Dual Diagnosis: Assessment, Diagnosis, and Treatment

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I have nothing to disclose.

Gratitude:

• Patients, families and caregivers
• Andrew Booty
• Gemi Collins-Bride
• Jim Bourgeois
• Clarissa Kripke
• Gaelen Lombard
• Matthew State
• My Colleagues at GGRC and ARC
Comments about Presentation

- We have a discussion panel following this, which is a great time to ask more involved questions. Please ask if a slide needs clarification.
- Most of the data for the many studies presented are based in the DSM-IV not the DSM-5.
- Nearly all of this presentation is based on other people’s hard work. Please see the slide-by-slide Reference Handout provided today. Readability of slides was my main goal for this PPT.

Presentation Outline

- Working Assumptions
- What is Dual Diagnosis?
- Problem Behaviors vs. Psychiatric Disabilities/Disorders
- Why are We Talking about Dual Diagnosis?
- Assessment Tools
- Somatic Treatment Options
Working Assumptions

- Individuals with Dual Diagnosis are INDIVIDUALS
- Seeing persons with DD as anything other than entire persons leads us astray
- Individuals, Providers and Caregivers are doing the best they can on a daily basis
- Looking at available, high quality research data provides an anchor in decision making
- There is a lack of this data across the spectrum of persons with ID as well as persons with PD and especially for those with both, DD.
- Yet, progress is being made

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Defining Dual Diagnosis (?) + (?) = DD

- Intellectual disability in DSM-5 involves mental impairments that affect adaptive functioning in three domains impacting completion of everyday tasks:
  - Conceptual domain: skills in language, reading, writing, math, reasoning, knowledge, and memory.
  - Social domain: “empathy, social judgment, interpersonal communication skills, the ability to make and retain friendships, and similar capacities.”
  - Practical domain: “self-management in areas such as personal care, job responsibilities, money management, recreation, and organizing school and work tasks.”
Defining Dual Diagnosis (? + ? = DD)

- Psychiatric Disability/Disorder: Clinically significant disturbance in cognitive, emotional regulation, and behavior that represents a disturbance in mental functioning that leads to struggles with work, school, family or other social arenas. (DSM 5, American Psychiatric Association, 2013, p.20)
- Neurodevelopmental Disorders: Intellectual Disabilities + Communication Disorders + Autism Spectrum Disorder + AD/HD + Specific Learning Disorder + Motor Disorders + Other Neurodevelopmental Disorders
- Basically: PD= All DSM 5 diagnoses – some Neurodevelopmental Disorders but keeping others
- Now, you know why everyone is so confused

Dual Diagnosis= ID +/- Autism + other DSM 5 non-Neurodevelopmental Disorders

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Defining Problem Behaviors AKA Challenging Behaviors (PB/CB)

• People with intellectual disabilities are at higher risk for developing behavior problems.
• Studies have reported that 7–15% of individuals with ID who receive services have severe behavior problems. Thus, 85–93% of people with ID do not show severe behavior problems, regardless of what level of their ID.
• Types of PB/CB are: “aggression towards others, temper tantrums, screaming or shouting, and self-injury”
• “Several authors have suggested that behavior problems may be indicators of psychiatric disorders in individuals with intellectual disability”
• There is a higher incidence of PO in persons with ID who also have PB/CB compared to those without challenging behavior.

Defining Problem Behaviors AKA Challenging Behaviors (PB/CB)

• In individuals with ID, physical aggression was associated with a 50% probability of PO.
• The presence of PB/CB increased the probability of almost all psychiatric conditions.
• Several research studies suggest that in persons with ID there is a strong relation between behavior problems and psychiatric disorders in individuals with intellectual disability.

