

# 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, dysmorphism – 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

## 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

## 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
- Outbursts/rage
- Self-injury
- Anxiety
- Compulsions
- Hyperactivity
- Inattention
- Irritability
- Sadness
- Oppositionality
- Stereotypy
- Perservation
- Impulsivity

## 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

\*The website [www.schoolpsychiatry.org](http://www.schoolpsychiatry.org) lists all screening instruments and whether free access is available on line

Genetic Disorder	Aggression and Self-Injurious Behaviors	Treatment
Prader-Willi Syndrome (PWS)	<p>Aggression</p> <ul style="list-style-type: none"> <li>Aggression increases with age, with the highest rate in young adults</li> <li>Aggression is usually described as “temper outbursts”. Physical acts towards others can be seen</li> <li>Aggression more likely to be seen during recommended weight-loss efforts</li> </ul>	<ul style="list-style-type: none"> <li>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</li> <li>An alternative to consider would be an anti-epileptic drug with a low potential for weight gain (carbamazepine, oxcarbazepine, lamotrigine)</li> <li>Valproic acid should probably be avoided, due to its tendency to promote weight gain; a similar caution exists for lithium</li> <li>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</li> </ul>
	<p>Self Injurious Behaviors</p> <ul style="list-style-type: none"> <li>Self-injurious behavior (skin-picking, with preference for legs, face and arms; other types of self-injury, such as head banging, can be observed) is seen in the majority of PWS patients</li> </ul>	<ul style="list-style-type: none"> <li>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</li> <li>If the patient fails two reasonable trials with an SSRI, low-dose risperidone (starting at 0.5 mg/d) may help</li> <li>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</li> <li>Topiramate should be divided into twice-daily dosing</li> </ul>
Fetal Alcohol Syndrome (FAS)	<p>Aggression</p> <ul style="list-style-type: none"> <li>FAS patients display both verbal and physical aggression</li> <li>They show higher rates of delinquent behaviors, including fighting</li> </ul>	<ul style="list-style-type: none"> <li>Comorbidity is quite common in these patients, with elevated rates of ADHD, anxiety, depression, psychotic-like symptoms, and Intermittent Explosive disorder (IED)</li> <li>Those conditions should be treated first, as their resolution may also diminish or eliminate the aggressive behaviors</li> <li>For non-specific or refractory aggression, use of risperidone may work when other agents have failed</li> <li>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</li> <li>Renal disease is present in 10% of those with FAS. Therefore, lithium must be used with caution</li> </ul>
Fragile-X Syndrome (FXS)	<p>Aggression</p> <ul style="list-style-type: none"> <li>Similar to FAS in terms of symptoms and psychiatric comorbidities</li> <li>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</li> </ul>	<ul style="list-style-type: none"> <li>If aggressive behaviors persist after treating comorbid conditions, risperidone or aripiprazole may be tried</li> </ul>
Fragile-X Syndrome (FXS)	<p>Self Injurious Behavior</p> <ul style="list-style-type: none"> <li>Onset of SIB tends to be early in life, and the self-injury has a modest correlation with other problem behaviors</li> <li>Compulsive behavior occurs in 72% of boys and 55% of girls and did not appear to be associated with SIB</li> </ul>	<ul style="list-style-type: none"> <li>These behaviors will usually respond to a combination of adequate pharmacologic treatment of comorbid psychiatric conditions (e.g. ADHD, depression, anxiety) and behavioral interventions</li> </ul>

