Principles of Practice Regarding the Use of Psychotropic Medication under Age 6

Level 0
- Comprehensive multi-informant, multi-modal, multi-disciplinary assessment for those with positive screen.
- Use of validated measures for assessing psychiatric symptoms and impairment in young children.

Recommended measures of early childhood symptoms include:
- Ages 12-36 months: Strengths and Difficulties Questionnaire (SDQ) found at www.sdqinfo.com
  Infant-Toddler Social Emotional Assessment (ITSEA) and the Brief Infant-Toddler Social Emotional Assessment (BITSEA) found at www.pearsonassess.com
- Ages 3-6 years, Strengths and Difficulties Questionnaire or the Early Childhood Inventory (ECI) found at http://www.checkmateplus.com/product/eci-4.htm

A comprehensive mental health assessment includes:
- A comprehensive assessment of the full range of psychiatric symptoms and disorders, as well as impairment from these symptoms and disorders
- A full developmental assessment
- A full medical history
- An assessment of family psychiatric history which includes past and current history of parental psychiatric illnesses, substance abuse and treatment history of parents, parents figures (e.g., step parent) siblings, and other relatives
- Assessment of family structure and functioning, parent-child relationship and interaction
- Assessment of environmental risk factors and stressors including history of abuse (physical, sexual, neglect), traumatic life events, domestic violence, economic instability, etc.

Level 1
- Always start with psychosocial treatment. Parental involvement is essential, or as needed, other care givers or school interventions.

- Monitor response to indicate parental and family interventions using reliable and valid measures of changes in targeted symptoms of dysfunctions.

- Except in rare cases, try at least 12 week trial of psychosocial interventions before considering medication.
Principles of Practice Regarding the Use of Psychotropic Medication under Age 6

Level 2

- If medications are being considered, first reassess diagnosis and diagnostic formulation.

  If a decision is made to initiate medication:

  - Initiate with monotherapy. Start low, go slow.

  - Except in rare cases, use monotherapy.

  - After 6-9 months of stabilization, plan down titration trial to determine if the medication is still needed and effective, (taper or discontinuation trial).

  - Continue psychosocial treatment during treatment with medication.

  - Use of psychotherapeutic medication in children under the age of 24 months is not recommended unless there are rare and extenuating circumstances.
Dosing Recommendations Regarding the Use of Antipsychotic Medication in Children under 6 Years of Age

The use of antipsychotic medications in preschoolers (children under six years of age) which is generally “off-label”, is not recommended and should only be considered under the most extraordinary circumstances. Disruptive aggression in autism is one such circumstance. Adequately powered studies have not been conducted in preschoolers.

Before considering pharmacological treatment for preschoolers the following guidelines are strongly recommended:

1. Must have developmentally-appropriate, comprehensive psychiatric assessment with diagnoses, impairments, treatment target and treatment plans clearly identified and documented.

2. Assessment must include evaluation of parental psychopathology and treatment needs, as well as family functioning.

3. Psychosocial treatments should precede the use of psychotropic medications and should continue if medications are prescribed.

Antipsychotic Dosing Information for Children Under Age 6 [used under rare circumstances]

The dosing information is based on expert opinion and therefore is Level C evidence

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risperdal†</td>
<td>Starting dose: 0.125 mg/day</td>
</tr>
<tr>
<td>(risperidone)</td>
<td>Maximum dose: 1.5 mg/day</td>
</tr>
<tr>
<td>Abilify†</td>
<td>Starting dose: 1 mg/day</td>
</tr>
<tr>
<td>(aripirazole)</td>
<td>Maximum dose: 7.5 mg/day</td>
</tr>
</tbody>
</table>

† Oral concentrate commercially available
ADHD Medication Guidelines for Children under Age 6

**Level 0**
- Comprehensive assessment and psychoeducation about ADHD, including clearly defined treatment expectations. Consider co-morbid developmental language disorder, other learning disabilities (LD), or Autism Spectrum Disorders (ASD).

- Facilitate family engagement, psychoeducation about ADHD (evidence-based behavior and educational interventions and medication treatments), and treatment preference assessment. Treatment response should be monitored using rating scales and appropriate safety assessments (vital signs, height and weight).

**Level 1**
- Parent management/skills training/or other behavioral intervention at home and/or school for a minimum of 12 weeks.

**Level 2**
- Monotherapy with methylphenidate formulation.

**Level 3**
- If methylphenidate unsuccessful, could consider monotherapy with atomoxetine.

**Level 4**
- Consider amphetamine formulations which have FDA indication for ages 3-5 years, but limited clinical trial evidence base; may also consider alpha 2 agonists; but no published data available.

  - Taper or discontinuation after 6 months of any stable improvement on any effective medication treatment to determine lowest effective dose and possibility of discontinuation.

**Not Recommended:**
- Antipsychotic medication to treat core symptoms of ADHD in absence of ASD.
## Medications Used for ADHD in Children under 6 Years of Age

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Starting Dose recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Methylphenidate Formulations¹:</strong></td>
<td></td>
</tr>
<tr>
<td>Short Acting:</td>
<td><strong>1.25 t.i.d. titrate as needed to doses not exceeding 1 mg/kg/day</strong></td>
</tr>
<tr>
<td>Methyltin®, Ritalin®</td>
<td><strong>Recommendations extrapolated from the Preschool ADHD Treatment Study (PATS)</strong></td>
</tr>
<tr>
<td>Methylin Oral Solution®</td>
<td></td>
</tr>
<tr>
<td><strong>Atomoxetine²</strong></td>
<td><strong>10mg/day – titrate as needed to doses not to exceed 1.4mg/kg/day</strong></td>
</tr>
<tr>
<td>Stratattera®</td>
<td><strong>Recommendations extrapolated from the Kratochvil et al. 2011 study</strong></td>
</tr>
<tr>
<td><strong>Amphetamine Formulations³:</strong></td>
<td></td>
</tr>
<tr>
<td>Short Acting:</td>
<td><strong>2.5 mg/day – titrate as needed to doses not exceeding 0.5 mg/kg/day</strong></td>
</tr>
<tr>
<td>Adderal®</td>
<td><strong>Amphetamine target dose is generally one-half to two-thirds of methylphenidate dose</strong></td>
</tr>
<tr>
<td>DextroStat®</td>
<td></td>
</tr>
<tr>
<td>ProCentra® Oral Solution</td>
<td></td>
</tr>
<tr>
<td><strong>Alpha Agonists⁴:</strong></td>
<td><strong>Starting dose not to exceed:</strong></td>
</tr>
<tr>
<td>Clonidine</td>
<td><strong>0.05 mg/day</strong></td>
</tr>
<tr>
<td>Guanfacine</td>
<td><strong>0.5 mg/day</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Monitor carefully for excessive sedation, increased irritability</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Recommendations based on expert opinion</strong></td>
</tr>
</tbody>
</table>

### Notes:

1. No FDA indication for children younger than 6 years old; based on Preschool ADHD Treatment Study results
3. FDA indication for ADHD treatment of children 3-5 years old, but not clinical trial study results available.
4. No FDA indication for ADHD except Guanfacine XR in children 6 years and older; no clinical trial study results available for alpha agonist use for ADHD in children below age 6 years old.
Anxiety Disorders in Children under Age 6

Level 0

- Comprehensive assessment (refer to Principles of Practice) that includes history of stressors, trauma, parental anxiety and observation of child-parent interactions.
- Rating scales specifically for young children with anxiety symptoms are limited but the Preschool Anxiety Scale (parent report) is available at no charge: [http://www2.psy.uq.edu.au/~sues/scas/](http://www2.psy.uq.edu.au/~sues/scas/).
- Child and parent rating of anxiety symptom severity and impairment with feelings thermometer or faces barometer.

Level 1

- Start with psychotherapy for 3-6 months that includes the parents and exposure-based cognitive-behavioral therapy (CBT) adapted to young children.
- Assess primary caregivers for anxiety disorders and referral for treatment if impacting child’s treatment progress.
- Address parental accommodation to child’s symptoms of anxiety.

Level 2

- If poor or partial response to psychosocial treatment after 3-6 months, consider combination treatment with fluoxetine and concurrent psychotherapy for children 4-5 years old.
- Review black-box warning with parents and monitor for suicidality.
- 8-10 week trial of fluoxetine if well tolerated starting at 1-2 mg/day.
- Maximum dosing of 5-8 mg/day.
- Increased risk for disinhibition and behavioral activation in young child.
- Discontinuation trial after 6-9 months of effective medication treatment with gradual downward titration.

**Under 4 years, see Principles of Practice**

Level 3

- If fluoxetine is not successful, consider sertraline or fluvoxamine in combination with concurrent psychotherapy. Start with low dosing and monitor closely.

Not Recommended for Children Under Age 6 with Anxiety Disorders:

- Use of tricyclic antidepressants (TCAs) or alpha-agonists for anxiety disorders in preschoolers is not recommended.
- Ongoing use of benzodiazepines is not recommended. May be used short-term for extreme anxiety with medical or dental procedures.
- The use of medication without psychosocial treatment is not recommended.
- Clinicians should realize that data below age 6 for treating anxiety disorders is limited. Exercise caution in prescribing pharmacological and caution in using pharmacological treatment below age 6 is warranted.
Disruptive Behavior Disorder or Severe Aggression in Children under Age 6

**Level 0**
- Comprehensive diagnostic assessment (See Principles of Practice).

**Level 1**
- Psychosocial intervention.
  - Evidence-based psychotherapeutic intervention (parent management training or parent-child interaction therapy) first line treatment for 3-6 months.

**Level 2**
- Only in cases of severe impairment, severe aggression, or failure of psychosocial treatment.
  - Low dose risperidone.

**Level 3**
- Discontinuation trial after 6 months of any effective medication treatment.

**Not Recommended:**
- Use of medication without concurrent psychosocial treatment.
Major Depression in Children Under Age 6

**Level 0**  
Comprehensive assessment (See Principles of Practice).

**Level 1**  
Psychotherapeutic intervention (e.g., dyadic therapy) for 3-6 months; assessment of primary care giver depression and referral for treatment if present.

**Level 2**  
If poor response to psychosocial treatment after 3-6 months, consider combination treatment with fluoxetine and concurrent psychosocial treatment. Re-assess diagnosis, primary care giver response to treatment.

**Under 3 years, see Principles of Practice**

**Level 3**  
Fluoxetine - 4-5 years old  
- Starting dose: 1 mg/day  
- Maximum dose: 5 mg/day  
- Discontinuation trial after 6 months of any effective medication treatment with gradual downward titration.

**Not Recommended:**  
- Use of tricyclic antidepressants (TCAs) or paroxetine.  
- The use of medication without psychosocial treatment.
### ADHD Medication Guidelines for Children and Adolescents Age 6-17 Years

**Level 0**
- Comprehensive assessment includes a detailed developmental and symptom history. Use of rating scales is highly recommended such as:
  - ADHD Rating Scale IV questionnaire.
  - Conners' ADHD rating scale.
  - Vanderbilt ADHD Diagnostic Parent and Teacher Rating scales.
  - Facilitate family engagement, psychoeducation about ADHD (evidence-based behavior and medication treatments, and educational interventions), and treatment preference assessment. Treatment response should be monitored using rating scales and appropriate safety assessments (vital signs, height, weight).

**Level 1**
- Psychostimulant monotherapy (methylphenidate class or amphetamine class, either short or long acting). If first choice is ineffective try alternate preparation. (See table of ADHD medications).

**Level 2**
- 2a. Atomoxetine or monotherapy with extended release alpha 2 agonist.
- 2b. If partial stimulant response, consider combination of extended release alpha 2 agonist with psychostimulant.

**Level 3**
- Immediate release alpha 2 agonist.

**Level 4**
- Diagnostic reconsideration if none of the above agents result in satisfactory treatment. Consider bupropion or tricyclic antidepressant (desipramine not recommended due to safety concerns). Consider other alpha-agonist not tried at level 3 (can be used as monotherapy or combination). Despite limited evidence these medications may be considered.