<table>
<thead>
<tr>
<th>N</th>
<th>Group with behavior problems</th>
<th>Other</th>
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</table>
| 70 | 49 (69.3%) | 71 0 | 0.0017

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</tr>
</thead>
</table>
| 70 | 49 (69.3%) | 71 0 | 0.0017

Note: there are no cut-off scores for the 70 participants who were classified with the ASD.

p = 0.0017

p = 0.0017
Other Correlations: Level of ID, Symptoms of PD and PB/CB

- More symptoms of PD in those with mild and moderate than those classified as severe and profound ID.
- Those classified as mild/moderate had more symptoms of psychosis and depression than those classified as severe/profound, while other symptoms of PD were more evenly distributed regardless of classification of ID.
- Interesting Correlation Between PD and PB/CB:
  - anxiety $\rightarrow$ tantrums
  - mania $\rightarrow$ tantrums, aggression and screaming
  - weakest correlation: self-injurious behavior (SIB)
  - depression $\rightarrow$ aggression, tantrums and screaming in those classified as severe and profound
  - depression $\rightarrow$ tantrums and SIB, mild and moderate ID

Hypotheses of Link

- PB/CB may have the same roots that express itself differently sometimes as PD
- Challenging behavior may be an expression of mental illness
- Challenging behaviors may occur in an attempt to stop aversive experiences in PD
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Why focus on Dual Diagnosis?

- Average life expectancy of people with ID is around 60 years. But, for those individuals with mild ID free of comorbid PD, their lives are as long as neurotypical individuals.
- Many studies show that for children and adolescents with ID between 30 and 50% have comorbid PD with a relative risk of having PD with ID of 2.8–4.5.
- The mental well-being of parents of children with ID is more affected by their children’s severity of PD than that of the severity of ID.
- Adults with ID experience comorbid PD at higher rates than other adults; point prevalence is approximately 40% with annual incidence at about 8%.

Why focus on Dual Diagnosis?

- The 1995 Welsh Health Survey found that persons with ID had a higher rate of psychiatric illness (32.2%) than the general population (11.2%).
- People with ID disproportionately contribute to total psychiatric morbidity. Emerson and Hatton in 2007 estimated that the 3% of British children with ID account for 14% of total child and adolescent psychiatric morbidity.
- “Psychosocial masking”
- “Cognitive disintegration”
Examples of Specific Psychiatric Disabilities/Disorders Rates

- 2005 Australian Study looking at the ‘Disability, Ageing and Carers Survey, 1998’ comprising data on 42,664 adults living at home or in care facilities. The prevalence of ID was 1.25%. Rates for disabling comorbid PD were: 1.3% psychosis, 8% depression, and 14% had an anxiety disorder. (E9)

- Two more studies reported a point prevalence of 3% and 2.7% respectively for schizophrenia compared to 0.4% in the general population

- Interestingly, in another study the point prevalence of depressive disorder ranged up to 3.7%, which is just over a fourth in the general population
How Does Ageing Affect Those with Intellectual Disability?

- Londoners with ID who are 65 and older showed PD in 74% of those surveyed.
- Those with Down’s Syndrome have higher rates of dementia. In those 65 years or over, 18.3% had dementia, which is 3.9x higher than general population.
- Down’s Syndrome and dementia is associated with more frequent and severe PB/CB.
- Dementia progression in people with Down’s Syndrome was demonstrated to be: 45–49 years – 16.6%; 50–54 years – 17.7%; 55–59 years – 32.1%; 60 years plus – 25.6%.
- Increased mortality in those with dementia (44.4%) compared with those without dementia (10.7%).

Figure L. Histogram of Individual Scores of Developmental Behavior Checklist Total Score Points per Year.
Dual Diagnosis in Autism

• Higher parent and teacher ratings for ADHD, ODD, aggression, anxiety, and depression compared with neurotypical students.
• Preschoolers through young adults: elevated behavior problems, anxiety, depression, irritability compared to control group. Individuals without ASD but with ID had lower rates of same behaviors when compared with individuals with autism.
• Hurtig et al. (2009) reported greater anxiety, depression, and attention problems in 43 adolescents with HFA/Asperger’s disorder than controls.

