Psychotropic Medications for Children & Adolescents: Facts, Myths & More

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Goals & Objectives

1. Recognize common mental health disorders

2. Identify the names and indications for use of commonly prescribed psychotropic medications (how psychotropic medications are used)
Goals & Objectives

UNDERSTAND THE FACTS!
MENTAL HEALTH DISORDERS

ADHD

“OFF LABEL” USE

ANXIETY DISORDERS

AGGRESSION

DEPRESSION

INSOMNIA

SCHIZOPHRENIA

TAKE AWAY POINTS

BIPOLAR DISORDER
Mental Health Disorders
What makes a mental health problem clinical (need for treatment)?

Severity

Impairment
Prevalence of behavioral health disorders 3-17 yo

- ADHD: ~6.8%
- Behavioral or conduct disorder: 3.5%
- Anxiety: 3.0%
- Depression: 2.1%

Source: MMWR, 2013
Rates of Mental Health Disorders in Children and Adolescents

General population:
- About 20% of children in the general population exhibit some kind of mental health disorder

Foster care:
- The national range of children in foster care that have significant mental health problems is 23-80%
“Off label” use of medications
What is “off label” prescribing?

The FDA observes that accepted medical practice includes medication use that is not reflected in approved medication labeling.

This is called “off label” use.
What is “off label” prescribing?

Off label psychotropic medication use may be justified when the benefits of treatment outweigh the risks and judged to be “medically appropriate” for the patient.

Source: FDA.gov
What is “off label” prescribing?

⚠️ This practice is legal and common.

⚠️ In fact, one in five prescriptions written today are for off-label use.
Attention-Deficit/Hyperactivity Disorder (ADHD)

Stimulants & Other Medications Used to Treat ADHD
How do stimulant medications compare?

As a class all stimulant medications are about equally effective in treating the core symptoms of ADHD.
How do stimulant medications compare?

BUT...

Significant differences in metabolism & treatment responsivity in individual patients exists.

SO...equivalent efficacy does not translate into equal efficacy in individual patients.
How do stimulant medications compare?

SO...

The same prescription doesn't work for everyone.
As a GENERAL rule...

Treatment with a psychotropic medication is initiated:

- Increased slowly until the target symptoms improve

OR

- The individual displays intolerable side effects (usually requiring a change)
## Stimulants Used to Treat ADHD

<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Typical Brand Names®</th>
<th>FDA Approved for ADHD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amphetamine</td>
<td>Adzenys XR-ODT</td>
<td>Children, Adolescents</td>
</tr>
<tr>
<td></td>
<td>Evekeo</td>
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<td>Lisdexamphetamine</td>
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<td>Methylphenidate</td>
<td>Daytrana Patch</td>
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<tr>
<td></td>
<td>Methylin</td>
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</tr>
<tr>
<td></td>
<td>Ritalin</td>
<td>Children, Adolescents</td>
</tr>
<tr>
<td>Methylphenidate ER</td>
<td>Aptensio XR</td>
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</tr>
<tr>
<td></td>
<td>Concerta</td>
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<td>Quillichew ER</td>
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<td>Mixed Amphetamine salts</td>
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## Non-Stimulant Medications Used to Treat ADHD

<table>
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<tr>
<th>Generic Name</th>
<th>Typical Brand Names®</th>
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<tbody>
<tr>
<td>Atomoxetine</td>
<td>Strattera</td>
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<tr>
<td>Bupropion</td>
<td>Wellbutrin SR/XL</td>
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<tr>
<td>Clonidine</td>
<td>Catapres</td>
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<tr>
<td>Clonidine ER</td>
<td>Kapvay</td>
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<tr>
<td>Guanfacine</td>
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<tr>
<td>Guanfacine ER</td>
<td>Intuniv</td>
<td>Children, Adolescents, Adults</td>
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</table>
Medication Treatment of ADHD