**Not Recommended:**
- Antipsychotic medication to treat core symptoms of ADHD.
### FDA Approved ADHD Medications 6-17 Years

<table>
<thead>
<tr>
<th>Generic Class/Brand Name</th>
<th>Typical Starting Dose</th>
<th>FDA Max/Day</th>
<th>Off-Label Max/Day</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Methylphenidate Preparations</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Short-acting</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Focalin®</td>
<td>2.5 mg b.i.d.</td>
<td>20 mg</td>
<td>50 mg</td>
<td>Short acting stimulants often used as initial treatment in children (&lt;16kg), have disadvantage of b.i.d. - t.i.d. dosing to control symptoms throughout the day.</td>
</tr>
<tr>
<td>Methylin®</td>
<td>5 mg b.i.d.</td>
<td>60 mg</td>
<td>&gt;50 kg: 100 mg</td>
<td></td>
</tr>
<tr>
<td>Ritalin®</td>
<td>5 mg b.i.d.</td>
<td>60 mg</td>
<td>&gt;50 kg: 100 mg</td>
<td></td>
</tr>
<tr>
<td><strong>Intermediate-acting</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metadate ER®</td>
<td>10 mg q.a.m.</td>
<td>60 mg</td>
<td>&gt;50 kg: 100 mg</td>
<td></td>
</tr>
<tr>
<td>Metadate CD®</td>
<td>20 mg q.a.m.</td>
<td>60 mg</td>
<td>&gt;50 kg: 100 mg</td>
<td></td>
</tr>
<tr>
<td>Methylin ER®</td>
<td>10 mg q.a.m.</td>
<td>60 mg</td>
<td>&gt;50 kg: 100 mg</td>
<td></td>
</tr>
<tr>
<td>Ritalin LA®</td>
<td>20 mg q.a.m.</td>
<td>60 mg</td>
<td>&gt;50 kg: 100 mg</td>
<td></td>
</tr>
<tr>
<td>Ritalin SR®</td>
<td>10 mg q.a.m.</td>
<td>60 mg</td>
<td>&gt;50 kg: 100 mg</td>
<td></td>
</tr>
<tr>
<td><strong>Long-acting</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concerta®</td>
<td>18 mg q.a.m.</td>
<td>72 mg</td>
<td>108 mg</td>
<td></td>
</tr>
<tr>
<td>Daytrana® patch</td>
<td>Begin with 10 mg patch q.d., then titrate up by patch strength 5 mg q.a.m.</td>
<td>30 mg</td>
<td>Not yet known</td>
<td></td>
</tr>
<tr>
<td>Focalin XR®</td>
<td>5 mg q.a.m.</td>
<td>30 mg</td>
<td>50 mg</td>
<td></td>
</tr>
<tr>
<td><strong>Amphetamine Preparations</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Short-acting</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adderall®</td>
<td>5 mg q.d.- b.i.d.</td>
<td>40 mg</td>
<td>&gt;50 kg: 60 mg</td>
<td>Short acting stimulants often used as initial treatment in children (&lt;16kg), but have disadvantage of b.i.d. - t.i.d. dosing to control symptoms throughout the day.</td>
</tr>
<tr>
<td>DextroStat®</td>
<td>5 mg q.d.- b.i.d.</td>
<td>40 mg</td>
<td>&gt;50 kg: 60 mg</td>
<td></td>
</tr>
<tr>
<td>Procentra Oral Solution®</td>
<td>5 mg q.d.- b.i.d.</td>
<td>40 mg</td>
<td>&gt;50 kg: 60 mg</td>
<td></td>
</tr>
<tr>
<td><strong>Longer-acting</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dexedrine</td>
<td>5-10 mg q.d.- b.i.d.</td>
<td>40 mg</td>
<td>Not yet known</td>
<td>Longer acting stimulants offer greater convenience, confidentiality, and compliance with single daily dosing but may have greater problematic effects on evening appetite and sleep.</td>
</tr>
<tr>
<td>Spansule®</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adderall XR®</td>
<td>10 mg q.d.</td>
<td>30 mg</td>
<td></td>
<td>Medicated CD® and Ritalin LA® caps may be opened and sprinkled on soft food. Concerta®, should not be crushed, chewed or broken. Swallow whole with liquids, nonabsorbable tablet shell may be seen in stool.</td>
</tr>
<tr>
<td>Vyvanse® (lisdexamfetamine)</td>
<td>30 mg q.d.</td>
<td>70 mg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Short acting stimulants** often used as initial treatment in children (<16kg), have disadvantage of b.i.d. - t.i.d. dosing to control symptoms throughout the day.

**Longer acting stimulants** offer greater convenience, confidentiality, and compliance with single daily dosing but may have greater problematic effects on evening appetite and sleep. Adderall XR cap may be opened and sprinkled on soft foods.
<table>
<thead>
<tr>
<th>Generic Class/ Brand Name</th>
<th>Typical Starting Dose</th>
<th>FDA Max/Day</th>
<th>Off-Label Max/Day</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selective norepinephrine reuptake inhibitor</td>
<td>&lt; 70 kg: 0.5 mg/kg/day for 4 days; then 1 mg/kg/day for 4 days; then 1.2 mg/kg/day</td>
<td>Lesser of 1.4 mg/kg or 100 mg</td>
<td>Lesser of 1.8 mg/kg or 100 mg</td>
<td>Not a schedule II medication. Consider if active substance abuse or severe side effects of stimulants (mood lability, tics); give q.a.m. or divided doses b.i.d. (for effects on late evening behavior). Do not open capsule; monitor closely for suicidal thinking and behavior, clinical worsening, or unusual change in behavior.</td>
</tr>
<tr>
<td>Alpha-adrenergic agonist (Intuniv) guanfacine®</td>
<td>1mg q.d. then titrate up by 1mg increments once per week</td>
<td>Lesser of 0.12 mg/kg or 4 mg q.d.</td>
<td>Lesser of 0.17 mg/kg or 4 mg q.d.</td>
<td>These are not a schedule II medication. Maximum dose limitations may result in low weight-based doses for adolescents and reduced efficacy. Sedation, somnolence and fatigue are common and tend to decline over time. Consider baseline ECG before starting. Tablets should not be crushed, chewed or broken before swallowing because this will increase the rate of guanfacine release. Do not administer with high fat meals due to increased exposure. May not see effects for 4-6 weeks. Review personal and family cardiovascular history. Taper off to avoid rebound hypertension.</td>
</tr>
<tr>
<td>KAPVAY® (clonidine)</td>
<td>0.1 mg/day at bedtime</td>
<td>0.4 mg/day in divided dose of 0.2mg BID</td>
<td>0.4 mg/day</td>
<td>Adjustment in the KAPVAY® dose for a patient’s body weight is not necessary to achieve optimal efficacy. KAPVAY® is an extended-release tablet, therefore should not be crushed, chewed or broken before swallowing. When discontinuing KAPVAY®, the total daily dose should be tapered in decrements of no more than 0.1 mg every 3 to 7 days</td>
</tr>
</tbody>
</table>
# ADHD Medication NOT FDA Approved 6-17 Years

<table>
<thead>
<tr>
<th>Generic Class/Brand Name</th>
<th>Typical Starting Dose</th>
<th>Max/Day</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alpha adrenergic agonists</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clonidine Catapres®</td>
<td>&lt; 45 kg: 0.05 kg q.h.s., titrate in 0.05 mg increments b.i.d., t.i.d., q.i.d.</td>
<td>40.5 - 45 kg: 0.3 mg; &gt;45 kg: 0.4 mg</td>
<td>May be used alone or as adjuvant to another medication for ADHD.</td>
</tr>
<tr>
<td>Guanfacine Tenex®</td>
<td>&lt; 45 kg: 0.5 mg q.h.s.; titrate in 0.5 mg increments b.i.d., t.i.d., q.i.d.</td>
<td>27 - 40.5 kg: 2 mg; 40.5 - 45 kg: 3 mg; &gt;45 kg: 4 mg</td>
<td>Effective for impulsivity and hyperactivity; modulating mood level; tics worsening from stimulants; sleep disturbances. May not see effects for 4-6 weeks. Review personal and family cardiovascular history. Consider pre-treatment ECG. Taper off to avoid rebound hypertension.</td>
</tr>
<tr>
<td><strong>Antidepressants</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bupropion Wellbutrin®</td>
<td>Lesser of 3 mg/kg/day or 150 mg/day as 75 mg twice daily</td>
<td>Lesser of 6 mg/kg or 300 mg/day. Dose should not exceed 150 mg per dose.</td>
<td>Lower seizure threshold; contraindicated if current seizure disorder or bulimia. Usually given in divided doses, b.i.d. or t.i.d. for children and adolescents, for both safety and effectiveness.</td>
</tr>
<tr>
<td>Wellbutrin SR®</td>
<td></td>
<td>150 mg per dose</td>
<td></td>
</tr>
<tr>
<td>Wellbutrin XL®</td>
<td></td>
<td>450 mg daily</td>
<td>XL form is once a day dosing only.</td>
</tr>
<tr>
<td>Tofranil® imipramine</td>
<td>1 mg/kg/day</td>
<td>Lesser of 4 mg/kg or 200 mg</td>
<td>Obtain baseline ECG before starting imipramine.</td>
</tr>
<tr>
<td>Pamelor® Aventil® Nortriptyline</td>
<td>0.5 mg/kg/day</td>
<td>Lesser of 2 mg/kg or 100 mg</td>
<td>Obtain baseline ECG before starting nortriptyline.</td>
</tr>
</tbody>
</table>
Anxiety Disorders in Children and Adolescents 6-17 years

Level 0
A comprehensive assessment includes:
■ Assessment of risk factors including stressors, trauma, bullying, social support systems, coping skills, learning disorders and school issues.
■ Assessment of family coping skills, parenting styles (overprotective or overcontrolling), and family accommodations that support child’s symptoms.
■ Evaluation of medical conditions and comorbid psychiatric disorders.
■ Evaluation of severity of anxiety symptoms and impairment from anxiety disorder.
■ Assessment of parental and family history of anxiety disorders and psychiatric treatment.
■ Evaluation of severity of anxiety symptoms and impairment from anxiety disorder.
■ Screening and monitoring for anxiety symptoms with multi-informant, validated rating scales for childhood anxiety (parent and child report) such as Self-Report for Childhood Anxiety Related Disorders (SCARED) and Spence Children’s Anxiety Scale (SCAS). Both free at http://www.wpic.pitt.edu/research and http://www2.psy.uq.edu.au/~sues/scas/
■ Assessment of baseline somatic symptoms prior to medication trials.

Note: The Anxiety Disorders Interview Schedule for Children (ADIS-C) may assist clinicians to differentiate the specific anxiety disorders (Silverman & Albano, 1996).

Level 1
If mild to moderate Anxiety Disorder:
■ 1a. Provide family with psychoeducation regarding anxiety disorders and cognitive-behavior therapy (CBT).
■ Initiate treatment with exposure-based cognitive-behavior therapy.
■ 1b. If CBT is not available, first consider evidence-based psychosocial interventions.
■ Provide family with psychoeducation regarding anxiety disorders and CBT.
■ Train to monitor child’s anxiety symptoms (eg, feelings thermometer or faces barometer) and set up behavioral program with positive reinforcement for child’s efforts and progress in addressing anxiety symptoms and decreasing avoidance.
■ If parental anxiety disorders interfere with treatment progress, provide referral for parent.
Anxiety Disorders in Children and Adolescents 6-17 years, continued

Level 2  If moderate to severe AD or inadequate response to CBT alone:

- 2a. Initiate monotherapy treatment with fluoxetine or sertraline.
  - Combination therapy with CBT and SSRI.
  - Review black box warning with family and monitor for treatment emergent suicidality.
- 2b. If first SSRI trial is not successful, try another SSRI in the same group (fluoxetine or sertraline).

Level 3  If moderate to severe AD and levels 1 and 2 are not successful:

- 3a. Consider another SSRI, such as fluvoxamine, citalopram or escitalopram, not paroxetine, alone or in combination with CBT, and monitor for treatment emergent suicidality.
- 3b. If level 3a is not successful then consider venlafaxine monotherapy or in combination with CBT. Monitor height, weight, blood pressure, pulse and treatment emergent suicidal ideations.

Level 4  If Levels 1, 2 and 3 are not successful, then re-evaluate diagnosis or refer to a specialist.

Note: Despite limited evidence, may consider monotherapy or augmentation with other medications if partial or poor response with SSRIs or venlafaxine: low-dose benzodiazepines, alpha-2 agonist, buspirone, clomipramine.