• A study of 177 children with autism showed elevated scores: 26% depression, 25% anxiety, 25% ADHD, 16% conduct disorder, and 15% oppositional-defiant disorder.
• Youth with autism (combining results from two studies):
  – 8-44% for specific phobia, 29% social anxiety disorder
  – 8-37% for OCD,
  – 10% panic disorder, 8% agoraphobia
  – 2-13% for generalized anxiety disorder
  – 28-31% for ADHD,
  – 13% for depression,
  – 12% for separation anxiety disorder,
  – 7-28% for oppositional-defiant disorder,
  – 3% conduct disorder
Table 1

<table>
<thead>
<tr>
<th>Anxiety</th>
<th>DSM</th>
<th>Typical</th>
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<tr>
<td>19</td>
<td>24</td>
<td>44</td>
</tr>
<tr>
<td>18</td>
<td>22</td>
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<td>17</td>
<td>34</td>
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<td>16</td>
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<td>13</td>
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<tr>
<td>11</td>
<td>62</td>
<td>13</td>
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</tbody>
</table>

Note: Anxiety disorders are based on DSM-IV criteria, although some cases may not meet all criteria.

Table 2

<table>
<thead>
<tr>
<th>Variable</th>
<th>No (%)</th>
<th>Yes (%)</th>
<th>Total (%)</th>
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<tbody>
<tr>
<td>Pediatric diagnosis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schizophrenia spectrum (DSM-IV)</td>
<td>10 (10.5)</td>
<td>22 (22.4)</td>
<td>32 (32.9)</td>
</tr>
<tr>
<td>Personality disorders</td>
<td>20 (20.5)</td>
<td>4 (4.5)</td>
<td>24 (24.5)</td>
</tr>
<tr>
<td>Bipolar disorder (DSM-IV)</td>
<td>25 (25.5)</td>
<td>5 (5.5)</td>
<td>30 (30.5)</td>
</tr>
<tr>
<td>Adjustment reaction (DSM-IV)</td>
<td>16 (16.5)</td>
<td>2 (2.5)</td>
<td>18 (18.5)</td>
</tr>
<tr>
<td>Depression (DSM-IV)</td>
<td>10 (10.5)</td>
<td>1 (1.1)</td>
<td>11 (11.1)</td>
</tr>
<tr>
<td>Obsessive-compulsive disorder</td>
<td>20 (20.5)</td>
<td>4 (4.5)</td>
<td>24 (24.5)</td>
</tr>
<tr>
<td>Psychiatric disorder</td>
<td>40 (40.5)</td>
<td>8 (8.5)</td>
<td>48 (48.5)</td>
</tr>
<tr>
<td>Developmental</td>
<td>10 (10.5)</td>
<td>2 (2.5)</td>
<td>12 (12.1)</td>
</tr>
<tr>
<td>Conventional</td>
<td>30 (30.5)</td>
<td>6 (6.5)</td>
<td>36 (36.5)</td>
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<tr>
<td>Established</td>
<td>20 (20.5)</td>
<td>4 (4.5)</td>
<td>24 (24.5)</td>
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</tbody>
</table>

Key Points

- The global burden of disease relative to the contribution of ODD/CD among top 20 most common and severe mental disorders.
- Co-occurring mental disorder in children and adolescents with ODD/CD is罩同and persistent.
- Concomitant mental disorders in children and adolescents with ODD/CD is more frequent than the severity of the ODD/CD itself.
- Mental wellbeing of young people with ODD/CD is more influenced by the severity of their children's co-occurring mental disorders than the severity of the child's ODD/CD.
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What is an Ideal Assessment?

- Avoid “Diagnostic Overshadowing”
- Use multi-method approach evaluating mood, personality, social skills and aberrant behavior
- Review of the client/patient’s records: medical information, illnesses, injuries, recent trauma events, past effective interventions
- Interviews with the individual, parents, teachers, and caregivers asking baseline/changes in adaptive functioning: changes in interpersonal skills, relationships, or communication skills, as well as in daily functioning.
- Observations—frequent behaviors vs. infrequent behaviors. Two methods for infrequent behaviors: Antecedent Behavior Consequence (ABC) and the scatterplot (formal and Calendar Method)
- Use Rating Scales

