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## Disruptive Behaviors in Children and Adolescents



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# Disruptive Behavior Disorders

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## Introduction & Overview

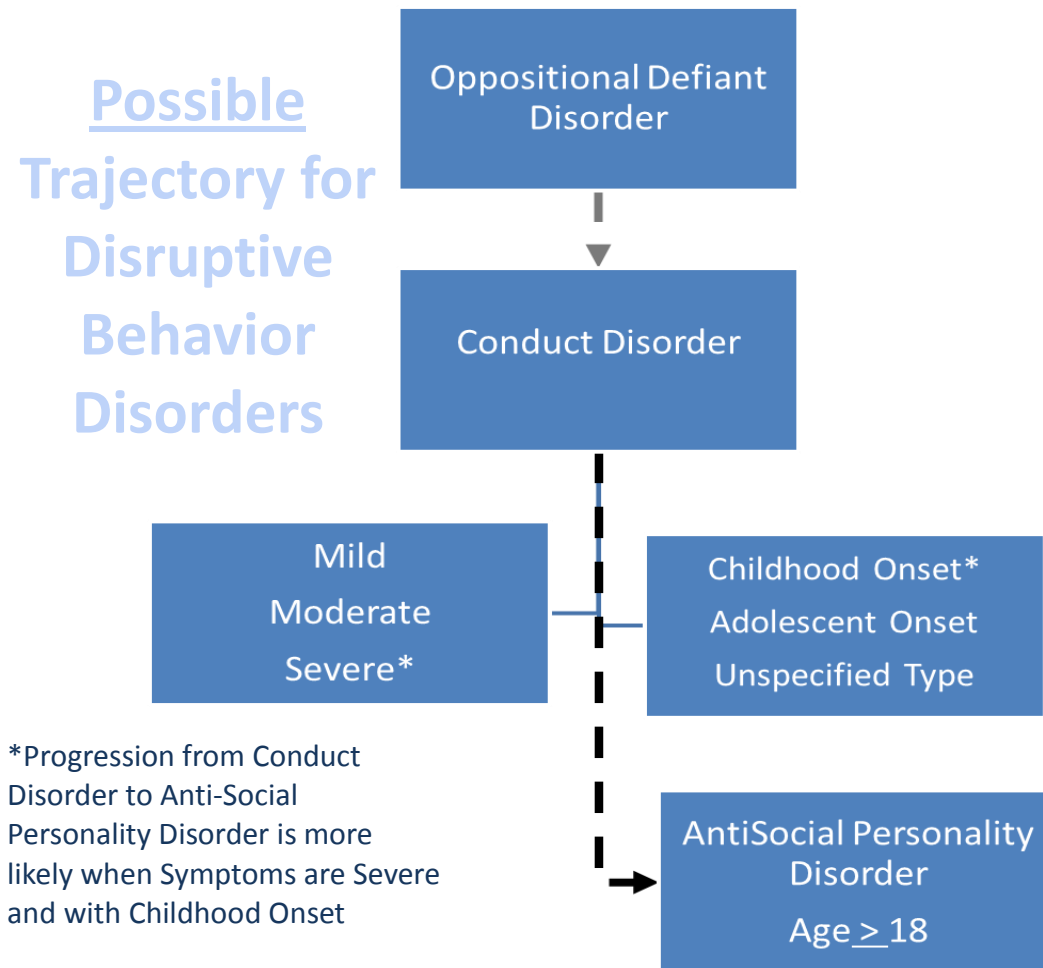
The purpose of this guideline is to provide a general overview of Disruptive Behavior Disorders (DBD) commonly found among children and adolescents. The guideline will address Oppositional Defiant Disorder (ODD) and Conduct Disorders (CD). The Disruptive Behavior Disorders might best be described along a continuum as the emergence of ODD may be a precursor to CD. It is estimated that ADHD is a co-occurring condition in approximately half of all children with ODD or CD. Although ODD is more common among boys prior to puberty, the trend does not persist after puberty. The ratio of CD is greater in males than females. The manifestation of CD is also different between males and females. CD onset in girls is generally prior to adolescence (Keenan, 2010).

There are promising evidence-based treatments for ODD and CD. Primarily these treatments rely on parents to act as change agents. Parents are taught to make improvements in their relationship with the child as well as how to manage disruptive behaviors. Early identification of children at risk for Disruptive Behavior Disorders is critical as is early intervention.

As the following diagram depicts, the possibility of progression exists with a Disruptive Behavior Disorder. Steiner and Remsing (2007) indicate that approximately two-thirds of children diagnosed with ODD will no longer meet diagnostic criteria after three years. However, earlier onset is three times more likely to progress to CD. They also report that forty percent of those diagnosed with CD eventually meet the criteria for Antisocial Personality Disorder (ASPD).

This updated version highlights changes arising from the publication of the DSM 5. A section has been added to identify changes that resulted from the DSM-IV TR being replaced.

## Possible Trajectory for Disruptive Behavior Disorders



### Epidemiology

- The US Department of Health and Human Services Substance Abuse and Mental Health Services Administration (SAMHSA) report the following:
  - Oppositional Defiant Disorder (ODD) and Conduct Disorders (CD) are common
  - 2% to 16% of youth have an ODD
  - The prevalence of CD is 6% to 9% and is more commonly diagnosed in boys

### Etiology

There are a number of factors associated with the cause of Disruptive Behavior Disorders.