Benzodiazepines should be reserved for short-term use, long-term use is not recommended.
Medications for the Treatment of Anxiety Disorders

- None of these medications are FDA approved for use in youth with non-OCD anxiety disorders.

- Clinicians should realize that data below age 6 for treating anxiety disorders is limited and caution in using pharmacological treatment below age 6 is warranted.

(*indicates placebo-controlled studies in children 6-17 years with anxiety disorders).

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Young Child (4-6)</th>
<th>Child (6-12 years)</th>
<th>Adolescent</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Fluoxetine</td>
<td>1-2 mg/day, 5-10 mg/day</td>
<td>2.5-5 mg/day, 20-40 mg/day</td>
<td>5-10 mg/day, 40-60 mg/day</td>
</tr>
<tr>
<td>*Sertraline</td>
<td>5 mg/day, 50-75 mg/day</td>
<td>10-12.5 mg/day, 100-150 mg/day</td>
<td>25 mg/day, 150-200 mg/day</td>
</tr>
<tr>
<td>*Fluvoxamine</td>
<td>5 mg/day, 50-75 mg/day</td>
<td>12.5-25 mg/day, 100-200 mg/day</td>
<td>25 mg/day, 150-300 mg/day</td>
</tr>
<tr>
<td>Citalopram</td>
<td>No data</td>
<td>5 mg/day, 20-40 mg/day</td>
<td>10 mg/day, 40 mg/day (check ECG above 40mg for QTc prolongation)</td>
</tr>
<tr>
<td>Escitalopram</td>
<td>No data</td>
<td>2.5 mg/day, 10-20 mg/day</td>
<td>5 mg/day, 20 mg/day</td>
</tr>
<tr>
<td>*Venlafaxine</td>
<td>No data</td>
<td>37.5 mg/day, 75-112.5 mg/day (25-39 kg)</td>
<td>37.5 mg/day, 150 mg/day (40-49 kg), 225 mg/day (&gt;50 kg)</td>
</tr>
</tbody>
</table>

Note:

FDA does not currently provide any dosing guidelines for venlafaxine in children or adolescents and does not recommend its use in this population due to mixed results in efficacy trials.
Anxiety Disorders in Children and Adolescents 6-17 years, continued

Additional Clinical Information

- Can consider discontinuation trial of SSRI after 12 months of effective medication treatment, during low stress period, and with gradual downward titration. Monitor for relapse.
- May titrate to lowest therapeutic dose once weekly.
- After reaching the lowest therapeutic dose, can increase SSRI dose after one month if well tolerated and significant symptoms remain.

Anxiety Disorders and Comorbid Disorders

ADHD:

- Stimulant medications can be combined with SSRIs for comorbid ADHD.
- Strattera, guanfacine and other ADHD medications may be helpful for the subset of children who may not tolerate stimulants.

Depression and Bipolar Disorder:

- Fluoxetine is first-line medication for comorbid unipolar depression.
- Antidepressants, including SSRIs, may be poorly tolerated in children with anxiety (or depression) and family history of bipolar disorder. Use caution.
- For children with comorbid bipolar disorder, the bipolar disorder needs to be stabilized first. Adding an SSRI needs to be considered cautiously after CBT for the anxiety disorder has been tried.
- Alternatives to SSRI medications for anxiety disorder symptoms may be considered early in treatment, such as guanfacine for autonomic symptoms.
- Use benzodiazepines with caution as they can increase disinhibition, mood lability, irritability, aggression.

Substance Abuse Disorder (SUD):

- Both anxiety disorders and SUD can be treated at the same time. Some substances increase anxiety & panic symptoms and can complicate treatment.
- Use Caution with benzodiazepines in presence of SUD, especially those with short half life and increased risk for abuse and dependence.
- Integrate additional psychotherapy components: motivational strategies and CBT to identify triggers for cravings, develop alternative coping skills to reduce substance use.
Anxiety Disorders in Children and Adolescents 6-17 years, continued

Autism Spectrum Disorders (ASD) and Developmental Disorders (DD):
- Can modify CBT for anxiety disorders with ASD, DD.
- SSRIs: for anxiety/irritability and obsessive-compulsive behaviors distressing to the child, but not all ritualized or repetitive behaviors. Consider when obsessive features, rigidity of thought, perseveration, rituals, anxiety, depression, irritability present.
- Stimulants: for problems with inattention, concentration, and hyperactivity.
- Guanfacine or clonidine: for impulsivity, explosiveness, restlessness. Assess for trauma history.
- Atypical antipsychotics (risperidone, aripiprazole): for irritability, aggression, severe symptoms. Assess for comorbid mood disorder.

Not Recommended for Childhood Anxiety Disorders:
- Paroxetine is not recommended as first or second line treatment for childhood anxiety disorders due to concerns about increased adverse effects (eg, insomnia, decreased appetite, vomiting, activation, withdrawal symptoms, increased risk for suicidal ideations) relative to other SSRIs.
- Using benzodiazepines (BZO) as first-line, monotherapy for long-term treatment of childhood anxiety disorders is not recommended. BZO short-term use as SSRI takes effect or to address severe anxiety and impairment related to brief medical or dental procedures may be helpful.

Resources for Parents:
- Helping Your Anxious Child  (Rapee, Wignall, Spence, Cobham, 2008).
- Keys to Parenting Your Anxious Child (Manassis, 2008).
- Helping Your Child With Selective Mutism (McHolm, Cunningham, Vanier 2005).

Resources for Adolescents:
- Riding the Wave Workbook for adolescents with panic disorder (Pincus, Ehrenreich & Spiegel, 2008).

Resources for Children:
- What To Do When You Worry Too Much (Huebner, 2005).

Anxiety Disorders Association of America (ADAA) www.adaa.org
Selective Mutism Group-Child Anxiety Network www.selectivemutism.org
Association for Behavioral and Cognitive Therapies www.abct.org
Summary of the Literature on the Treatment of Anxiety Disorders in Children and Adolescents

Sucheta D. Connolly, M.D.*

Non-OCD anxiety disorders in youth are common and disabling, with 12-month prevalence between 10% to 20% in youth. Anxiety disorders increase risk for academic underachievement and are highly comorbid with other anxiety disorders, depression, ADHD, and substance abuse (1).

Screening and Assessment

The Practice Parameter for the Assessment and Treatment of Children and Adolescents with Anxiety Disorders highlighted evidence-informed screening and assessment tools for childhood anxiety disorders to increase early identification and monitor progress (1,2). The SCARED and SASC are free, have child and parent reports, and the SASC has a preschooler version. Using a feelings thermometer or faces barometer assists to monitor anxiety severity and impairment. Assessing baseline somatic symptoms reduces confusion with side effects during medication trials. Considering anxiety for youth with persistent somatic complaints may prevent excessive medical work-ups. Family assessment, including parental anxiety disorders, can identify environmental reinforcements for anxious and avoidant behaviors.

Treatment Planning

Treatment for children with anxiety disorders of mild severity begins with psychotherapy that includes exposure-based cognitive-behavioral therapy (CBT). Medication may be necessary for moderate to severe anxiety for acute symptom reduction, comorbid disorders, partial response to CBT, and improving outcome with combined treatment (1).

Treatment

Psychotherapy
Exposure-based CBT has received the most empirical support, and is the psychotherapy of choice for childhood anxiety disorders (1,2,3). CBT is effective in individual and group treatment. CBT for childhood anxiety disorders consists of several components: psychoeducation about anxiety and CBT, affective differentiation and somatic management skills, cognitive restructuring, practicing problem solving, exposure methods, and relapse prevention (4). Parental anxiety disorders and family accommodations that maintain the child’s avoidant coping can negatively impact the success of CBT.

Pharmacological Treatments

Selective Serotonin Reuptake Inhibitors
Selective serotonin reuptake inhibitors (SSRIs) are first-line medications for pediatric anxiety disorders based on randomized RCTs that have established short-term efficacy (reviewed in 1,5,6,7,8). The U.S. FDA issued a black-box warning for increased relative risk for suicide adverse events for antidepressant medication in pediatric populations. The benefit/risk ratio for anxiety disorders is more favorable than that for depression, but clinicians need to monitor carefully for worsening depression, agitation, or suicidality, especially when initiating treatment and at dose changes. Side effects on SSRI medications and their management have been reviewed (9).

Separation anxiety disorder (SAD), generalized anxiety disorder (GAD), and social phobia were studied together in the following randomized placebo-controlled tri-
als (RCTs). The multi-site RUPP study (N=128) showed significant improvement on fluvoxamine (76%) over placebo (29%) in an 8 week trial with flexible dosing (50-300mg/day). Severe illness and social phobia predicted a poorer outcome (10). An open-label 6 month extension to this study showed 94% of fluvoxamine responders maintained good response, 71% of fluvoxamine non-responders responded to fluoxetine, and 56% of placebo non-responders responded to fluvoxamine.

Fluoxetine showed significant overall improvement (61%) relative to placebo (35%) in a 12 week trial with dosing at 10 or 20mg/day (11). Social phobia and GAD responded significantly better to fluoxetine, but SAD only trended toward better response. Anxiety symptoms only partially resolved in 50% of the treatment group. Higher doses of medication or a combination of treatments were suggested to improve results, and increasing the SSRI dose by the fourth week of treatment if no significant improvement.

A small, 9 week RCT with fixed low dose sertraline (50mg/day) for youth with GAD showed clinical improvement with sertraline (90%) versus placebo (10%) (12). A multi-site, 16 week RCT in social phobia (N=322) showed significantly better response for paroxetine (78%) than placebo (39%) with flexible dosing (10-50mg/day) (13). However, there were significant adverse effects in the treatment group including insomnia, decreased appetite and vomiting. There were also concerns about worsened nervousness, hostility, and signs of potential activation in younger children; increased relative risk for treatment emergent suicidal ideations and significant discontinuation syndrome related to short-half life.

A 12 week RCT in children (N=15) with selective mutism (SM) and social phobia found significant improvement with fluoxetine on parent ratings relative to placebo, but both groups remained significantly symptomatic after treatment (14). An open trial with fluoxetine for SM in children with improvement, inversely correlated with age, supported use of graduated dosing. A controlled case series with sertraline showed positive response in children with SM. Some non-controlled studies and case reports with fluoxetine, fluvoxamine or sertraline suggested promise.

There are no RCTs in youth for medication treatment of panic disorder (5,7,8). An open-label trial of SSRIs in adolescents with panic disorder and comorbid disorders showed significant improvement with fluoxetine (20-60mg), paroxetine (20mg), or sertraline (125mg) alone or combined with short-term clonazepam or lorazepam when panic disorder was severe.

Fluoxetine in a small open trial with mixed anxiety disorders showed improvement in anxiety and panic symptoms with a mean dose of 24mg fluoxetine in children and 40mg in adolescents. A retrospective chart review in youth with panic disorder and comorbid disorders treated with paroxetine (10-40 mg/day) found significant improvement.

Very few studies have compared psychotherapy and medications. The relative 12 week efficacy of fluoxetine (10-40mg), placebo drug, and Social Effectiveness Therapy for Children (SET-C) for youth with social phobia was compared (15). Both active treatments were superior to placebo and reduced social distress and behavioral avoidance, but SET-C also enhanced social competence through improved social skills. The Child-Adolescent Anxiety Multimodal Study
(CAMS), a large (N=488) multi-site RCT, evaluated the relative and combined efficacy of 14 weeks of CBT, 12 weeks of sertraline (200mg/day), placebo drug alone, or a combination of sertraline and CBT in youth with moderate to severe SAD, GAD and/or social phobia (16). On CGI, CBT (60%) and sertraline (55%) showed greater improvement than placebo (24%), but the combination had a superior response rate (81% improved). Family preference, cost and treatment availability need to be considered in choosing treatment. Evidence regarding long-term risks and benefits of SSRIs for youths with anxiety disorders is very limited. Clinicians can consider a medication-free trial during a low stress period for children who achieve marked improvement or remission for a full year. If relapse occurs during the slow taper or after discontinuation the SSRI should be restarted (1).