<table>
<thead>
<tr>
<th>TABLE 2: Properties of Somatic Events to Each Traumatic Experience During Life Span</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traumatic Experience</td>
</tr>
<tr>
<td>Losing a pet</td>
</tr>
<tr>
<td>Being physically threatened, assaulted, or attacked</td>
</tr>
<tr>
<td>Being threatened, verbally, or threatened by someone who they knew</td>
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<tr>
<td>Being kidnapped</td>
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<tr>
<td>Being physically abused</td>
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<tr>
<td>Being sexually abused</td>
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<tr>
<td>Being in a natural disaster (e.g., flood, earthquake, fire)</td>
</tr>
<tr>
<td>Being witnessed violence or death in another family member</td>
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<tr>
<td>Being threatened or exposed to violence</td>
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<tr>
<td>Being physically threatened in a family conflict</td>
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<tr>
<td>Being in a military conflict or war zone</td>
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<tr>
<td>The traumatic experience</td>
</tr>
<tr>
<td>Past</td>
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<tr>
<td>1</td>
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<tr>
<td>2</td>
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<td>3</td>
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</tbody>
</table>
**Rating Scales: The Gold Standards for Self and Caregiver Reports**

- **PIMRA**: The Psychopathology Instruments for Mentally Retarded Adults
- **DASH II**: The Diagnostic Assessment for the Severely Handicapped Scale
- **ADD**: Assessment of Dual Diagnosis
- **RSMB**: The Reiss Screen for Maladaptive Behavior
- **RSCDD**: The Reiss Scales for Children’s Dual Diagnosis
- **NCDF**: The Nisonger Child Behavior Rating Form
- **DBC**: The Developmental Behavior Checklist
- **PAS-ADD Checklist**: Psychiatric Assessment Schedules for Adults with Developmental Disabilities Checklist
Rating Scales: The Challengers to the Gold Standards

- CBCL: Child Behavioral Checklist
- GDS-LD: The Glasgow Depression Scale for people with a Learning Disability
- CDI: The Children’s Depression Inventory (CDI)
- BDI: Beck Depression Inventory
- GAS-ID: Glasgow Anxiety Scale for people with an Intellectual Disability
- ADAMS: Anxiety, Depression and Mood Scale

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Outline for Somatic Treatments

- General guidelines for Somatic Treatments
- Need to acknowledge that there is evidence for medication treatment of PD
- But need to recognize that most of the recent evidence-based treatments for DD have come from studies of youth with ASDs and mostly targeting PB/CB not formal PD in DD
- Following is a series of slides that summarizes most of the recent relevant somatic treatment studies in youth with ASD
- Also follows is an additional series of slides that identify common somatic treatments with sufficient evidence to support treatment of DD
Somatic Treatment of PD in DD

- Know what you are treating
- Know what you want to happen with treatment
- Use Scales to help identify PD and response to treatment
- Use Scatterplot, Calendar Method, or ABC graphs to understand targets of treatment
- First line treatment should involve behavioral and environmental interventions
- If you need to use medications:
  - Watch for side effects
  - Only use evidenced-based treatments when you can.

"Psychotropic medications...have side effects that [may] be harmful to the physical health of the individuals who take them, such as gait disorder, tardive dyskinesia, diabetes mellitus, tics, hair loss, acne and weight gain. The recognition of side effects is especially challenging because of the cognitive and self-awareness limitations of many individuals."


Brief Summary of Evidence in Autism Spectrum Disorders

- Atypical Antipsychotics can be used to treat irritability (aggression, self-injury, and severe tantrums), stereotypies, and hyperactivity: risperidone and aripiprazole are best.
- Methylphenidate, atomoxetine, clonidine and guanfacine are effective in reducing ADHD symptoms
- SSRI's are not effective in reducing repetitive behaviors → activation
- Anti-epileptic drugs (AEDs) have mixed results
- N-acetylcysteine (NAC) found to be helpful in improving irritability in children with ASD
Treatments Currently Under Investigation with RDBPCT

- Oxytocin
- Glutamatergic agents
- Vasopressin
- Donepezil
- Oxidative stress pathways:
  - Sulforaphane,
  - terahydrobiopterin,
  - L-carnitine and
  - methyl-B12
Insomnia Is a Problem in ID