#### Biological

- Parent with a diagnosis of:
  - Alcohol Dependence
  - Antisocial Personality Disorder
  - Attention Deficit/Hyperactivity Disorder
  - Conduct Disorder
  - Schizophrenia
- Sibling with a Disruptive Behavior Disorder

- ODD: Familial Pattern ODD is more common in families in which at least one parent has a history of Mood Disorder, ODD, CD, ADHD, ASPD, or a Substance Related Disorder. Some studies suggest a link between maternal depression and ODD; however, the direction of causality is suspect. ODD is more common in the families where there is serious marital discord
- CD: Familial Pattern Twin and adoption studies show genetic and environmental factors
- Maternal smoking during pregnancy

#### Environmental Risk Factors

- Parental rejection/neglect
- Harsh discipline
- Inconsistent parenting/multiple caregivers
- Lack of Supervision
- Large family size
- Single parent status
- Marital discord
- Abuse – emotional, physical or sexual
- Poverty
- Abuse and Neglect
- Parental criminality & psychopathology
- Drug and alcohol use by parents/caregivers
- Exposure to violence

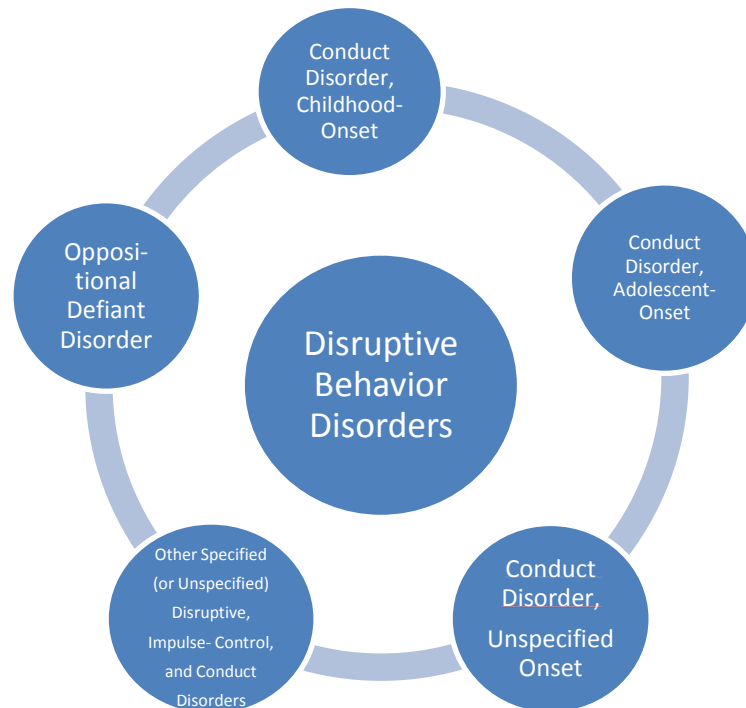
### Highlights and Changes from DSM-IV TR to DSM 5

The chapter on disruptive, impulse-control, and conduct disorders is new to DSM-5. It brings together disorders that were previously included in the chapter “Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence” (i.e., oppositional defiant disorder; conduct disorder; and disruptive behavior disorder not otherwise specified, now categorized as other specified and unspecified disruptive, impulse-control, and conduct disorders) and the chapter “Impulse-Control Disorders Not Otherwise Specified” (i.e., intermittent explosive disorder, pyromania, and kleptomania). These disorders are all characterized by problems in emotional and behavioral self-control. Of note, ADHD is frequently comorbid with the disorders in this chapter but is now listed in DSM 5 with the neurodevelopmental disorders. It had previously (DSM-IV TR) been considered within the DBDs. It will not be addressed as a primary diagnosis in this guideline because it is covered separately and may be accessed at <http://psychiatry.uams.edu/PsychTLC>).

Four refinements have been made to the criteria for oppositional defiant disorder. First, symptoms are now grouped into three types: angry/irritable mood, argumentative/defiant behavior, and vindictiveness. This change highlights that the disorder reflects both emotional and behavioral symptomatology. Second, the exclusion criterion for conduct disorder has been removed. Third, given that many behaviors associated with symptoms of oppositional defiant disorder occur commonly in normally developing children and adolescents, a note has been added to the criteria to provide guidance on the frequency typically needed for a behavior to be considered symptomatic of the disorder. Fourth, a severity rating has been added to the criteria to reflect research showing that the degree of pervasiveness of symptoms across settings is an important indicator of severity.

## Symptoms & Clinical Features of Disruptive Behavior Disorders

### Primary Disruptive Behavior Disorders Included in the DSM 5



### Early Warning Signs

- Irritable temperament
- Inattentiveness
- Impulsivity
- Defiance of adults
- Poor social skills
- Lack of school readiness
- Coercive interactive style
- Aggression toward peers
- Lack of problem-solving skills

### Diagnostic Criteria

#### Oppositional Defiant Disorder

- Loses temper
- Angry
- Arguing with adults
- Disobedience
- Easily annoyed
- Spiteful

- Blames others for mistakes
- Deliberately annoys others
  - The principal subdivision to be made in ODD is between the variety that appears to progress to CD and the variety that does not. Greater severity and early onset of oppositional behavior, frequent physical fighting, parental substance abuse and low socio-economic status appear to increase the risk of progression to more severe antisocial behaviors observed in CD (Dulcan & Loeber, 1995)

### Conduct Disorder

- Exhibits a pattern of behavior that violates the rights of others or disregards age-specific social norms
  - Deliberately break rules
  - Aggressive toward people or animals
  - Destructive of property
  - Lying and theft
    - Violation of rules
      - For example skipping school and substance use

As noted in the following diagram, the possibility of progression is present in Disruptive Behavior Disorders. However, there are also protective factors that can mitigate the escalation.