Other Medications

The safety and efficacy of medications other than the SSRIs for the treatment of childhood anxiety disorders have not been well established (8). Venlafaxine, buspirone, tricyclic antidepressants (TCAs), buspirone, and benzodiazepines have been used as clinical alternatives alone or in combination with the SSRIs. A 16 week trial of extended-release Venlafaxine (up to 225mg/day) in youth with social phobia showed significantly greater improvement on CGI for venlafaxine XR (56%) versus placebo (37%). Data was combined from two RCTs (N=320) of venlafaxine XR (up to 225mg/day) for youths with GAD. Study one showed significant improvements in anxiety and functioning measures and study two showed significant improvement only on some secondary outcome measures (17). The combined response rates were significantly greater for extended-release venlafaxine (69%) than placebo (48%). Common side effects were anorexia in children and adolescents and somnolence in adolescents. Significant increases in blood pressure, pulse, and total cholesterol were observed. Venlafaxine may be considered for treatment of GAD after several SSRIs have failed and with careful monitoring (vital signs and cholesterol in short-term and periodic EKG in long-term treatment). Controlled trials of TCAs for youths with anxiety disorders have demonstrated conflicting results (5,8). Clomipramine may be cautiously used alone or combined with an SSRI when there is a partial response. Although efficacious in controlled trials for childhood OCD, it has equivocal results for other anxiety disorders. Also adverse effects, cardiac conduction issues and lethality in overdose limit its usefulness. Clomipramine may be started at a low dose with close monitoring including EKGs and blood levels, and then titrated up slowly based on tolerance to side effects.

Buspirone has no RCTs that support its efficacy for children with anxiety disorders (7,8). An open trial of buspirone in youth with mixed anxiety disorders showed significant improvements in anxiety ratings and minimal side effects. Buspirone may be tolerated at lower doses in anxious children (5 to 7.5mg twice daily) than anxious adolescents (5 to 30mg twice daily).

Common side effects are lightheadedness, headache, and dyspepsia. Buspirone may be tried cautiously when SSRIs and venlafaxine fail in youth with GAD or as an adjunct medication.

Benzodiazepines have not shown efficacy in RCTs for childhood anxiety disorders (1,5,7,8). They can be clinically useful as short-term treatment for acute reduction in severe anxiety symptoms while SSRI is maximized. Benzodiazepines should be
used cautiously because of side effects and risk for physical and psychological dependency, and are contraindicated for youths with substance abuse. They are not recommended in pregnant or breastfeeding girls. Side effects include sedation, severe disinhibition with aggression and irritability, behavioral dyscontrol in adolescents, and cognitive and memory impairments that can impact learning. Withdrawal, especially if stopped abruptly, may be mild or severe.

A multisite RCT is underway to assess extended release guanfacine (1-6 mg/day) in youth with GAD, SAD or social phobia.

**Psychopharmacologic treatment for very young children**

The AACAP Preschool Psychopharmacology Working Group developed guidelines for psychopharmacological treatment in early childhood (18). Preschoolers benefit from much lower dosing of SSRIs than older children. Preschoolers with anxiety disorders can start with at least 12 weeks of treatment with psychotherapy. If response is not adequate then fluoxetine liquid at low dose (1mg) can be added, with target dosing of 5-8 mg/day. Alternative SSRIs if fluoxetine fails are sertraline or fluvoxamine.

* Sucheta Connolly, MD., is the Director, Pediatric Stress and Anxiety Disorders Clinic; Professor of Clinical Psychiatry, University of Illinois at Chicago, Department of Psychiatry, Institute for Juvenile Research

**References**


## Bipolar I Acute or Mixed Mania - 6-17 Years

**Level 0** Comprehensive assessment. **Narrow phenotype**, classic bipolar grandiosity, hypersexuality, elevated mood, decreased sleep, cycling, flight of ideas (no current validity under age 6). Qualify symptoms using frequency, intensity, number and duration of episodes. Use of rating scales highly encouraged (Young Mania Rating Scale, Child Mania Rating Scale).

**Level 1** Monotherapy with one of these three agents:
- Aripiprazole
- Risperidone
- Quetiapine

  - For euphoric mania in adolescents, consider lithium.

**Level 2** Monotherapy with atypical antipsychotic listed in Level 1 AND augmentation with mood stabilizer(s) (lithium, VPA/divalproex), but not two antipsychotics.

**Level 3** Monotherapy with antipsychotic except clozapine not listed in Level 1 or combination with mood stabilizer(s).

**Level 4** Clozapine or ECT.

**Notes:**

1. **Not recommended** oxcarbazepine: little consensus to support the use of this agent for acute mania in pediatric patients. The only randomized controlled trial of oxcarbazepine failed to find a difference from placebo; only open treatment data available for carbamazepine in children & adolescents. No evidence for topiramate or lamotrigine as acute antimanic agents.

2. Avoid antidepressants; use with caution with comorbid anxiety or OCD.
Dosing Recommendations for Atypical Antipsychotics in Children and Adolescents - Bipolar Disorder: Acute or Mixed Mania - 6-17 Years*

*Clinicians should realize that data below age 10 for treating mania and mixed states are limited and caution in using pharmacological treatment below age 10 is warranted.

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Starting Dose</th>
<th>Maximum Dose</th>
<th>FDA Approved Age Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aripiprazole</td>
<td>2-5 mg/day</td>
<td>30 mg/day</td>
<td>10-17 years</td>
</tr>
<tr>
<td>Risperidone</td>
<td>Children: 0.25 mg/day Adolescents: 0.5 - 1 mg BID</td>
<td>Children: 4 mg/day Adolescents: 6 mg/day</td>
<td>10-17 years</td>
</tr>
<tr>
<td>Quetiapine</td>
<td>Children: 12.5 mg BID Adolescents: 25 mg BID</td>
<td>400 mg/day Adolescents: 600 mg/day</td>
<td>10-17 years</td>
</tr>
<tr>
<td>Lithium</td>
<td>300 - 600 mg/day Goal: acute mania: 0.8 – 1.2 mEq/L Goal maintenance: 0.6 – 1 mEq/L</td>
<td>1.2 mEq/L</td>
<td>12-17 years</td>
</tr>
<tr>
<td>Valproate</td>
<td>10-15 mg/kg/day in divided dose Goal: 80-125 mcg/mL</td>
<td>Dose determined by blood level. Max blood level should be 125 mcg/mL</td>
<td>Not approved</td>
</tr>
<tr>
<td>Haloperidol</td>
<td>Children: 0.25 mg - 0.5 mg/day Adolescents: 0.5 - 1 mg/day</td>
<td>Children: 4 mg/day Adolescents: 10 mg/day</td>
<td>Not approved for pediatric mania</td>
</tr>
<tr>
<td>Chlorpromazine</td>
<td>Children: 25 - 50 mg/day Adolescents: 25 - 100 mg/day</td>
<td>Children: 200 mg/day (under 12) Adolescents: 500 mg/day</td>
<td>Not approved for pediatric mania</td>
</tr>
<tr>
<td>Olanzapine</td>
<td>2.5 mg to 5 mg once daily Weekly titration by 2.5 to 5 mg increments</td>
<td>20 mg/day</td>
<td>13-17 years</td>
</tr>
</tbody>
</table>
Bipolar I Acute or Mixed Mania - 6-17 Years, continued

Minimizing side effects when switching psychotropic medications

- Start low! Go slow! And stop slowly! Avoid abrupt stopping, starting, and/or switching to reduce risk of rebound and withdrawal phenomena.

- Do not switch until the primary disorder has been treated according to target disorder guidelines at adequate dose and duration.

- Only stop and/or switch abruptly if a serious adverse effect necessitates it (i.e. severe neutropenia; agranulocytosis; diabetic ketoacidosis; neuroleptic malignant syndrome; acute pancreatitis; lithium toxicity; Stevens Johnson syndrome; etc).

- Slow switch using cross-titration is the preferred method; an even slower switch can be done using the plateau-cross titration method, with therapeutic dose overlap of medications (when switching to a less sedating cholinergic medication, or one with a much longer half-life.)

- If time permits, do not reduce the first medication by more than 25-50% per 5 half-lives.

Additional Considerations

- When switching medications, the more different the binding affinity for the same receptor (between the two drugs), the greater risk for side effects and rebound and withdrawal phenomena (esp. sedating; anti-cholinergic; dopaminergic).

- The more different the half-life of the medications with the same physiological effect (desired or undesired), the greater the risk for rebound and withdrawal phenomena; withdrawal and rebound phenomena are most likely when discontinuing from a short half-life medication.

- Withdrawal and rebound phenomena are most likely to occur when switching from a strongly antihistaminergic (sedating) or anti-cholinergic medication (i.e., Clozapine, Olanzapine, Quetiapine), to a less strong binding medication (i.e., haloperidol, molindone, peridone, paliperidone, aripiprazole, Ziprasidone); or from a strongly binding anti-dopaminergic (i.e. FGA AP, Risperidone Paliperidone) to a less strongly binding antipsychotic (i.e., clozapine, quetiapine, clozapine); or a full antagonist, to a partial agonist (aripiprazole).

- Insufficient efficacy or increased side effects may occur during a switch when medications metabolized by cytochrome P450 liver enzymes are paired with a medication that affects that same enzyme.

- Never discontinue Lithium or Clozapine abruptly to avoid potentially severe rebound of mania or psychoses.

- Quetiapine and Mirtazapine can lead to more sedation at lower doses (below 250-300 mg for Quetiapine, and below mg for Mirtazapine).
# Chronic Impulsive Aggression in Child and Adolescent Psychiatric Disorders Age 6-17 Years

**Level 0**

1. Conduct a thorough initial evaluation and diagnostic work-up for aggression and any potentially underlying disorder before initiating treatment.
2. Assess treatment effects and outcomes with standardized measures, such as the Modified Overt Aggression Scale (MOAS) is highly encouraged.
3. When acute aggression is present, conduct a risk assessment and, if necessary, consider referral to a psychiatrist or an emergency department for evaluation.
4. Continuously track and re-assess aggression problems and triggers.
5. Obtain additional collateral information as needed.
6. Provide psychoeducation for patients and families.
7. Develop an appropriate treatment plan with the patient/family and obtain buy-in.
8. Help the family establish community supports.

**Level 1**

- Initial medication treatment should target the underlying disorder(s) (when available, follow evidence-based guidelines for the primary disorder).
- Always treat ADHD fully first before addressing aggression with other pharmacologic agents.
- Engage the child and family in taking an active role in implementing psychosocial strategies and help them to maintain consistency with psychosocial, psychoeducational and other evidence-based treatments interventions.

**Level 2**

- Re-evaluate if Level 1 interventions are not successful.
- Consider adding an antipsychotic medication to ongoing psychosocial treatments, taking into account the latest available evidence on efficacy and safety of individual agents, if severe aggression persists following an adequate trial of treatments for the underlying disorder (including psychosocial treatments).
- Risperidone or aripiprazole are recommended at low doses.
- Use recommended titration schedules and deliver medication trial at adequate dose and duration before changing or adding medication. Before changing, make sure that medications have been administered for an appropriate dose and duration and that adequate psychosocial interventions addressing adherence have been implemented. Monitor and manage adverse effects and non-response.
Chronic Impulsive Aggression in Child and Adolescent Psychiatric Disorders Age 6-17 Years, continued

Level 3
- If failure to respond to Level 2, or insufficient response, try a different antipsychotic (either risperidone or aripiprazole).
- Consider other antipsychotic for which less evidence exists.

Level 4
- Avoid using more than 2 psychotropic medications for aggression simultaneously, unless all possible alternatives have been exhausted, especially the combination or intensification of psychosocial interventions in conjunction with a single medication for aggression (manage comorbidities appropriately).
  - For a partial response to an initial first-line antipsychotic, consider augmentation with a mood stabilizer (most evidence exists for lithium).
  - When patient responds only partially to a first-line antipsychotic medication, first reassess the diagnosis, adequacy of behavioral interventions, pharmacotherapy for any identified primary or comorbid disorder, and dose/duration of the medication trial. Then, it may be appropriate to consider adding a mood stabilizer.
  - Combination of a mood stabilizer with atypical antipsychotic, but not of two antipsychotics (unless during cross-titration or plateau switch).