- ASD (50-80%): see melatonin study
- Angelman Syndrome (20–80%): likely sensitive to GABAergic agents
- Cerebral Palsy: pay attention to sleep apnea, possible role for melatonin
- Rett Syndrome (80%): hard to treat due to medical complications
- Williams Syndrome: significantly more daytime sleepiness
- Smith-Magenis: possible role for melatonin

In a survey of Child and Adolescent Psychiatrists, 30% of those with ID were being treated for insomnia
<table>
<thead>
<tr>
<th>Table 1: Disease Prevention Agents for Skin Disorders in Children with Hematological Disorders</th>
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<tbody>
<tr>
<td>Disease</td>
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<td>--------</td>
</tr>
<tr>
<td>Measles</td>
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<td>Rubella</td>
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<tr>
<td>Mumps</td>
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<tr>
<td>Hepatitis A</td>
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<tr>
<td>Hepatitis B</td>
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<tr>
<td>Chickenpox</td>
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<tr>
<td>German Measles</td>
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</tbody>
</table>

Note: All vaccines are administered according to the recommended schedule by the American Academy of Pediatrics (AAP).
A Closer Look at Specific Somatic Treatments

Class: Antipsychotics

- **Generic Name:** Risperidone
- **Known for:** Irritability in autism, class problems with weight gain, movement disorders, lipid issues, metabolic syndrome/diabetes; increased prolactin levels
- **FDA Approvals:** Adult and child Schizophrenia and Bipolar I Disorder, acute manic/mixed; Irritability associated with Autism in children and adolescents
Class: Antipsychotics

- **Generic Name**: Risperidone (continued)
- **Evidence for DD**: (RDBPCT)
- High doses effective for reduction in irritability, stereotypy, and hyperactivity in ASD
- Long-term effects maintained in ASD
- Combo of risperidone/parent-training more effective in ASD
- Risperidone and aripiprazole are equal in ASD
- Tryer et al. in an RPCT showed placebo to be better than risperidone and haloperidol in reducing aggression in non-psychotic adult patients with DD.
  - Risperidone was safe and remained effective after one year in disruptive behavior disorders in children with low IQs who did not have ASD.

Class: Antipsychotics

- **Generic Name**: Aripiprazole
- Known for: Irritability in autism, class problems with weight gain, movement disorders, lipid issues, metabolic syndrome/diabetes
- **FDA Approvals**: Adult and child/adolescent for Schizophrenia, Bipolar I Disorder (manic/mixed); Adult treatment for Major Depressive Disorder (adjunctive treatment); and child/adolescent for irritability associated with ASD, Tourette Syndrome
- **Evidence for DD**: (RDBPCT)
  - Reduced irritability, stereotypy, and hyperactivity in ASD
  - Long-term effect maintained in ASD
  - Increased weight, dyslipidemia, and aggression were common, especially in antipsychotic-naive youth with baseline weight issues
  - Risperidone=aripiprazole in ASD

Class: Antipsychotics

- **Generic Name**: Olanzapine
- Known for: large amount of weight gain in addition to typical class concerns
- **FDA Approvals**: Adult Schizophrenia, Bipolar I Disorder (manic/mixed/agitation/acute depression), Major Depressive Disorder, acute treatment resistant. In children/adolescents approved for Bipolar I Disorder (manic/mixed) and Schizophrenia
- **Evidence for DD**: (RDBPCT)
  - Was effective in improving aggressive behavior in ASD, but with large amount of weight gain
Class: Antipsychotics

- **Generic Name:** Haloperidol
- **Known for:** Highly potent and specific to D2 receptors; movement disorders and associated class side effects
- **FDA Approvals:** Adult and child and adolescent psychosis and Tourette Syndrome; child and adolescent severe behavioral problems
- **Evidence for DD:** (RDBPCT)
  - Improved aggressive behaviors but higher risk than risperidone and aripiprazole
  - Tryer et al. in an RPCT showed that placebo was better than both risperidone and haloperidol in reducing aggression in non-psychotic adult patients with DD.

