for the use of anti-depressants in young people under the age 25
  - There is an increased risk difference in comparison to adults of 1-2%
  - The current thought is that the use of SSRIs protect against suicide

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### Anti-Depressant Maintenance

- \* MDD – Continue for 6-12 months after symptomatic relief
  - \* Can consider a slow taper after 12-24 months of euthymic mood/affect
- \* Chronic, severe, recurrent depression – longer period of prophylaxis
  - \* May consider a trial of a slow taper after several years

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**Non-Responders**

- \* Recheck the diagnosis
- \* Inadequate dose or duration
- \* Nonadherence
- \* Side Effects
- \* Co-occurring conditions: medical issues, abuse, school issues, parental psychopathology
- \* Poor fit between patient and the therapist

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**Resources**

American Academy of Child & Adolescent Psychiatry  
[www.aacap.org](http://www.aacap.org)

American Academy of Pediatrics  
[www.aap.org](http://www.aap.org)

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