General Procedures:
- Conduct side effect and metabolic assessments and laboratory tests that are clinically relevant, comprehensive, and based on established guidelines.
- Provide accessible information to parents and families about identifying and managing side effects.
### Chronic Impulsive Aggression in Child and Adolescent Psychiatric Disorders Age 6-17 Years, continued

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Baseline</th>
<th>Each During Titr</th>
<th>At 3 Months</th>
<th>3 Monthly</th>
<th>6 Monthly</th>
<th>Annually</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal and family medical history (a)</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Lifestyle behaviors (b)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sedation/somnolence</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height, weight (calculate BMI percentile, BMI z score)</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual/reproductive dysfunction</td>
<td>✔</td>
<td></td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parkinsonism (SAS or ESRS), Akathisia (AIMS or ESRS)</td>
<td>✔</td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Fasting blood glucose, HbA1C and lipids (c)</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Tardive dyskinesia</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Blood pressure and pulse</td>
<td>✔</td>
<td></td>
<td>✔ (during titration with CLO and QUE)</td>
<td>✔</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Liver function tests</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Electrolytes, full blood count, renal function</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Prolactin</td>
<td>Only if symptomatic (d)</td>
<td>Only if symptomatic (d)</td>
<td>Only if symptomatic (d)</td>
<td>Only if symptomatic (d)</td>
<td>Only if symptomatic (d)</td>
<td>Only if symptomatic (d)</td>
</tr>
<tr>
<td>EKG</td>
<td>Only if symptomatic (e)</td>
<td>Only if symptomatic (e)</td>
<td>Only if symptomatic (e)</td>
<td>Only if symptomatic (e)</td>
<td>Only if symptomatic (e)</td>
<td>Only if symptomatic (e)</td>
</tr>
</tbody>
</table>
Chronic Impulsive Aggression in Child and Adolescent Psychiatric Disorders Age 6-17 Years, continued

AIMS: Abnormal Involuntary Movement Scale; ESRS: Extrapyramidal Symptom Rating Scale; SAS: Simpson Angus rating Scale.

a Including components of the metabolic syndrome (obesity, arterial hypertension, diabetes, dyslipidemia), past medical history for coronary heart disease or coronary heart disease equivalent disorders (i.e., diabetes mellitus, peripheral arterial disease, abdominal aortic aneurism, and symptomatic carotid artery disease); history of premature coronary heart disease or in first degree relatives (males <55 years, females <65 years), history of premature sudden cardiac death in first degree relatives (males <50 years, females <55 years), personal history of heart murmur, irregular heartbeat, tachycardia at rest, or dizziness or syncope upon exertion, and past efficacy and adverse effect experiences in patients and/or family members.

b Lifestyle behaviors: diet, exercise, smoking, substance use, sleep hygiene.

c More frequent assessment may be necessary in high-risk patients (e.g., family history of diabetes, non-Caucasian ethnicity, BMI >95th percentile, weight gain >7% over 3 months or less, or weight gain ≥0.5 BMI z-score at any time point); HbA1C identifies different patients with pre-diabetes than fasting glucose.

d In case of symptoms or signs of sexual dysfunction (amenorrhea, oligomenorrhea, gynaecomastia, galactorrhea, hirsutism, erectile dysfunction); draw fasting in the morning and approximately 12 hours after the last antipsychotic dose. Some authors recommend assessment at baseline and after titration due to the unclear effects of asymptomatic long term hyperprolactinemia in children and adolescents (Ho et al. J Can Acad Child Adolesc Psychiatry 2011).

e In case of family history of sudden cardiac death in first degree relatives (males <50 years, females <55 years) or prolonged QT syndrome, or personal history of heart murmur, irregular heartbeat, tachycardia at rest, or dizziness or syncope upon exertion; or in case of co-treatment with another QTc prolonging medication (http://www.azcert.org/medical-pros/drug-lists/bycategory.cfm#).

Not Recommended:

- Use of medication without concurrent psychosocial treatments.
- Not recommended: Olanzapine (Zyprexa) and Olanzapine/fluoxetine (Symbiax) as first or second-line agent, or in patients who are overweight/obese (≥85th percentile) and/or dyslipidemia or hyperglycemia.
Atypical Antipsychotics: Optimal Dosing/Titration Strategies* for Children and Adolescents in the Treatment of Chronic Impulsive Aggression Age 7-17 Years

<table>
<thead>
<tr>
<th>Atypical Antipsychotic</th>
<th>Starting Daily Dose</th>
<th>Titration Dose 7-10 days</th>
<th>Maximum Daily Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aripiprazole</td>
<td>1 – 2.5 mg</td>
<td>Child: 1 – 2.5 mg</td>
<td>Child: 15 mg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adolescent: 2 -5 mg</td>
<td>Adolescent: 15 mg</td>
</tr>
<tr>
<td>Risperidone</td>
<td>Child: 0.1-0.25 mg</td>
<td>Child: 0.25 – 0.5 mg</td>
<td>Child (6-12): 2 mg</td>
</tr>
<tr>
<td></td>
<td>Adolescent: 0.50 mg</td>
<td>Adolescent: 1 – 2 mg</td>
<td>Adolescent: (13-17) 4 mg</td>
</tr>
</tbody>
</table>

*There is little information to guide dosing strategies for aggression. However, for aggressive children treated with risperidone, doses are about half that of the usual antipsychotic dose.


(Refer also to the Toolbox of the Treatment of Maladaptive Aggression in Youth Guidelines: www.T-MAY.org


Major Depression in Children and Adolescents 6-17 Years

Level 0 Assessment
- Screening using multi-informant, validated rating scales that include Depression, specifically such as the Center for Epidemiological Studies Depression Scale for Children (CES-DC) and screening for comorbidity (other psychiatric and medical conditions).
- Specific screen for harm to self or others and access to firearms.
- Positive screen: DSM-IV-based interview evaluation.
- Rule out medical reason for depression (e.g., hypothyroidism, B12/folate deficiency, anemia, malnutrition (with or without eating disorder), chronic disorder (diabetes, asthma, inflammatory bowel disease, juvenile rheumatoid disease, etc).
- Rule out iatrogenic etiology of depression (i.e., medication side effects/interactions).
- Evaluate: past psychiatric and medical history, previous treatment, family conflict and current depression of family and caregivers, bullying, abuse, peer conflict, school issues and substance abuse.
- Consider and rule out presence of bipolar depression; pointers: prior (hypo)mania, family history of bipolar disorder, atypical depression with reverse neurovegetative signs, seasonal affective component, brief, recurrent episodes, melancholic depression in prepubertal child.
- Track outcomes using empirically validated tools. See Clinical Global Impression Scale (severity and improvement) and Child Depression Inventory.

Level 1 Initial Treatment Plan
- Address abuse, bullying, conflict, care giver depression.
- Establish a safety plan:
  - removal of firearms and other lethal means such as alcohol, prescription and non-prescription medications.
  - providing the adolescents with mutually agreeable and available emergency numbers and contacts.
  - engaging a concerned third party familiar with the adolescent
- Active support - 6 week trial (if mild symptoms).
  - Components of active support must include psychosocial interventions and psychoeducation and may include: self-help materials, active listening/relationship building, school involvement, mood monitoring, pleasant activities, cognitive restructuring, family conflict reduction, sleep hygiene and exercise.

Level 2 Targeted Treatment
- Start with cognitive behavior therapy (CBT)/Interpersonal therapy (IPT)/depression-specific behavioral family therapy.
- Fluoxetine or combination of CBT or IPT psychotherapy with fluoxetine (COMB).
- May consider use of citalopram and escitalopram for age 12 and above.
Major Depression in Children and Adolescents 6-17 Years, continued

Qualifiers:
- Mild: psychosocial interventions only.
- Moderate/Severe: COMB.
- Psychosis: SSRI (fluoxetine, escitalopram, citalopram) plus antipsychotic*.
- Comorbidity: COMB, treat comorbidity.
- Suicidality: intensify surveillance and follow-up; COMB if on antidepressant only or remove antidepressant if otherwise ineffective; if chronic, consider lithium augmentation.

Always Consider:
- Abuse/conflict/bullying.
- School function.
- Peer relationships.
- Sleep hygiene/exercise/diet.
- Medical conditions (e.g., hypothyroidism, B12/folate deficiency, anemia, malnutrition (with or without eating disorder), chronic disorder (diabetes, asthma, inflammatory bowel disease, juvenile rheumatoid disease, etc).

Level 3 Inadequate Response
- If on psychosocial intervention alone, add medication.
- If on medication alone, add psychosocial intervention.
- Non-response to fluoxetine: switch to citalopram, escitalopram or sertraline.

Level 4 Poor or Non-response
- Refer to mental health specialist.
- Re-assess diagnosis (bipolar disorder, substance used disorder, anxiety disorders/PTSD), rule out medical condition (e.g., hypothyroidism – see above) or medication side effect.
- Increase psychosocial intervention and medication dose if tolerated
- Switch SSRI to bupropion or venlafaxine.
  Consider augmentation of SSRI with bupropion, T3, lithium, buspirone, mirtazapine, aripiprazole, quetiapine (adult data only).
- Augment with alternate (either CBT or IPT) psychosocial intervention
- Consider change in level of care (treatment setting and interventions based on severity of illness).
- For milder form and/or seasonal affective symptoms with light sensitivity, consider bright light therapy.
- If psychotic/severe: ECT (for adolescents).
Major Depression in Children and Adolescents 6-17 Years, continued

After Maximum Medical Benefit:
- Maintenance for 9-12 months.
- Discontinuation over 3-4 months (if stable, return to premorbid functioning and no anticipated increase in stressors).
- Factors favoring maintenance treatment:
  - Partial response
  - Prior relapse
  - Suicidality
  - Comorbidity risk for relapse
  - Environmental risk for relapse
  - Family history of relapsing/recurrent major depression
  - Lack of return to full premorbid functioning.

Always Monitor:
- Adverse events
- Compliance
- Treatment or illness emergent suicidality
- Treatment or inherently emergent comorbidity
- Potential development of (hypo)mania

* reassess diagnosis first (e.g., bipolar disorder), rule out psychostimulant or substance abuse related psychosis.
### Major Depression in Children and Adolescents 6-17 Years, continued

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Starting Dose</th>
<th>Maximum Dose</th>
<th>FDA Approved Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluoxetine</td>
<td>Children: 2.5 mg/day</td>
<td>Children: 40 mg/day</td>
<td>8-18 years</td>
</tr>
<tr>
<td></td>
<td>Adolescents: 5 mg/day</td>
<td>Adolescents: 60 mg/day</td>
<td></td>
</tr>
<tr>
<td>Citalopram</td>
<td>Children: 5 mg/day</td>
<td>Children: 40 mg/day</td>
<td>Not approved for pediatric use</td>
</tr>
<tr>
<td></td>
<td>Adolescents: 10 mg/day</td>
<td>Adolescents: 40 mg/day*</td>
<td></td>
</tr>
<tr>
<td>Escitalopram</td>
<td>Children: 2.5 mg/day</td>
<td>Children: 20 mg/day</td>
<td>12-17 years</td>
</tr>
<tr>
<td></td>
<td>Adolescents: 5 mg/day</td>
<td>Adolescents: 30 mg/day</td>
<td></td>
</tr>
<tr>
<td>Sertraline</td>
<td>Children: 12.5 mg/day</td>
<td>Children: 150 mg/day</td>
<td>Not indicated for MDD</td>
</tr>
<tr>
<td></td>
<td>Adolescents: 25 mg/day</td>
<td>Adolescents: 200 mg/day</td>
<td></td>
</tr>
<tr>
<td>Bupropion SR</td>
<td>Children: No Data</td>
<td>Lesser of 6 mg/kg or 300 mg, with no single dose &gt;150 mg</td>
<td>Not approved for &lt;18 years</td>
</tr>
<tr>
<td></td>
<td>Adolescents: Lesser of 3 mg/kg/day or 150 mg/day</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Due to recent FDA ruling, Citalopram should not be prescribed above 40mg/day due to risk of QTc prolongation.
Post Traumatic Stress Disorder in Children and Adolescents
Age 6-17 Years

Level 0
- Comprehensive assessment includes:
  - Assessment for comorbidities, use of symptom rating scales such as the Juvenile Victimization Questionnaire (children 2 to 17 years old) to determine if a child has been exposed to trauma. For specific PTSD symptoms, clinicians may use The University of California at Los Angeles Posttraumatic Stress Disorder Reaction index (a self-report measurement for children 7 and older), the Posttraumatic Stress Disorder Reaction Index or the Child PTSD Symptom Scale.
  - A comprehensive assessment of psychiatric symptoms and disorders, as well as impairment from these symptoms and disorders.
  - Thorough developmental assessment.
  - A full medical history.
  - An assessment of family psychiatric history which includes past and current history of parental psychiatric illnesses, substance abuse and treatment history of parents, parental figures (e.g., step parent), siblings, and other relatives.
  - Assessment of family structure and functioning, parent-child relationship and interaction.
  - Assessment of ongoing trauma in the context of the environment including history of abuse (physical, sexual, neglect), traumatic life events, domestic violence, economic instability, etc.