Class: Antipsychotics

- **Generic Name:** Quetiapine
- **Known for:** Sedation, orthostatic hypotension in addition to other class side effects
- **FDA Approvals:** Adult and child/adolescent treatment for Schizophrenia and Bipolar I Disorder (mania); also adult approved for Bipolar I Disorder (depression)
- **Evidence for DD:** (Open label studies)
  - Poor efficacy and poor toleration of side effects in ASD

Class: Antipsychotics

- **Generic Name:** Ziprasidone
- **Known for:** More weight neutral in adults, but need to pay attention to QTc
- **FDA Approvals:** Schizophrenia, Bipolar I Disorder (manic/mixed)
- **Evidence for DD:** (Open label studies)
  - In one retrospective naturalistic study 49% responders on Clinical Global Impressions-Improvement Scale (CGI-I) for ASD
  - Another small study had 75% responders on CGI-I for ASD
  - Another small open label study had 60% responders on the Maladaptive Behavior Scale and they lost weight gained from other meds
Class: Antipsychotics
- **Generic Name:** Clozapine
- **Known For:** Can have amazing results in Schizophrenia. Many worrisome side effects including collapse of the immune system; requires weekly labs for a year to check white blood count
- **FDA Approval:** Adults with Refractory Schizophrenia and Schizophrenia-associated Suicide Prevention
- **Evidence for DD:** Inconclusive at best for managing aggression in adults with ID

Class: ADHD Medication
- **Generic Name:** Methylphenidate
- **Known for:** One of most effective ADHD tx, common side effects: weight loss, anger, poor sleep
- **FDA Approvals:** Adult and child/adolescent ADHD, Adult Narcolepsy
- **Evidence for DD:** (RDBPCT)
  - Only stimulant studied in ASD
  - Effective for ADHD treatment in youth with ASD
  - Less effective than in typically developing children with ADHD
  - Aman et al. analyzed three studies demonstrating that children with ADHD and ID have significant improvements in children, less so with lower IQs

Class: ADHD Medication
- **Generic Name:** Atomoxetine
- **Known for:** Non-stimulant. Also helpful for ADHD + anxiety
- **FDA Approvals:** ADHD in both adults and youth
- **Evidence for DD:** (RDBPCT)
  - Effective in ADHD in those with ASD
  - Atomoxetine plus parent training was more effective than med or parent training alone in ADHD in those with ASD
Class: HTN Meds for ADHD
- **Generic Name:** Clonidine and Guanfacine (similar meds)
- **Known for:** Alpha 2-agonist. It can also treat tics, insomnia, Tourette’s, agitation. Also, lowers blood pressure, sedating, rebound hypertension
- **FDA Approvals:** Adult Hypertension; Adult and child and adolescent Severe Cancer-Related Pain, adjunctive treatment; Children and adolescent ADHD
- **Evidence for DD:** (RDBPCT)
- Effective for ADHD symptoms in children with ASD

Class: SSRI Antidepressants
- **Generic Name:** All SSRIs (Selective Serotonin Reuptake Inhibitors)
- **Known for:** Black Box warning for Suicidal Ideation, some weight gain, activation of mania or aggression
- **FDA Approvals:** Numerous for depressive/anxiety disorders in both adults and youth
- **Evidence for DD:**
  - For core symptoms of ASD ineffective and possibly activating and aggression inducing (RDBPCT)
  - Aman et al. in a review of many open label studies that these meds were indeed useful in anxiety and depression in DD.

Class: SSRI Antidepressants
- **Continued from prior slide**
- **Evidence for DD:**
  - Open label citalopram study found 60% of patients with ID and depression improved on the Clinical Global Improvement Scale (CGIS)
  - In an open retrospective study of adults with DD, Ulzen and Hughes demonstrated an overall rate of 12.3% activation into hypomania compared to the general population rate of 0.5–1%.
Class: Non-SSRI Antidepressants
- **Generic Name:** Clomipramine
- **Known for:** Gold Standard for OCD, lots of potential side effects
- **FDA Approvals:** Adult and child and adolescent OCD
- **Evidence for DD:** (RDBPCT)
  - In youth with ASD, not well tolerated and not enough evidence to use
  - In adults with ASD, effective for stereotypes, anger, compulsions/ritualized behaviors, and hyperactivity