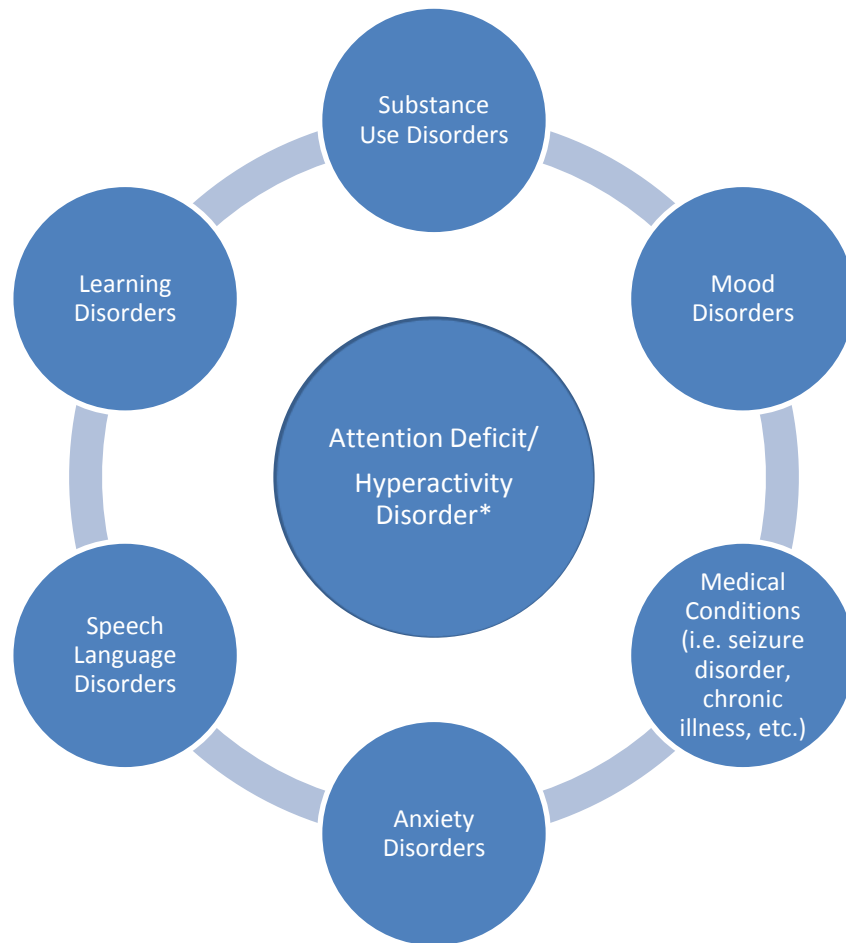
- Protective factors would include
  - Late onset
  - Early assessment
  - Effective treatment
  - The absence of co-occurring disorders
  - Negative family history for DBD

## Differential Diagnosis

Possible Trajectory	Oppositional Defiant Disorder →	Conduct Disorder →	Anti-Social Personality Disorder
Major Symptoms	Angry, argues, easily annoyed, disobedient, spiteful, loses temper, blames others	Violates others' rights, physical harm, property damage, deceitful, serious violations of rules	
Prognosis		Guarded with onset before age 10 or if more serious symptoms are present	Guarded
Risk Factors	As an infant was fussy, reactive or excessive motor activity	Male, parental rejection, harsh parenting, peer rejection, trauma	Family History
Protective Factors	Early identification , Effective treatment, Absence of ADHD, No family history of DBD	Mild symptoms, Early Assessment and Effective, Timely Treatment, No co-occurring Substance Use, No family history	



## Comorbid Conditions for Disruptive Behavior Disorders



\*This is a commonly occurring comorbid condition

- Differential Diagnosis for Disruptive Behavior Disorders
  - In many children, increased negativity and hostility may occur in the context of a mood or psychotic disorder, and **the diagnosis of ODD is not allowed when the symptoms occur exclusively during the course of one of these**
  - Many children and adolescents who meet the criteria for a diagnosis of CD or ODD have coexisting psychiatric disorders that may have led to their disruptive behavior and will influence their responsiveness to treatment and their long term

## Assessment

### General Recommendations in Primary Care Settings

- Bauer and Webster-Stratton (2006) identified key ways primary care physicians can aid parents who present with children or adolescents who have behavior problems

- Use a collaborative approach & specifically inquire about parenting needs
- Support and nurture the parent
- Provide parents with an understanding of normal versus concerning behaviors given the child's developmental phase
- Emphasize a parenting style that recognizes strengths of the child, uses positive reinforcement, actively ignores benign behaviors and provides effective limit-setting and non-punitive punishment (time out)
- Teach the power of positive parental attention
- Invite the parent to show you or tell you what they do and say
- Remind the parent of the importance of their behavior as a model for the child
- Provide or refer parenting programs that are fiscally accessible and convenient
- Share skills and techniques to help parents cope
- Screen for high risk families

### Laboratory Tests

Generally Laboratory findings are not indicated. However, the following may be considered:

- Laboratory and neuroimaging procedures are not helpful in making a diagnosis of DBD but are used to rule out neurological or medical problems
- As part of a basic medical evaluation, consider complete blood cell count, serum chemistries, thyroid function, urinalyses, and toxicology screens. If risk factors are present, test for STD
- A Urinary Drug Screen should be utilized to rule out substance use
- Chromosomal analysis may be indicated for patients with developmental disorders or suspicion of genetic syndromes

### Screening

#### SNAP-IV Rating Scale-Revised (SNAP-IV-R)

This scale, used with children and adolescents ages 6-18, contains 90 items and takes about 10 minutes to administer. The SNAP-IV includes symptoms of ADHD, as well as symptoms of Oppositional Defiant Disorder (ODD) and aggression. It was developed by Swanson, Nolan and Pelham. The SNAP-IV rating scale form, along with scoring instructions, can be downloaded from:

<http://www.adhd.net/>

Lahey et. al. (2008) found that maternal reports of **infant fussiness** were highly predictive of conduct problems for boys and that the presence of **fearfulness** was indicative of conduct problems in girls. The child with this history should be considered at greater risk and there should be greater sensitivity to make a referral for further, formalized assessment.

## **Brief Infant-Toddler Social and Emotional Assessment (BITSEA)**

Karabekiroglu et. al. (2010) found the Brief Infant-Toddler Social and Emotional Assessment (BITSEA) to be a valid and reliable instrument for detecting delays in infants and toddlers. It has broad application for detecting social and emotional problems including disruptive disorders and is appropriate for primary care settings. The primary care provider may want to consider implementation of this assessment tool for early identification and referral.