Level 1
- Evidence-based trauma-focused psychotherapies should be considered as first-line treatments:
  - Trauma-focused cognitive behavioral therapy (TF-CBT)
  - Prolonged exposure therapy.

Level 2
- Other evidence-based psychosocial interventions with:
  - Child-parent psychotherapy.

Level 3
- Re-evaluate, if levels 1 and 2 unsuccessful.
- Refer to Principles of Practice.
- Based on target symptoms, may use clonidine, guanfacine, prazosin, (nightmares), quetiapine, or risperidone.
Post Traumatic Stress Disorder in Children and Adolescents Age 6-17 Years, continued

**Level 4**
- Re-assessment of diagnosis. Refer to specialist if not already done for persistent trauma exposure.
- Assess that family has received supportive treatment.

**Not Recommended:**
- SSRIs in the absence of comorbidities are not recommended because of several negative trials.
- Benzodiazepines are not recommended.
- No pharmacotherapy has proved to be effective for secondary prevention of PTSD in children.

**Notes:**
1. No every trauma results in PTSD.
2. No FDA approved medications listed in Level 3. Limited evidence of efficacy for agents listed in Level 3.
Summary of the Management of Posttraumatic Stress Disorder in Children and Adolescents

Jeffrey R. Strawn, M.D.*

In children and adolescents posttraumatic stress disorder (PTSD) is associated with significant morbidity including an increased risk for suicide attempts (Jacobson et al, 2008), an increased risk of co-occurring depression, substance use disorders, internalizing and externalizing disorders (Donnelly et al, 1999). Recently, there have been significant advances in our understanding of the pathophysiology of PTSD in the pediatric population and concomitantly, efforts have been made to develop effective diagnostic instruments for pediatric youth with PTSD. Paralleling these advances in our diagnostic and neurobiologic understanding of PTSD in children and adolescents, accumulating evidence suggests that a number of psychotherapeutic and psychopharmacologic interventions may be of benefit. Herein, the extant evidence for these strategies will be reviewed.

Psychotherapeutic Treatments

At present, the most empirically supported psychotherapeutic intervention for youth with PTSD is trauma-focused cognitive behavioral therapy (TF-CBT), a structured, 12–16 week, individual treatment which includes: (1) psychoeducation; (2) stress reduction techniques; (3) involvement of parents and caregivers; (4) development of a trauma narrative and (5) mastery of the trauma. Additionally, there is evidence from randomized controlled trials which suggest benefit for Child Centered Therapy (Cohen et al, 2004), Nondirective Supportive Therapy (Cohen et al, 2005) and eye movement desensitization therapy (EMDR).

Psychopharmacologic Treatments

Selective Serotonin Reuptake Inhibitors (SSRIs)

SSRIs in pediatric patients with PTSD have generally failed, in randomized controlled trials, to separate from placebo. In the first randomized controlled trial of an SSRI in youth with PTSD, Cohen and colleagues compared adjunctive sertraline (mean dose 150 mg/day, range 50–200 mg/day) to placebo in patients receiving TF-CBT (Cohen et al, 2007). In this study, no statistically significant differences were observed in the Child Global Assessment Scale scores between the two groups (Cohen et al, 2007), nor were there any differences which were detected between placebo-treated and sertraline-treated patients with regard to intrusive, hyperarousal or avoidance symptoms. However, the study was under-powered to detect such differences and importantly, both patient groups were receiving an active treatment (TF-CBT) which likely made the detection of any sertraline-related improvement especially difficult. Similarly, Robb and colleagues (2010) evaluated sertraline monotherapy in children with PTSD (n=131, duration 10 weeks) and did not observe differences in the UCLA PTSD–I 17-item total score between sertraline-treated patients and those receiving placebo (Robb et al, 2010). Despite these two negative double-blind, placebo-controlled trials of SSRIs in youth with PTSD, some open-label trials suggest benefit. Seedat and colleagues evaluated flexibly dosed citalopram (20–40 mg/day, duration 8 weeks) and observed improvements in Clinician-Administered PTSD Scale (CAPS) total and symptom cluster scores as well as the Clinical Global
Impression Scale (CGI) score (Seedat, Stein, Ziervogel, Middleton, Kaminer, Emsley et al, 2002).

**Tricyclic Antidepressants**

Limited data exist concerning tricyclic antidepressants in youth with PTSD. One randomized, double-blind, controlled trial suggests that brief treatment with imipramine may attenuate some PTSD symptoms in children and adolescents aged 2–19 years (Robert et al, 1999); however, a follow-up study which compared this agent with fluoxetine and placebo suggested no difference between fluoxetine, imipramine and placebo (Robert et al, 2008). It should be noted that both trials lasted only 7 days and used non-validated outcome measures.

**Antiadrenergic Agents**

Given evidence of noradrenergic hyperactivity in both pediatric (Pervanidou et al., 2007) and adult patients with PTSD (Strawn and Geracioti, 2008), agents that target this increased noradrenergic tone have been utilized in pediatric patients with PTSD, largely based on extrapolation of data from large, randomized, controlled trials of these medications and adult patients. At present, case reports, raise the possibility that the a1 antagonist prazosin may be effective in treating youth with PTSD. This agent has been utilized as adjunctive treatment (Brkanac et al, 2003; Fraleigh et al 2009) and as monotherapy in children (Strawn et al, 2011) and adolescents (Strawn et al, 2009). At present, there are neither open-label trials nor double-blind, placebo controlled trials to support the use of this agent in youth with PTSD. Although generally well tolerated in adults, reflex tachycardia and orthostatic hypotension should be closely monitored on all patients treated with prazosin (Strawn, 2010).

Clonidine, a non-selective a2 agonist attenuates reenactment symptoms in children (Harmon, and Riggs, 1996; Porter and Bell 1999; De Bellis et al, 2001). Guanfacine, which is less potent as an a2 agonist may reduce nightmares in children with PTSD (Horrigan and Barnhill, 1996). However, there are no double-blind trials of these a2 agonists in pediatric PTSD. Nonetheless, both clonidine and guanfacine are frequently used in the treatment of youth with ADHD and are generally well tolerated, with common side effects being dry mouth and sedation.

Propranolol has been evaluated in youth with PTSD and also in double-blind trials as a potentially promising agent for secondary prevention of PTSD in youth. Famularo and colleagues reported improvement in 11 children with childhood abuse-related PTSD who had significantly fewer symptoms when receiving propranolol (Famularo et al, 1988). No other studies have investigated propranolol for treatment but rather this agent has received attention as a means of secondary prevention of PTSD. There are 2 published double-blind controlled trials of propranolol in the secondary prevention of PTSD in adults that demonstrated efficacy (Pitman et al, 2002; Vaiva et al, 2003). However, randomized pediatric trials of propranolol for secondary prevention have failed to observe effectiveness in preventing PTSD symptoms. In children and adolescents (aged 10–18 years) exposed to trauma or violence, 2.5 mg/kg/day (maximum dose 40 mg BID; duration of treatment 10 days) was not associated with differences in CAPS–CA scores or in the number of patients meeting criteria for PTSD or subthreshold criteria for PTSD at 6 weeks follow-up (Nugent et al, 2010). In a second study propranolol was evaluated as a means of preventing the post-thermal burn hypercatabolic sequelae and inci-
dence of subsequent development of Acute Stress Disorder (ASD) was evaluated retrospectively (Sharp et al, 2010). In this study, there was no difference in the incidence of acute stress disorder between the two groups (Sharp et al, 2010). However, factors that were not controlled for in the study include mechanism of burn, hemodynamic instability (the medical indication for the use of propranolol) as well as opiate use, which may have some moderating effects on the development of PTSD in adults (Nugent et al, 2010; Pitman and Delahanty, 2005).

**Atypical Antipsychotics**

There are currently some reports suggesting benefit of atypical antipsychotics in youth with PTSD. However, careful consideration of risks and benefits must accompany the use of this class of medications in treating youth with PTSD. One case series suggests that in young children with serious thermal burns and acute stress disorder, open-label risperidone treatment may be associated with reductions in all symptom clusters of acute stress disorder (Meighen et al, 2007). With regard to PTSD in adolescents, case report level evidence also suggests that adjunctive risperidone also results in significant symptomatic and functional improvement (Keeshin and Strawn, 2009). Lastly, Horrigan and colleagues found that in an open label treatment with risperidone resulted in remission of PTSD symptoms in 13 of 18 adolescents (Horrigan and Barnhill, 1999). To date, one study has examined the efficacy of quetiapine in youth with PTSD. In this study, adolescents (n = 6, 15–17 years) were treated with flexibly dosed quetiapine (50–200 mg/day) over a 6-week period and demonstrated improvement in Traumatic Symptom Checklist for Children (TSCC) posttraumatic stress t-scores and in symptoms of anxiety, depression and anger (Stathis et al, 2005).

**Mood Stabilizers**

Several open-label studies have suggested benefit for some mood stabilizers in youth with PTSD. Specifically, carbamazepine has been evaluated in children (ages of 8 and 17 years) with sexual abuse-related PTSD (Looff et al, 1995) and over the course of an inpatient treatment, 22 of the 28 patients were asymptomatic, while the remaining 6 also demonstrated improvement (Looff et al, 1995). In addition, divalproex has been evaluated in an open-label trial of youth with PTSD (Steiner et al, 2007). Twelve adolescent boys (mean age 16+1 years) with co-morbid conduct disorder and PTSD received either high or low dose divalproex. Patients receiving high dose (e.g. therapeutic doses) had improvements in CGI score over the course of treatment (Steiner et al, 2007).

**Conclusions**

There is ample evidence to support the use of trauma-focused psychotherapies (e.g. TF-CBT) as first line interventions in youth with PTSD. With regard to medication data, RCTs do not support the use of SSRIs for the treatment of PTSD, nor propranolol for secondary prevention of PTSD. Open-label trials and case series suggest that antiadrenergic medications including prazosin and clonidine, the mood stabilizer carbamazepine and possibly the second generation antipsychotics quetiapine and risperidone may be of benefit for some pediatric patients with PTSD and these agents may be considered in children and adolescents who fail or are partial responders to first-line treatments for PTSD such as TF-CBT. Certainly, when treating physicians deem it clinically appropriate to initiate a trial of pharmacotherapy or to augment evidence-based psychotherapy in pediatric patients with PTSD, medications should be chosen in consultation with the patient’s family and
to target specific symptoms that cause the most impairment to the child. Finally, when using medications in the treatment of PTSD, side effects, objective evidence of benefit as well continued need should be regularly re-evaluated.

*Jeffrey Strawn MD., Assistant Professor of Psychiatry and Pediatrics, Department of Psychiatry and Behavioral Neuroscience, University of Cincinnati College of Medicine.

Disclosures
Dr. Strawn has received research support from Eli Lilly and Shire and from the American Academy of Child & Adolescent Psychiatry.

References


36. **Figure 1:** Various psychopharmacologic interventions have been developed with dampen central noradrenergic tone. Prazosin, an \( a_1 \) adrenergic antagonist attenuates post-synaptic effects of norepinephrine while the centrally-acting beta blocker, propranolol also exerts post-synaptic effects. Importantly, propranolol is non-selective in binding to both \( a_1 \) and \( a_2 \) adrenergic receptors. By contrast, clonidine and guanfacine, \( a_2 \) adrenergic agonists decrease norepinephrine release through presynaptic mechanisms. Figure created using Servier Medical Art®.