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Smith-Magenis Syndrome (SMS)	<p>Aggression</p> <ul style="list-style-type: none"> <li>Aggression in SMS is thought to be related to ADHD symptoms, which are seen in over 80% of patients</li> <li>SMS patients display more aggressive behaviors than do patients with PWS or mixed intellectual disabilities (IDs)</li> </ul>	<ul style="list-style-type: none"> <li>Treating the hyperactivity with stimulants is not very effective</li> <li>SMS patients have a high rate of seizure activity (and even higher rates of abnormal EEGs, even in the absence of seizures).</li> <li>A preferable first choice may be anti-epileptic drugs with low weight-gain potential (such as carbamazepine)</li> <li>Another option would be an SSRI, especially if there is suspicion that the irritability is related to anxiety seen in SMS patients</li> <li>Although risperidone may reduce aggression, the atypical antipsychotics should probably be avoided, as at least half of patients with SMS have hyperlipidemia</li> <li>Alternative medications include lithium (especially in those with no EEG epileptiform activity) and beta blockers</li> </ul>
	<p>Self-Injurious Behaviors</p> <ul style="list-style-type: none"> <li>Tend to increase with age</li> <li>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)</li> <li>Will also stick objects into body orifices</li> </ul>	<ul style="list-style-type: none"> <li>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</li> </ul>
Tuberous Sclerosis Complex (TSC)	<p>Aggression</p> <ul style="list-style-type: none"> <li>Very complex patients, given the high rate of seizure disorders, common occurrence of ADHD symptoms, and cardiac and renal involvement</li> <li>Aggression in TSC is common, shows wide variation in severity, and does not tend to diminish over time (except for the destructive outbursts)</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> <li>Psychiatric comorbidity is common. Identification and treatment may decrease aggressive behaviors</li> <li>Risperidone has shown efficacy in reducing problematic behaviors (including aggression) in TSC</li> <li>The use of any medication that may affect cardiac conduction should be delayed until the TSC patient has had a thorough cardiac evaluation. About 1/2 of these patients will have a cardiac rhabdomyoma, and about 20% of those will be associated with arrhythmias</li> </ul>
Cri du Chat Syndrome (CdCS)	<p>Aggression</p> <ul style="list-style-type: none"> <li>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</li> <li>Hyperactive behavior has been variously reported in these patients, and it seems to diminish with age</li> </ul>	<ul style="list-style-type: none"> <li>If improvement in communication skills does not help to diminish the aggressive behaviors, a cautious trial of stimulants may be indicated</li> </ul>
	<p>Self-Injurious Behaviors</p> <ul style="list-style-type: none"> <li>Self-injury is very common in CdCS, most commonly hitting or banging of the head, biting or scratching</li> <li>Stereotypical behaviors (e.g. body rocking, hand waving) are also common, and may share an etiological connection with the SIB</li> </ul>	<ul style="list-style-type: none"> <li>Given the possible SIB-stereotype connection, and also that stereotypes can respond to dopaminergic blockade, treating with low-dose risperidone seems reasonable</li> </ul>

Genetic Disorder	Aggression and Self-Injurious Behaviors	Treatment
Autistic Spectrum Disorders (ASD)	Aggression <ul style="list-style-type: none"> <li>In one study 78% of aggressive patients had mood disorders that were not recognized</li> <li>Recommendations were made to reduce or eliminate atypical antipsychotics and to maximize treatment of mood disorders with antidepressants or mood stabilizers</li> </ul>	<ul style="list-style-type: none"> <li>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</li> <li>In smaller studies: <ul style="list-style-type: none"> <li>Ziprasidone and aripiprazole also demonstrated reductions in aggressive symptoms</li> <li>Olanzapine was ineffective</li> <li>Quetiapine increased aggression</li> </ul> </li> </ul>
	Self-Injurious Behaviors <ul style="list-style-type: none"> <li>In one study of autistic children 50% had SIB, and almost 15% had severe SIB, defined as producing "functional or life-threatening lesions."</li> <li>Younger chronologic age, associated perinatal conditions, higher degree of autism and a higher delay in daily living skills were risk factors for SIB</li> </ul>	<ul style="list-style-type: none"> <li>Risperidone has been found to reduce SIB in people with autistic disorder; the other AAs may also be helpful in this regard</li> <li>Risperidone limitations: <ul style="list-style-type: none"> <li>Although SIB frequency is reduced in autistic patients, duration and severity of SIB may not be significantly altered</li> <li>Another concern is AA-related weight gain and obesity, which is a risk factor for the development of the metabolic syndrome</li> </ul> </li> <li>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</li> </ul>
Down Syndrome (DS)	Aggression <ul style="list-style-type: none"> <li>At least 10% of DS patients can present as oppositional and aggressive</li> <li>New onset behavioral disturbances (including aggression) in DS patients could be related to medical issues, including: <ul style="list-style-type: none"> <li>Recurrent hospitalization</li> <li>Pre-existing/active seizures</li> <li>Hearing/visual impairment</li> <li>GERD</li> <li>Pain (ENT, dental, GI, skeletal, menstrual)</li> <li>Primary sleep disorder</li> <li>Obstructive sleep apnea</li> <li>Hypo- or hyperthyroidism</li> </ul> </li> <li>New-onset behavioral disturbances (including aggression) in DS patients could be related to psychiatric issues, including: <ul style="list-style-type: none"> <li>Pre-pubertal <ul style="list-style-type: none"> <li>ADHD</li> <li>ODD</li> <li>ASD</li> </ul> </li> <li>Post-pubertal <ul style="list-style-type: none"> <li>Depression</li> <li>OCD</li> <li>Psychosis</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>For physical aggression or destructiveness, the first choice would be an AA, followed by a mood stabilizer or beta-adrenergic antagonist</li> <li>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</li> </ul>