### **Use of Scales and Assessment via a Qualified Mental Health Professional**

Parental or caregiver reports of aggressive behavior in young children likely indicate the need for more formal assessment including evaluation by a qualified mental health professional. A number of scales and formal assessment instruments may be used to evaluate the severity of externalizing behaviors which includes aggression. Two of the most commonly used, validated instruments are the:

- Child Behavior Checklist developed by Achenbach and Rescorla (2001) and Reynolds and Kamphaus' Behavior Assessment System for Children (2004).

It is important to have multiple perspectives when diagnosing Disruptive Behavior Disorders. In particular, McMahon and Frick (2005) emphasized the importance of multiple methods of assessment, multiple informers, and multiple arenas of functioning among multiple settings. Because early intervention is desirable and improves prognosis, early referral for formal assessment is recommended.

## **Treatment & Interventions**

### **Psychosocial Interventions**

- Without intervention, it is likely that Disruptive Behavior Disorders may progress. There are a number of promising treatments that are available and when completed they can have enduring benefits. A thorough review of Boggs et. al. (2004) demonstrated that treatment completers of **Parent-Child Interaction Therapy** show significant positive change after completing therapy. This was not true for parents who discontinued treatment
- Streiner and Remsing (2007) identify the importance of skill training in problem-solving and family intervention that provides behavior management training
- Eyberg, Nelson and Boggs (2008) have identified 16 evidence-based treatments for disruptive behaviors. Fifteen are identified as probably efficacious while one is evaluated as having well established treatment outcomes. Two examples are:
  - **Parent Management Training (PMT)** is directed toward parents and teaches them to identify antecedents, resulting behaviors and the associated consequences for their children as well as themselves. Ultimately, the training focuses on reinforces desired behaviors

- **Parent-Child Interaction Therapy (PCIT)** emphasizes improvements in the relationship between the parent and child and offers tools to help manage behaviors that are disruptive
- Early intervention during preschool years is imperative & offers promising results
- Nixon (2002) has identified that effective parent management interventions may be offered via a number of modalities including face-to-face counseling, videotaped training and telephonic

### Pharmacotherapy

- **No pharmacotherapy is currently FDA approved for the use in this population of children and adolescents with disruptive behavior disorders**
- Evidence suggests that atypical antipsychotic treatment may be useful in patients with disruptive behaviors and problematic aggression
- Several medications are used to treat symptoms associated with conduct disorder, especially aggression
- Impulsive/affective aggression seems to be a key pharmacologic treatment target
- The range of psychopathology in conduct disorder is extensive and co-morbidity is likely the rule rather than the exception
- If another psychiatric syndrome is identified, aggressive pharmacotherapy is probably warranted and may significantly diminish the behavioral morbidity
- Psychotropic drugs have not yet shown specific effectiveness in the treatment of conduct disorder
- By improving attention and increasing inhibitory activity, medication may improve a child's capacity to benefit from other psychosocial interventions

### Antipsychotics

- Antipsychotic medications have been extensively used in the treatment of acute and chronic aggression in a variety of populations (Werry and Aman, 1975)
- Studies indicate that atypical antipsychotics have generally been significantly more efficacious than placebo in treating aggression, but have varying side effect profiles
- In children with disruptive behavior disorders, risperidone has been most extensively studied (Findling 2000, Croenberghs 2005, Aman 2004)

## FDA Approved Antipsychotics in Children and Adolescents

*\*\*due to significant health risks when prescribing it is recommended to consult with a child psychiatrist before prescribing.*

Trade Name	Generic Name	FDA Approved Age and Indication	Dosage
Abilify	Aripiprazole	13 yrs and older for schizophrenia  6-17 yrs for irritability associated with autism	Start: 2 mg qd x 2 days, then 5 mg qday x 2 days, give subsequent dose increases in 5 mg increments  Max: 30 mg/day
Risperdal	Risperidone	13 yrs and older for schizophrenia  5 to 16 yrs for irritability associated with autism	Start: 0.5 mg qday, then increase 0.5 mg/day q3-7 days to target 3 mg/day  Max Dose: 6 mg/day
Seroquel	Quetiapine	13 yrs and older for schizophrenia	Start: 25 mg bid x 1 day, then 50 mg bid x 1 day, then increase by 100 mg/day up to 200 mg bid by day 5; then may increase by 50-100 mg/day as needed  Max Dose: 600-800 mg/day
Zyprexa	Olanzapine	13-17 yrs for schizophrenia and bipolar, manic/mixed  (not first line treatment due to increase in weight gain)	Start: 2.5-5 mg qday, increase in 2.5-5 mg increments  Max Dose: 20 mg/day

### Antipsychotic Adverse Effects

- Atypical antipsychotic medications can cause weight gain and can alter metabolism, increasing risk for diabetes and hyperlipidemia. A child/adolescent's weight, height, BMI, and blood pressure should be measured at baseline/pre-treatment and at every subsequent visit while taking an antipsychotic medication. Children/adolescents of child bearing age should have a urine pregnancy test at each visit as well. Additionally, fasting blood sugar, fasting total cholesterol, fasting LDL, fasting HDL, and fasting triglycerides should be obtained at baseline/pretreatment and at 6 month intervals while taking an antipsychotic medication.
- Typical antipsychotic medications can cause side effects related to physical movement, such as:
  - Rigidity
  - Persistent muscle spasms
  - Tremors

- Restlessness
- Long-term use of antipsychotic medications may lead to a condition called tardive dyskinesia (TD). TD causes muscle movements a person can't control. The movements commonly happen around the mouth. TD can range from mild to severe, and in some people the problem cannot be cured. Sometimes people with TD recover partially or fully after they stop taking medication
- Neuroleptic malignant syndrome is a serious adverse reaction and is associated with mental status changes, muscular rigidity, hyperthermia, psychomotor changes, signs of autonomic instability and elevated creatinine phosphokinase (CPK). It is considered a rare but dangerous reaction. Symptoms of neuroleptic malignant syndrome usually appear abruptly and can be of long duration