**Figure 2:** Proposed algorithm for the treatment of PTSD in youth based on currently available evidence in children and adolescents with PTSD and expert opinion.
**Obsessive Compulsive Disorder - Children 6-17 Years**

**Level 0**
Comprehensive assessment that includes screening for OCD symptoms and medical causes. Refer to specialist if concerns.

**Level 1**
If mild to moderate OCD, cognitive behavior therapy (CBT) with qualified therapist.

**Level 2**
If inadequate response to CBT or OCD is severe, consider monotherapy with sertraline fluoxetine, fluvoxamine.

**Level 3**
If level 2 failed, utilize other approved SSRIs or clomipramine (EKG monitoring).

**Level 4**
If treatment resistant to behavior therapy and/or SSRI, augment with low dose aripiprazole (1-2.5 mg) or risperidone (0.25-1.0 mg).

**Drugs Used in the Treatment of OCD**

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Starting Dose (mg) Per Day</th>
<th>Max Dose (mg) Per Day</th>
<th>FDA Approved Age</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-Adolescent</td>
<td>Adolescent</td>
<td>Pre-Adolescent</td>
</tr>
<tr>
<td>Clomipramine</td>
<td>6.25 - 12.5</td>
<td>25</td>
<td>150</td>
</tr>
<tr>
<td>Fluoxetine†</td>
<td>2.5 - 5</td>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td>Sertraline†</td>
<td>12.5</td>
<td>25</td>
<td>150</td>
</tr>
<tr>
<td>Fluvoxamine</td>
<td>12.5</td>
<td>25</td>
<td>150</td>
</tr>
</tbody>
</table>

† Oral concentrate commercially available
Tic Disorders (chronic tic disorder, Tourette’s Syndrome)  
Children 6-17 Years

Level 0  
Assess duration and severity (greater than six weeks). Careful assessment* that attends to issues of social, educational, physical impairment as well as complicating comorbidity. If tics are not causing impairment, educate but no treatment is necessary.

Level 1  
Mild-moderate impairment, secondary to tics, use habit reversal therapy (HRT) if possible. Alpha2 agonists (clonidine or guanfacine)

Level 2  
If impairment is severe haloperidol, risperidone, aripiprazole in low doses

Level 3  
Trial of medication not already used at Level 1 or 2 or a trial of pimozide (there are drug interaction and QTc prolongation safety concerns with this agent)

Level 4  
Antipsychotic in combination with SSRI, clonazepam, alpha2 agonists, or an anticonvulsant depending on target symptoms. Severity of illness should drive the use of one or two agents

Antipsychotic drugs in the treatment of tics: level of evidence and dosing recommendations

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Level of Evidence</th>
<th>Starting Dose (mg/day)</th>
<th>Usual Dose Range (mg/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haloperidol</td>
<td>A (strongest)</td>
<td>0.25 to .5</td>
<td>1 - 4</td>
</tr>
<tr>
<td>Pimozide</td>
<td>A</td>
<td>0.5 to 1.0</td>
<td>2 - 8</td>
</tr>
<tr>
<td>Risperidone</td>
<td>A</td>
<td>0.25 to 0.5</td>
<td>1.0 - 3.0</td>
</tr>
<tr>
<td>Aripiprazole</td>
<td>B</td>
<td>1.0 to 2.5</td>
<td>2.0 - 10</td>
</tr>
<tr>
<td>Clonidine</td>
<td>B</td>
<td>0.025 to .05</td>
<td>0.10 - 0.30</td>
</tr>
<tr>
<td>Guanfacine</td>
<td>B</td>
<td>0.5 to 1.0</td>
<td>1.0 - 3.0</td>
</tr>
</tbody>
</table>
Tic Disorders (chronic tic disorder, Tourette’s Syndrome)
Children 6-17 Years, continued

*A comprehensive assessment before initiating treatment includes:

- Duration and severity
- Family history (positive family history provides support for a tic disorder diagnosis), physical examination (note IQ), dysmorphology refer to developmental disability assessment guidelines
- Collateral information
- Change in medical status, infections, seizures, medication changes and reactions
- Review for most common comorbid presentations: ADHD, OCD
- Safety assessment of potential harm to child or others

** Specialty referral is beneficial when:

- Comprehensive diagnosis is sought
- Concerns of comorbid neurological condition
- Concerns of comorbid psychiatric condition beyond simple ADHD, anxiety, depression
- Primary care treatment not successful
- Behavioral treatment specialist is recommended: CBT for anxiety, ABA for self-injury
- Symptoms significantly compromised functioning
- Major shifts in friends, school, family
- Parents/patient feel overwhelmed
- Any question of self-harm
- Reasonable effort with counseling shows little progress
- Complexity high due to medical/neurological conditions
- Psychosis/mania
- Comorbid condition interfering with therapy

**Note:**
1. Treating the tics may not help comorbid condition and vice versa (eg. treating tics may help comorbid OCD, treating ADHD with a stimulant sometimes can make tics worse)
Tic Disorders (chronic tic disorder, Tourette’s Syndrome)  
Children 6-17 Years, continued

www.oedfoundation.org

Books useful for families:

- *Talking back to OCD: The Program that Helps Kids and Teens Say “No Way” and parents say “Way to Go”* by John March, MD.
- *Freeing your Child from Obsessive Compulsive Disorder* by Tamar Chansky, Ph.D.
- *What To Do When Your Child Has Obsessive Compulsive Disorder: Strategies and Solutions* by Aureen Pinto Wagner, Ph.D.

Useful Websites

- Tourette Syndrome Association  
  www.Tsa-usa.org
- Developmental-Behavioral Peds  
  www.dbpeds.org
- Tic Severity Checklist  
  www.dbpeds.org/pdf/ticseverity.pdf
- NINDS Tourette statement  
  www.ninds.nih.gov/health_and_medical/disorder/tourette.htm
- Teaching the Tiger - A Handbook for (Educators)  
  www.hopepress.com
- Bullying  
  www.stopbullyingnow.hrsa.gov
Aggressive and Self-Injurious Behaviors in the Context of Developmental Disability in Children and Adolescents - Clinical Recommendations

**Evaluation – Comprehensive Assessment**

The investigation into the causes of aggressive behaviors starts with:

a. Thorough history and physical examination
   (note IQ, dysmorphology – refer to DD guidelines of AACAP and AAN)

b. An accurate history (information must be obtained from collateral sources)

c. Behavioral antecedents
   - A behavioral assessment of the environment to identify triggers and environmental changes

d. Changes in medical status
   - (e.g. identify and treat infection)
   - Seizures
   - Medication changes and reactions (adverse medication effects warrant consideration as a cause of disruptive behavior)

e. Once medical and medication-related causes are excluded then consider presence of a psychiatric disorder: ASD, ADHD, PTSD, Psychosis

f. Safety assessment to determine:
   - Harm to child or others

**Risk Factors Include:**

- Developmentally specific
  - Age (peaks in late adolescence)
  - Male sex

- Comorbid conditions:
  - PDD, anxiety disorder, affective disorder, tic disorder

- Environmental
  - structure, demand on behavior, high/low stimulation

- Communication deficits
  - frustration or boredom

- Developmental Disabilities
  - Risk for aggressive behavior is higher in syndromes associated with lower IQ as in:
    - Prader-Willi, Fragile X, Smith-Magenis, Tuberous Sclerosis Complex, Cri-du-Chat, Down Syndrome

**Target Symptoms**

- Aggression
- Irritability
- Outbursts/rage
- Sadness
- Self-injury
- Oppositionality
- Anxiety
- Stereotypy
- Compulsions
- Perserveration
- Hyperactivity
- Impulsivity
- Inattention
- Perseveration

**Persistent Aggression/Outbursts/Irritability**

- Antipsychotics – Risperidone 1st
- Stimulants (if in context of ADHD)
- Anticonvulsants
- Alpha 2 agonists
- Beta blockers
- Lithium

*See FL Medicaid Drug Therapy Management Guidelines for Children and Adolescents
http://flmedicaidbh.fmhi.usf.edu

**Monitoring of Risperidone Pending Referral to Specialist**

- Parkinsonism, akathisia, dyskinesia, dystonia
- Other side effects, separation anxiety, dulling, depression
- Metabolic
  - appetite, weight, BMI
  - lipid panel, glucose

**Diagnosis**

a. Diagnostic tests
   - As relevant to medical work up

b. Identify most impairing component of presentation
   - Rating scales may be helpful*

c. Behavior needing immediate attention
   - Refer to behavior therapy
   - Medication
   - Consider hospitalization/refer to ER
   - Refer to specialist if available

**Treatment**

a. Aim therapy at most impairing target symptom or diagnosis (e.g. ADHD, aggression, or compulsions)

b. Define symptom domain behind the aggressive behavior once medical aspects have been ruled out
   - Anxiety disorders (OCD, others), depressive disorders
     - Worries, separation anxiety, crying, sadness, withdrawal, insomnia, compulsive behavior
   - ADHD, other disruptive behaviors
     - Distractibility, hyperactivity, impulsiveness
   - Psychosis, Mania
     - Bizarre statements, pressured speech, erratic behavior.
   - Non-specific aggression