Class: Mood Stabilizer
- **Generic Name:** Lithium
- **Known For:** Classic treatment for mania. Side effect profile that is well-understood.
- **FDA Approval:** Bipolar Disorder I (mania, acute and maintenance) for both adults and children
- **Evidence for DD:**
  - Two studies dating back to 1987 and 1993 showing up to a 77% response rate in individuals with both ID and Bipolar Disorder (RCT & RDBPCT)
  - Retrospective chart review found lithium to be 43% to 71% effective in children who had ASD and mood disorder symptoms

Class: Anti-Epilepsy Drug (AED)
- **Generic Name:** Divalproex Sodium
- **Known for:** It is used commonly in seizure control, Bipolar Disorder and aggression. More worrisome in females of child-bearing age.
- **FDA Approvals:** Seizures in both adults and youth; Adults only for Bipolar I Disorder (manic), and Migraine
- **Evidence for DD:** (RDBPCT)
  - Maybe? in treatment of irritability in ASD
  - Kotsasif reviewed 17 open label studies showing that 77% of patients' manic/aggressive behavior responded
Class: Anti-Epilepsy Drug (AED)
- **Generic Name:** Topiramate
- **Known for:** It is used commonly in seizure control and migraine treatment. May help with weight gain when on antipsychotics, but with other complications
- **FDA Approvals:** Adults and youth for Seizures and Migraine prophylaxis
- **Evidence for DD:** (RDBPCT)
  - In combination with risperidone it may help with PB/GB in children with ASD

Class: NMDA receptor modulators and antagonists
- **Generic Name:** N-acetylcysteine (NAC), amantadine, riluzole and memantine
- **Known for:** Tylenol overdoses, Trichotillomania, OCD, ADHD, flu, ALS, dementia and Parkinson’s Disease treatment
- **Evidence for DD:** (RDBPCT)
  - NAC found to be helpful in improving irritability in children with ASD
  - Amantadine, riluzole and memantine ineffective as single agent in several trials
  - Yet, may be effective in combo with antipsychotics in improving behavioral measures in children with ASD

Class: Alzheimer’s Dementia/Cholinesterase Inhibitor
- **Generic Name:** Donepezil
- **Known for:** Alzheimer’s treatment
- **FDA Approvals:** Alzheimer Dementia
- **Evidence for DD:** (RDBPCT)
  - Two trials with mixed results in core features of ASD
  - Ongoing trials currently
Class: Opioid Antagonist

- **Generic Name:** Naltrexone
- **Known for:** Treatment for Substance Abuse disorders
- **FDA Approvals:** Opioid Addiction and Alcohol Dependence
- **Evidence for DD:**
  - No good clinical trials to support treatment of SIB in those with ASD
  - But, Roy et al, reviewed 10 RDBPCT and reported that there may be evidence for improvement for hyperactivity and restlessness in children with ASD

Class: Sedative Hypnotic

- **Generic Name:** Melatonin
- **Known for:** Effective with sleep; some experience possible nightmares, Non-FDA regulated OTC supplement
- **FDA Approvals:** Circadian Rhythm Sleep Disorder in Blind Children and adults
- **Evidence for DD:** (RDBPCT)
  - Melatonin plus CBT found to help with insomnia (better than CBT alone)
  - See Slide 55 for three more trials

Class: ECT Treatment

- **Indications:** Severe/Resistant Depression, Severe Mania, Catatonia, PB/CB in people with Dementia. Useful in pregnant patients when medications are considered unsafe
  - Kessler [32] reviewed 16 case reports between 1968 and 2001 of ECT in patients with ID and a variety of PD.
  - The treatment was successful despite failures on all prior medication treatments
- **Evidence for DD:**
  - No significant complications
  - No cognitive decline from the treatment
Dual Diagnosis: Assessment, Diagnosis and Treatment

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Turgay et al. Long-Term Safety and Efficacy of Risperidone for the Treatment of Disruptive Behavior Disorders in Children With Subaverage IQs. Pediatrics; 110(3); 2002.
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