### Antipsychotic Monitoring

- Weight
- AIMS (Abnormal Involuntary Movement Scale)
- Fasting Blood Sugar
- Hemoglobin A1c
- Fasting Lipid Profile
- Liver Function Tests
- Urine Pregnancy Test

### Stimulants

- No definitive conclusions about effectiveness
- Stimulants evaluated in small studies have been effective in reducing aggression primarily in children with co-morbid ADHD (Kaplan 1990; Klein 1999)
- Connor 2002 demonstrated stimulants to be as effective for aggressive symptoms within the context of ADHD as they are for the core symptoms of inattention, impulsivity, and hyperactivity; however, the effect size for overt aggression has not been shown to diminish in the presence of Conduct Disorder
- Dextroamphetamine (Dexedrine) and methylphenidate (Ritalin) are the most studied agents in the treatment of Conduct Disorder

### FDA Approved Stimulants in Children and Adolescents

Trade Name	Generic Name	FDA approved Age and Indication(s)	Dosage
Adderall	Amphetamine	3 yrs and older for ADHD and Narcolepsy	3-5 yrs: Start 2.5 mg qam, increase 2.5 mg/day qweek  >6 yrs: Start 5 mg qam or bid, increase 5 mg/day qweek  Max Dose: 40 m/day; divided doses at 4-6 hr intervals
Trade Name	Generic Name	FDA approved Age	Dosage

		<b>and Indication(s)</b>	
Adderall XR	Amphetamine (extended release)	6 yrs and older for ADHD	6-12 yrs: Start 5-10 mg qam, increase 5-10 mg/day qweek Max Dose: 30 mg/day  13-17 yrs: Start 10 mg qam, increase 10 mg qam/day qweek Max Dose: 40 mg/day
Concerta	Methylphenidate (long acting)	6 yrs and older for ADHD	Start: 18 mg qam; increase 18 mg/day qweek  Max Dose (6-12 yrs): 54mg/day Max Dose (13-17 yrs): 2mg/kg/day or 72 mg/day
Daytrana	Methylphenidate Patch	6 yrs and older for ADHD	Start: 10 mg/9h patch qday, may increase to next size patch q 7days  Max Dose: 30 mg/9h patch qday
Dexedrine	Dextroamphetamine	3 yrs and older for ADHD and narcolepsy	2.5 Start: 5 mg qam, increase 5 mg/day qweek  Max Dose: 60 mg/day mg/day, increased by 2.5 mg at weekly intervals (not to exceed 0.5 mg/kg/day)
Focalin	Dexmethylphenidate	6 yrs and older for ADHD	Start: 2.5 mg bid; increase 5-10 mg/day qweek  Max Dose: 20 mg/day
Focalin XR	Dexmethylphenidate (extended release)	6 yrs and older for ADHD	Start: 5 mg qam, increase by 5 mg/day qweek  Max Dose: 30 mg qday
<b>Trade Name</b>	<b>Generic Name</b>	<b>FDA Approved Age and Indication(s)</b>	<b>Dosage</b>

Metadate CD	Methylphenidate Hydrochloride (long acting)	6 yrs and older for ADHD	Start: 20 mg qday; increase 10-20 mg/day qweek  Max Dose: 60 mg qday
Metadate ER	Methylphenidate Hydrochloride (extended release)	6 yrs and older for ADHD	Start: 10 mg qam, increase 10 mg/day qweek  Max Dose: 2 mg/kg/day up to 60 mg/day
Methylin	Methylphenidate Hydrochloride (oral solution and chewable tablets)	6 yrs and older for ADHD	Start: 0.3 mg/kg bid or 2.5-5 mg bid; increase 0.1 mg/kg/dose or 5-10 mg/day qweek  Max Dose: 2 mg/kg/day, up to 60 mg/day
Methylin ER	Methylphenidate Hydrochloride (extended release)	6 yrs and older for ADHD	Start: 10 mg qday, increase 10 mg/day qweek  Max Dose: 2 mg/kg/day up to 60 mg/day
Ritalin	Methylphenidate	6 and older for ADHD	Start: 2.5-5 mg tid, increase 5-10 mg/day qweek  Max Dose: 2 mg/kg/day up to 60 mg/day
Ritalin SR	Methylphenidate (extended release)	6 and older for ADHD	Start: 20 mg qam, increase 20 mg/day qweek  Max Dose: 2 mg/kg/day up to 60 mg/day
Ritalin LA	methylphenidate (long acting)	6 and older for ADHD	Start: 20 mg qam, increase 10 mg/day qweek  Max Dose: 60 mg/day
<b>Trade Name</b>	<b>Generic Name</b>	<b>FDA Approved Age and Indication(s)</b>	<b>Dosage</b>



Vyvanse	lisdexamfetamine dimesylate	6 and older for ADHD	Start: 30 mg qday; increase 10-20 mg/day q week Max Dose: 70 mg/day
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### Stimulant Adverse Effects

- Appetite suppression, nausea, stomachache
- Insomnia
- Mood changes: sadness, dampening, agitation, irritability, emotionality
- Jitteriness
- Headache
- Growth delay by age 21 (Kramer et al, JAACAP, April 2000)
  - 2.6 inches shorter, if initial nausea/vomiting
  - 10 pounds lighter, if higher stimulant dose for 7 months