*The website www.schoolpsychiatry.org lists all screening instruments and whether free access is available on line
<table>
<thead>
<tr>
<th>Genetic Disorder</th>
<th>Aggression and Self-Injurious Behaviors</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prader-Willi Syndrome (PWS)</td>
<td>Aggression</td>
<td>• Risperidone has been used successfully; however, PWS patients are already prone to weight gain. The SGAs with low weight-gain potential (ziprasidone and possibly aripiprazole) may be better choices — but haven’t been studied.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• An alternative to consider would be an anti-epileptic drug with a low potential for weight gain (carbamazepine, oxcarbazepine, lamotrigine).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Valproic acid should probably be avoided, due to its tendency to promote weight gain; a similar caution exists for lithium.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Caveat: No matter which medication are used, low dosing and careful monitoring are a must. PWS patients may be sensitive to adverse effects of medications, may not metabolize them well, and may have paradoxical reactions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Aggression increases with age, with the highest rate in young adults.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Aggression is usually described as “temper outbursts”. Physical acts towards others can be seen.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Aggression more likely to be seen during recommended weight-loss efforts.</td>
</tr>
<tr>
<td></td>
<td>Self-Injurious Behaviors</td>
<td>• As there is a strong compulsive component to the self-injury in these patients, treatment with an SSRI should be considered although worsening of picking behavior related to SSRI should be monitored.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If the patient fails two reasonable trials with an SSRI, low-dose risperidone (starting at 0.5 mg/d) may help.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• One study of adults with PWS demonstrated a significant reduction in skin picking behaviors with the use of topiramate; its use in younger patients may be considered if other treatments are unsuccessful.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Topiramate should be divided into twice-daily dosing.</td>
</tr>
<tr>
<td>Fetal Alcohol Syndrome (FAS)</td>
<td>Aggression</td>
<td>• Comorbidity is quite common in these patients, with elevated rates of ADHD, anxiety, depression, psychotic-like symptoms, and Intermittent Explosive disorder (IED).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Those conditions should be treated first, as their resolution may also diminish or eliminate the aggressive behaviors.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• For non-specific or refractory aggression, use of risperidone may work when other agents have failed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• For IED symptoms not responsive to other medications, anticonvulsants, lithium, alpha-2 agonists or beta blockers (especially the lipophilic agents propranolol and metoprolol) may be effective.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Renal disease is present in 10% of those with FAS. Therefore, lithium must be used with caution.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• FAS patients display both verbal and physical aggression.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• They show higher rates of delinquent behaviors, including fighting.</td>
</tr>
<tr>
<td>Fragile-X Syndrome (FXS)</td>
<td>Aggression</td>
<td>• If aggressive behaviors persist after treating comorbid conditions, risperidone or aripiprazole may be tried.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Similar to FAS in terms of symptoms and psychiatric comorbidities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Important difference in FXS patients is there is a risk of seizures in the younger age group (1–5 years), and in about 20% motor tics are present.</td>
</tr>
<tr>
<td></td>
<td>Self-Injurious Behavior</td>
<td>• Onset of SIB tends to be early in life, and the self-injury has a modest correlation with other problem behaviors.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Compulsive behavior occurs in 72% of boys and 55% of girls and did not appear to be associated with SIB.</td>
</tr>
<tr>
<td>Fragile-X Syndrome (FXS)</td>
<td></td>
<td>• These behaviors will usually respond to a combination of adequate pharmacologic treatment of comorbid psychiatric conditions (e.g. ADHD, depression, anxiety) and behavioral interventions.</td>
</tr>
<tr>
<td>Genetic Disorder</td>
<td>Aggression and Self-Injurious Behaviors</td>
<td>Treatment</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>----------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Smith-Magenis Syndrome (SMS)</td>
<td>Aggression</td>
<td>• Treating the hyperactivity with stimulants is not very effective</td>
</tr>
<tr>
<td></td>
<td>• Aggression in SMS is thought to be related to ADHD symptoms, which are seen in over 80% of patients</td>
<td>• SMS patients have a high rate of seizure activity (and even higher rates of abnormal EEGs, even in the absence of seizures)</td>
</tr>
<tr>
<td></td>
<td>• SMS patients display more aggressive behaviors than do patients with PWS or mixed intellectual disabilities (IDs)</td>
<td>• A preferable first choice may be anti-epileptic drugs with low weight-gain potential (such as carbamazepine)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Another option would be an SSRI, especially if there is suspicion that the irritability is related to anxiety seen in SMS patients</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Although risperidone may reduce aggression, the atypical antipsychotics should probably be avoided, as at least half of patients with SMS have hyperlipidemia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Alternative medications include lithium (especially in those with no EEG epileptiform activity) and beta blockers</td>
</tr>
<tr>
<td></td>
<td>Self-Injurious Behaviors</td>
<td>• As there are features of stereotypy, and self-stimulation in SMS patients, trials of an SSRI, an atypical antipsychotic, and/or beta blockers, respectively, may be considered</td>
</tr>
<tr>
<td></td>
<td>• Tend to increase with age</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Hand-biting is the most common form of SIB, followed by self-slapping, head-banging, and picking of the skin, toenails and fingernails (to the point of bleeding)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Will also stick objects into body orifices</td>
<td></td>
</tr>
<tr>
<td>Tuberous Sclerosis Complex (TSC)</td>
<td>Aggression</td>
<td>• Much of the aggressive behavior in TSC is probably related to the seizure disorder; therefore the first step in management should be maximizing the AED regimen. However, the epilepsy in TSC tends to respond poorly to the AEDs</td>
</tr>
<tr>
<td></td>
<td>• Very complex patients, given the high rate of seizure disorders, common occurrence of ADHD symptoms, and cardiac and renal involvement</td>
<td>• Psychiatric comorbidity is common. Identification and treatment may decrease aggressive behaviors</td>
</tr>
<tr>
<td></td>
<td>• Aggression in TSC is common, shows wide variation in severity, and does not tend to diminish over time (except for the destructive outbursts)</td>
<td>• Risperidone has shown efficacy in reducing problematic behaviors (including aggression) in TSC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The use of any medication that may affect cardiac conduction should be delayed until the TSC patient has had a thorough cardiac evaluation. About ½ of these patients will have a cardiac rhabdomyoma, and about 20% of those will be associated with arrhythmias</td>
</tr>
<tr>
<td>Cri du Chat Syndrome (CdCS)</td>
<td>Aggression</td>
<td>• If improvement in communication skills does not help to diminish the aggressive behaviors, a cautious trial of stimulants may be indicated</td>
</tr>
<tr>
<td></td>
<td>• There is speculation that much of the aggression (towards person and property) seen in CdCS derives from the poor or absent language skills that most of the patients display</td>
<td>• Given the possible SIB-stereotype connection, and also that stereotypes can respond to dopaminergic blockade, treating with low-dose risperidone seems reasonable</td>
</tr>
<tr>
<td></td>
<td>• Hyperactive behavior has been variously reported in these patients, and it seems to diminish with age</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Self-Injurious Behaviors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Self-injury is very common in CdCS, most commonly hitting or banging of the head, biting or scratching</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Stereotyped behaviors (e.g. body rocking, hand waving) are also common, and may share an etiological connection with the SIB</td>
<td></td>
</tr>
<tr>
<td>Genetic Disorder</td>
<td>Aggression and Self-Injurious Behaviors</td>
<td>Treatment</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Autistic Spectrum Disorders (ASD)</td>
<td><strong>Aggression</strong></td>
<td><strong>Treatment</strong></td>
</tr>
<tr>
<td>- In one study 78% of aggressive patients had mood disorders that were not recognized</td>
<td>- In the absence of a clearly defined mood disorder, risperidone is the agent of choice to treat aggression in children with autistic disorder, and perhaps with other ASD</td>
<td></td>
</tr>
<tr>
<td>- Recommendations were made to reduce or eliminate atypical antipsychotics and to maximize treatment of mood disorders with antidepressants or mood stabilizers</td>
<td>- In smaller studies:</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>o Ziprasidone and aripiprazole also demonstrated reductions in aggressive symptoms</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Olanzapine was ineffective</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Quetiapine increased aggression</td>
<td></td>
</tr>
<tr>
<td><strong>Self-Injurious Behaviors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- In one study of autistic children 50% had SIB, and almost 15% had severe SIB, defined as producing “functional or life-threatening lesions.”</td>
<td>- Risperidone has been found to reduce SIB in people with autistic disorder; the other AAs may also be helpful in this regard</td>
<td></td>
</tr>
<tr>
<td>- Younger chronologic age, associated perinatal conditions, higher degree of autism and a higher delay in daily living skills were risk factors for SIB</td>
<td>- Risperidone limitations:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Although SIB frequency is reduced in autistic patients, duration and severity of SIB may not be significantly altered</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Another concern is AA-related weight gain and obesity, which is a risk factor for the development of the metabolic syndrome</td>
<td></td>
</tr>
<tr>
<td></td>
<td>In the event that the SIB in autistic patients doesn’t respond to the AAs, or the medications are not tolerated, a trial of the opioid antagonist naltrexone may be beneficial</td>
<td></td>
</tr>
<tr>
<td>Down Syndrome (DS)</td>
<td><strong>Aggression</strong></td>
<td><strong>Treatment</strong></td>
</tr>
<tr>
<td>- At least 10% of DS patients can present as oppositional and aggressive</td>
<td>- For physical aggression or destructiveness, the first choice would be an AA, followed by a mood stabilizer or beta-adrenergic antagonist</td>
<td></td>
</tr>
<tr>
<td>- New onset behavioral disturbances (including aggression) in DS patients could be related to medical issues, including:</td>
<td>- For agitation-anxiety-irritability, the first choice would be a mood stabilizer or SSRI, followed by an AA For defiance, either buspirone or bupropion may be tried</td>
<td></td>
</tr>
<tr>
<td>- Recurrent hospitalization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Pre-existing/active seizures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Hearing/visual impairment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- GERD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Pain (ENT, dental, GI, skeletal, menstrual)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Primary sleep disorder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Obstructive sleep apnea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Hypo- or hyperthyroidism</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- New-onset behavioral disturbances (including aggression) in DS patients could be related to psychiatric issues, including:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Pre-pubertal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o ADHD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o ODD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o ASD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Post-pubertal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Depression</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o OCD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Psychosis</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The following drugs will be reviewed at any dose. Chlorpromazine Oral, Fanapt, Invega, Latuda, and Saphris.

<table>
<thead>
<tr>
<th>Drug</th>
<th>Age Range</th>
<th>Dosage/Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorpromazine oral</td>
<td>0-5</td>
<td>0 mg/day</td>
</tr>
<tr>
<td></td>
<td>6-11</td>
<td>300 mg/day</td>
</tr>
<tr>
<td></td>
<td>12-17</td>
<td>600 mg/day</td>
</tr>
<tr>
<td>Fanapt</td>
<td>0-5</td>
<td>0 mg/day</td>
</tr>
<tr>
<td></td>
<td>6-11</td>
<td>6-12 mg BID</td>
</tr>
<tr>
<td></td>
<td>12-17</td>
<td>12-24 mg BID</td>
</tr>
<tr>
<td>Invegra</td>
<td>0-5</td>
<td>0 mg/day</td>
</tr>
<tr>
<td></td>
<td>6-11</td>
<td>6 mg/day</td>
</tr>
<tr>
<td></td>
<td>12-17</td>
<td>12 mg/day</td>
</tr>
<tr>
<td>Latuda</td>
<td>0-5</td>
<td>0 mg/day</td>
</tr>
<tr>
<td></td>
<td>6-11</td>
<td>20-80 mg QD</td>
</tr>
<tr>
<td></td>
<td>12-17</td>
<td>40-160 mg QD</td>
</tr>
<tr>
<td>Saphris</td>
<td>0-5</td>
<td>0 mg/day</td>
</tr>
<tr>
<td></td>
<td>6-11</td>
<td>5-10 mg BID</td>
</tr>
<tr>
<td></td>
<td>12-17</td>
<td>10-20 mg BID</td>
</tr>
<tr>
<td>Aripiprazole</td>
<td>0-5</td>
<td>0 mg/day</td>
</tr>
<tr>
<td></td>
<td>6-11</td>
<td>15 mg/day</td>
</tr>
<tr>
<td></td>
<td>12-17</td>
<td>30 mg/day</td>
</tr>
<tr>
<td>Clozapine</td>
<td>0-5</td>
<td>0 mg/day</td>
</tr>
<tr>
<td></td>
<td>6-11</td>
<td>300 mg/day</td>
</tr>
<tr>
<td></td>
<td>12-17</td>
<td>600 mg/day</td>
</tr>
<tr>
<td>Fluphenazine</td>
<td>0-5</td>
<td>0 mg/day</td>
</tr>
<tr>
<td></td>
<td>6-11</td>
<td>5 mg/day</td>
</tr>
<tr>
<td></td>
<td>12-17</td>
<td>10 mg/day</td>
</tr>
<tr>
<td>Fluphenazine Decanoate</td>
<td>0-5</td>
<td>0 mg/day</td>
</tr>
<tr>
<td></td>
<td>6-11</td>
<td>0 mg/day</td>
</tr>
<tr>
<td></td>
<td>12-17</td>
<td>0 mg/day</td>
</tr>
<tr>
<td>Haloperidol</td>
<td>0-5</td>
<td>0 mg/day</td>
</tr>
<tr>
<td></td>
<td>6-11</td>
<td>5 mg/day</td>
</tr>
<tr>
<td></td>
<td>12-17</td>
<td>10 mg/day</td>
</tr>
<tr>
<td>Haloperidol Decanoate</td>
<td>0-5</td>
<td>0 mg/day</td>
</tr>
<tr>
<td></td>
<td>6-11</td>
<td>0 mg/day</td>
</tr>
<tr>
<td></td>
<td>12-17</td>
<td>0 mg/day</td>
</tr>
<tr>
<td>Olanzapine</td>
<td>0-5</td>
<td>0 mg/day</td>
</tr>
<tr>
<td></td>
<td>6-11</td>
<td>10 mg/day</td>
</tr>
<tr>
<td></td>
<td>12-17</td>
<td>20 mg/day</td>
</tr>
<tr>
<td>Perphenazine</td>
<td>0-5</td>
<td>0 mg/day</td>
</tr>
<tr>
<td></td>
<td>6-11</td>
<td>20 mg/day</td>
</tr>
<tr>
<td></td>
<td>12-17</td>
<td>40 mg/day</td>
</tr>
<tr>
<td>Quetiapine</td>
<td>0-5</td>
<td>0 mg/day</td>
</tr>
<tr>
<td></td>
<td>6-11</td>
<td>400 mg/day</td>
</tr>
<tr>
<td></td>
<td>12-17</td>
<td>800 mg/day</td>
</tr>
<tr>
<td>Risperidone</td>
<td>0-5</td>
<td>0 mg/day</td>
</tr>
<tr>
<td></td>
<td>6-11</td>
<td>4 mg/day</td>
</tr>
<tr>
<td></td>
<td>12-17</td>
<td>6 mg/day</td>
</tr>
<tr>
<td>Risperidone Microspheres</td>
<td>0-5</td>
<td>0 mg/day</td>
</tr>
<tr>
<td></td>
<td>6-11</td>
<td>0 mg/day</td>
</tr>
<tr>
<td></td>
<td>12-17</td>
<td>0 mg/day</td>
</tr>
<tr>
<td>Ziprasidone (administer with meals)</td>
<td>0-5</td>
<td>0 mg/day</td>
</tr>
</tbody>
</table>