### Stimulant Monitoring

- Height/Weight
- Blood Pressure/Heart Rate
- EKG

### Antidepressants (SSRIs/SNRIs, bupropion, TCAs)

- The number of studies of antidepressants in the treatment of Conduct Disorder is small despite the degree of co-morbidity with depression
- There is **NO** FDA approved antidepressant for the treatment of any of the disruptive behavior disorders
- SSRIs
  - **NO** FDA approved SSRI for the treatment of a disruptive behavior disorder
  - Theoretically, SSRIs may be beneficial in Conduct Disorder given the evidence of serotonergic dysfunction in disorders of impulse control
  - Adult studies have suggested that the SSRIs may have anti-aggressive effects
  - In a small study by Ghaziuddin and Alessi (1992), Trazodone was found to be effective for treatment of aggression in children
- Bupropion
  - An open label trial of bupropion was positive in a sample of adolescents with co-morbid ADHD and substance use plus Conduct Disorder (Riggs 1998)
  - In boys with Conduct Disorder and ADHD, treatment with bupropion resulted in improvements in behavior, affect, and anxiety (Simeon, 1986)
- TCAs
  - Puig Antich (1982) found that Conduct Disorder symptoms abated after imipramine treatment in a group of boys with co-morbid Major Depressive Disorder and Conduct Disorder
  - Clomipramine and imipramine are generally not used due to their side effect profile

### FDA Approved Antidepressants in Children and Adolescents

Trade name	Generic Name	FDA Approved Age and Indication(s)	Dosage
Prozac	fluoxetine	8 yrs and older for Major Depressive Disorder (MDD)  6 yrs and older for OCD (Obsessive Compulsive Disorder)	Start: 10 mg qday , increase 10 mg q2-4 weeks  Max Dose: 20-60 mg/day
Zoloft	sertraline	6 yrs and older for OCD	6-12 yrs: Start: 25 mg qday, increase 25-50 mg/day qweek  13 yrs and older: Start: 50 mg qday  Max Dose: 200 mg/day
Luvox	fluvoxamine	8 yrs and older for OCD	8-11 yrs: Start: 25 mg qhs, increase 25 mg qweek Max Dose: 200 mg/day  12yrs and older: Start: 25 mg qhs, increase 25 mg/day qweek Max Dose: 300 mg/day
Lexapro	escitalopram	12 yrs and older for MDD	Start: 10 mg qday, may increase after 3 weeks by 10 mg increments  Max Dose: 20 mg/day
Wellbutrin	bupropion	6 yrs and older for ADHD	Dose: 1.4-6 mg/kg/day; Max Dose: 150 mg/dose, 450 mg/day
Trade name	Generic Name	FDA Approved Age and Indication(s)	Dosage

Tofranil*	Imipramine	6 and older for MDD and nocturnal enuresis	6-12 yrs: Start: 1.5 mg/kg/day div qd-tid; increase 1-1.5 mg/kg/day q3-4 days Max Dose: 5 mg/kg/day  >12 yrs: Start: 30-40 mg/day div qd-tid, increase 10-25 mg/day q3-4 days Max Dose: 100 mg/day
Anafranil*	clomipramine	10 yrs and older for OCD	Start 25 mg qday, increase 25 mg/day qweek Max Dose: 3 mg/kg/day up to 100 mg/day in first 2weeks, up to 200 mg maintenance

#### Antidepressant Adverse Effects

- Increased suicidal thinking (Black Box Warning)
- Serotonin syndrome (muscle rigidity, tremulousness, myoclonus, autonomic instability, agitated confusion, rhabdomyolysis)
- Akathisia (uncontrollable inner restlessness)
- Hypomania
- Discontinuation syndromes (nausea, vomiting, headache, tremor, dizziness, fatigue, irritability, palpitations, rebound depression/anxiety)
- GI effects (dry mouth, constipation, diarrhea)
- Sleep disturbance
- Irritability
- Disinhibition
- Agitation jitteriness
- Headache

#### Antidepressant Monitoring

- Suicidal thinking/ideation

#### Mood Stabilizers and Antiepileptics

- **NO** FDA approval for use in disruptive behavior disorders; however, there is evidence in the literature that mood stabilizers and antiepileptics can decrease aggression, impulsivity, and mood symptoms often associated with the disruptive behavior disorders
- Lithium has been shown to have anti-aggressive properties and some studies have been shown to demonstrate reduction of aggression (Rifkin 1997, Campbell 1995)
- In a study by DeLong and Aldershof (1987) lithium was shown to be effective in reducing aggressive and explosive behavior in a subgroup of children with behavior disorder who had symptoms of an affective disorder

- When co-morbid bipolar disorder is suspected, trials of lithium are indicated
- Use of Depakote in children with Oppositional Defiant Disorder or Conduct Disorder did prove to decrease explosiveness and mood lability in a double blind controlled study (Donovan 2000)
- Depakote can be useful as monotherapy for the treatment of impulsivity and reactive aggression in adolescents with Bipolar Disorder and disruptive behavior disorders
- Carbamazepine has been shown to be useful in the treatment of aggressive behavior (Kafantaris et al. 992; Rosenberg et al. 1994)

### FDA Approved Mood Stabilizers and Antiepileptics in Children and Adolescents

Trade Name	Generic Name	FDA approved age and indication(s)	Dosage
Eskalith	lithium carbonate	12 yrs and older for Bipolar Disorder	Start: 10mg/kg/day div bid-qid, then increase 5-10 mg/kg/day q5 days until adequate response  Max Dose: 15-60 mg/kg/day
lithium citrate (generic only)	lithium citrate	12 yrs and older for Bipolar Disorder	Start: 10mg/kg/day div bid-qid, then increase 5-10 mg/kg/day q5 days until adequate response  Max Dose: 15-60 mg/kg/day
Lithobid	lithium carbonate	12 yrs and older for Bipolar Disorder	Start: 10mg/kg/day div bid-qid, then increase 5-10 mg/kg/day q5 days until adequate response  Max Dose: 15-60 mg/kg/day
Depakote	divalproex sodium (valproic acid)	2 yrs and older for <u>seizures</u>	Start 10-15 mg/kg/day div bid-tid, increase 5-10 mg/kg/day qweek  Max Dose: 60 mg/kg/day
Lamictal	lamotrigine	any age for <u>seizures</u>	Start 0.3mg/kg/day x 2 week, then 0.6 mg/kg/day x 2 week, then increase 0.6 mg/kg/day q1-2 weeks  Max Dose: 300 mg/day <i>**above is dosing with non-valproate, non-inducing AED adjunct, MUST adjust dosing if using either of these</i>
Trade name	Generic Name	FDA Approved Age and Indication(s)	Dosage

Tegretol	Carbamazepine	any age for <u>seizures</u>	<p>&lt;6 yrs old: Start: 10-20 mg/kg/day, increase 5-10 mg/kg/day qweek Max Dose: 35 mg/kg/day</p> <p>6-11 yrs old: Start: 100 mg bid, increase 100 mg/day qweek Max Dose: 1000mg/day</p> <p>12 yrs and older: Start: 200 mg bid, increase 200 mg/day qweek Max Dose: 1000-1200 mg/day</p>
Topamax	topiramate	2 yrs and older for <u>seizures</u>	<p>Start: 25 mg qhs x 1 week, then 25 mg bid x 1 week, then increase 25-50 mg/day qweek</p> <p>Max Dose: 250-400 mg/day</p>
Trileptal	oxcarbazepine	4 yrs and older for seizures	<p>Start: 8-10 mg/kg/day, increase 5 mg/kg/day q 3days or max of 10 mg/kg/day q week*</p> <p>Max Dose: dependent on weight <i>*monotherapy</i></p>

### Mood Stabilizers and Antiepileptics Adverse Effects

- \*The following is a list of major adverse effects and does not include all possible adverse events.
  - **Lithium:** Thyroid disease, leukocytosis, polyuria, diarrhea, disturbances in renal function, increased levels with use of NSAIDs and ACE inhibitors
  - **Depakote:** Neural tube defects, liver dysfunction, thrombocytopenia, increased levels with other medications, and pancreatitis
  - **Lamictal:** Stevens Johnson Syndrome. Only FDA approved for ages 18 and older
  - **Tegretol:** Auto-induction of liver enzymes leading to a decrease in level of Tegretol and other medications, agranulocytosis

### Mood Stabilizers and Antiepileptics Monitoring

- **Lithium:** Lithium Level, CBC, BMP, , B-hcg, baseline EKG (antiarrhythmias)
- **Depkote:** Valproic Acid Level, CBC, LFTs, B-hcg, amylase and lipase
- **Tegretol:** Tegretol level, CBC, LFTs, , B-hcg
- **Trileptal:** Consider LFTs, B-hcg
- **Topamax:** Consider LFTs, B-hcg

### Alpha Agonists

- **NO** FDA approval for the use in disruptive behavior disorders
- Some evidence that clonidine has potential efficacy for aggression in ADHD with either co-

morbid conduct disorder or oppositional defiant disorder (Connor et al 2000)

### FDA Approved Alpha Agonists in Children and Adolescents

Trade Name	Generic Name	FDA approved age and indication(s)	Dosage
Kapvay	clonidine (extended release)	6 yrs and older; ADHD	Start: 0.1 mg qhs, increase by 0.1 mg/day qweek Max Dose: 0.4 mg/day
Intuniv	guanfacine (extended release)	6 yrs and older; ADHD	Start: 1 mg qday, increase by 1mg/day qwk Max Dose: 4 mg/day

\*\*immediate release clonidine and guanfacine are often used off label as adjunct treatment for ADHD

#### Alpha-Agonists Adverse Effects

- Rebound hypertension
- Sedation
- Bradycardia
- Orthostatic hypotension

#### Alpha Agonists Monitoring

- Vital signs: Heart Rate and Blood Pressure

#### Clinical Cases

##### ■ Clinical Case 1 – Oppositional Defiant Disorder

John Henry is five years old. He was a fussy baby who was difficult to sooth. Now attending his third pre-school, he is in jeopardy of being dismissed again for his refusal to follow rules and for his angry outbursts. He has consistently had difficulty with his peers. He is disobedient at home as well and seems to deliberately annoy others.

- **Key symptoms:** disobedience, anger, annoys others
- **Assessment/Workup:** It will be important to get additional historical information as well as more data on his home situation and the parenting style
- **Treatment:** Refer parents for Parent Child Interactive Therapy (PCIT)
- **Prognosis:** Guarded if family history is positive for risk factors. Improved if family completes evidence-based treatment

##### ■ Clinical Case 2 – Conduct Disorder, Childhood-Onset Type

Mary Rose is nine years old. She is adopted. Her biological mother suffered from depression and her biological father was abusive. Mary Rose was removed from the home at age three, but not

before witnessing excessive arguing between her parents including physical fighting. Mary Rose spent time in foster care before being adopted three years ago. She has had difficulty adjusting to her new family and school. She initiates fights with her classmates and seems to enjoy intimidating them. She takes other's possessions and destroys them just for the fun of it. Last week she rode her bicycle outside of her neighborhood and was gone for three hours. She lied to her parents about where she had been and couldn't understand why they were worried about her.

- **Key symptoms:** annoys others, initiates fights, derives pleasure from intimidating others, destroys property, lacks empathy, disregards rules, lying
- **Assessment/Workup:** assess for co-occurring diagnosis (depression, learning disorders) and treat these if warranted
- **Treatment:** Refer parents for PCIT
- **Prognosis:** Very guarded given the positive biological risk factors, history of trauma and early age of onset

### ■ Clinical Case 3 - Conduct Disorder, Adolescent-Onset Type

Justin is 13 years old. He has typically been a good kid, but there have been problems for the past 8 months when he started skipping school and experimenting with marijuana. He is increasingly disrespectful of adults and is impulsively engaging in high risk behaviors. He has been hanging out with the wrong group of friends and is hostile toward his parents and their household rules as he thinks they are too restrictive. "After all, I am a teenager and should be able to make my own decisions" is his frequent reply. His mom suspects he has been "borrowing" money from her purse. His parents are understandably upset and asking for help.

- **Key symptoms:** disregarding rules, substance use, disrespectful of authority, taking money without permission
- **Assessment/Workup:** urinary drug screen (UDS) to enhance accountability
- **Treatment:** further assessment of substance use, UDS to moderate behavior and increase accountability, refer for family therapy to work on: parent-child relationship, expectations and natural consequences of behaviors
- **Prognosis:** good -especially given there is no prior symptoms and seems to be no family history; address substance usage to further mitigate risk

### ■ Clinical Case 4 – Conduct Disorder, Unspecified Type

Alexander is 17 and has recently been arrested for assault and battery. When arrested, he was carrying a stolen weapon. He has been living with "friends" since age 13 but occasionally surfaces at his mom's apartment when he needs money. His parents are divorced and have been since he was in grade school. Alexander's dad is currently incarcerated for sexual assault. His mom suffers from depression, and she cannot remember exactly when "Al" started having problems. He never liked school, and always had some problems getting along with others. Things got worse about fourth or fifth grade when he started being deliberately more defiant and his grades began to suffer severely. Al has always had a short fuse and seems to enjoy fighting. He has always liked to pick on kids who were younger than him. He has broken into his grandmother's house and taken prescription drugs from her medicine cabinet. She is afraid of him because she has seen him be bad-tempered toward

her other grandchild, and he teases her pet beagle. She has also caught him in several lies. He does not take responsibility for his actions and seems indifferent to the heartbreak he is creating for his family.

- **Key symptoms:** violates rules, property and rights of individuals, history of running away; seems to lack remorse
- **Assessment/Workup:** formal evaluation and referral to programs that would help with social obstacles (i.e., GED, employment, etc.)
- **Treatment:** evaluate to identify and treat any co-occurring diagnoses; refer for substance use treatment if warranted
- **Prognosis:** very poor; likely to develop Antisocial Personality Disorder (ASPD); family history is positive, exact age at onset is unknown, but likely early; multiple environmental risk factors

#### ■ **Clinical Case 5 – Disruptive Behavior Disorder, Not Otherwise Specified**

Joey is a 7 year old child who met all developmental milestones. As an infant he was very difficult to “get on schedule” or comfort. In fact, he continues to have difficulties falling asleep at night. Joey was once asked to leave a preschool because he refused to sit in circle time and became very disruptive. Recently, Joey was sent to the principal’s office for the first time for “playing too roughly” during recess. He is described as being “stubborn” and often will throw “temper tantrums” when he does get his way. His mother works very long hours and spends limited time with Joey. His father is a strict disciplinarian and has very little patience with Joey.

- **Key symptoms:** disruptive; difficult temperament; authoritarian parenting style; mother’s lack of availability
- **Assessment/Workup:** consider testing for learning and/or speech and language disorders
- **Treatment:** referral for PCIT
- **Prognosis:** good if parent’s engage in PCIT and implement changes while Joey is still young

### Family Resources

- American Academy of Child and Adolescent Psychiatry (AACAP) Facts for Families:  
<http://aacap.org/page.wv?name=Schizophrenia+in+Children&section=Facts+for+Families>
- American Academy of Child and Adolescent Psychiatry (AACAP) Bipolar Disorder Resource Center:  
<http://aacap.org/cs/BipolarDisorder.ResourceCenter>
- American Academy of Child and Adolescent Psychiatry (AACAP) Depression Resource Center:  
<http://aacap.org/cs/Depression.ResourceCenter>
- American Academy of Child and Adolescent Psychiatry (AACAP) Anxiety Disorders Resource Center:  
<http://aacap.org/cs/AnxietyDisorders.ResourceCenter>



- Oppositional Defiant Disorder/Family Village  
[http://www.familyvillage.wisc.edu/lib\\_odd.htm](http://www.familyvillage.wisc.edu/lib_odd.htm)
- How to Handle Your Child’s Disruptive Behavior  
<http://childparenting.about.com/od/disruptivebehaviorproblem/a/disruptivebehav.htm>
- All Family Resources  
<http://www.familymanagement.com/facts/english/facts33.html>
- Conduct Disorders: A soft place to land for the battle weary parent  
<http://www.conductdisorders.com/>

1. **The Child Psychiatry Telemedicine, Liaison & Consult (Psych TLC) service is free and available for:**

- Consultation on psychiatric medication related issues including:
  - Advice on initial management for your patient
  - Titration of psychiatric medications
  - Side effects of psychiatric medications
  - Combination of psychiatric medications with other medications
- Consultation regarding children with mental health related issues
- Psychiatric evaluations in special cases via tele-video
- Educational opportunities

This service is free to all Arkansas physicians caring for children. Telephone consults are made within 15 minutes of placing the call and can be accomplished while the child and/or parent are still in the office.

**Psych TLC Phone numbers: 501-526-7425 or 1-866-273-3835**

2. **Arkansas Building Effective Services for Trauma (AR BEST) has developed a comprehensive list of the names and contact information of clinicians who are trained to provide treatment for children who had been exposed to severe trauma:**

<http://uams.edu/arbest/map.asp>

For more information regarding AR BEST: [arbest\\_info@uams.edu](mailto:arbest_info@uams.edu)

3. **Arkansas Division of Behavioral Health Services**

<http://humanservices.arkansas.gov/dbhs/Pages/default.aspx>

501-686-9465

4. **PTSD in Children and Teens: Web Resource Link:**

<http://ptsd.va.gov/public/web-resources/web-children-adolescents.asp>

**Arkansas Teen Crisis Hotline**

Teen Crisis Hotline: (888) 798-8336

Teen Crisis Hotline: (479) 872-8336

**5. National Alliance on Mental Illness:**

<http://www.nami.org/>

501-661-1548

**6. Arkansas Payment Improvement Initiative**

**Oppositional Defiant Disorder, Episode of Care**

<http://www.paymentinitiative.org/episodesOfCare/Pages/Oppositional-Defiant-Disorder.aspx>

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