**Level 1 (monotherapy):**
- Stimulant (methylphenidate or amphetamine class, either short or long acting)
  - OR
- Guanfacine ER (Intuniv®) or Clonidine ER (Kapvay®)

**Level 2 (monotherapy):**
- Different stimulant
  - OR
- Guanfacine ER (Intuniv®) or Clonidine ER (Kapvay®) (if not tried)

**Level 3 (monotherapy):**
- Atomoxetine (Strattera®)

**Level 4:**
- Reassess/refer
Remember...

Monotherapy = Use of a single medication
Time of day that ADHD symptoms are most bothersome

- School Time: 46%
- Afterschool: 15%
- Homework Time: 23%
- Morning before school: 13%
- Bedtime: 3%

Survey N=11,576

Castellanos 2019
Anxiety Disorders
Anxiety Disorders

DID YOU KNOW?

When medications are indicated, antidepressant medications are first line medicines for the treatment of:

- Generalized Anxiety Disorder
- Social Anxiety Disorder*
- Panic Disorder*
- OCD

*Off label for children/adolescents
Anxiety Disorders

DID YOU KNOW?

Other medications may have a use:

- **Buspirone*/Bupsar®
- **Benzodiazepines** (Alprazolam*/Xanax®, Clonazepam*/Klonipin®)
  - May be useful for short term, situational anxiety
Anxiety Disorders

Only 1 antidepressant is FDA approved for the treatment of generalized anxiety disorder in children and adolescents:

🔹 duloxetine (Cymbalta®; 7 – 17 yo)
Anxiety Disorders

Solid evidence for the use of fluoxetine* (Prozac®) or sertraline* (Zoloft®) in the treatment of Moderate-Severe anxiety disorder

Initiate treatment alone or in combination with CBT with:
- fluoxetine (Prozac®)
- sertraline (Zoloft®)

*Off label
<table>
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<td>Vortioxetine</td>
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<td>Citalopram</td>
<td>Celexa</td>
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<td>Duloxetine</td>
<td>Cymbalta</td>
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<tr>
<td>Venlafaxine</td>
<td>Effexor</td>
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</tr>
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<td>Venlafaxine XR</td>
<td>Effexor XR</td>
<td>Adults</td>
</tr>
<tr>
<td>Selegine</td>
<td>Emsam patch</td>
<td>NO</td>
</tr>
<tr>
<td>Levomilnacipran CR</td>
<td>Fetzima</td>
<td>Adults</td>
</tr>
<tr>
<td>Escitalopram</td>
<td>Lexapro</td>
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</tr>
<tr>
<td>Fluvoxamine</td>
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<tr>
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<td>Luvox CR</td>
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</tr>
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<td>Paroxetine</td>
<td>Paxil, Pexeva</td>
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</tr>
<tr>
<td>Paroxetine CR</td>
<td>Paxil CR</td>
<td>Adults</td>
</tr>
<tr>
<td>Desvenlafaxine</td>
<td>Pristiq</td>
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<td>Vilazodone</td>
<td>Viibryd</td>
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<td>Bupropion</td>
<td>Wellbutrin</td>
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<tr>
<td>Bupropion SR/XL</td>
<td>Wellbutrin SR/XL</td>
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</tr>
<tr>
<td>Sertraline</td>
<td>Zoloft</td>
<td>NO</td>
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</table>
Depressive Disorders & Antidepressants
How Long Should Antidepressants be Taken?

- Usual, non depressed emotional state
- Remission
- Recovery

- Begin meds
- Continuation with medication & symptom free for 6-12 months

Response

Time
## Antidepressants - Newer

<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Brand Name®</th>
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</thead>
<tbody>
<tr>
<td>Vortioxetine</td>
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<tr>
<td>Citalopram</td>
<td>Celexa</td>
<td>Adults</td>
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<tr>
<td>Duloxetine</td>
<td>Cymbalta</td>
<td>Adults</td>
</tr>
<tr>
<td>Venlafaxine</td>
<td>Effexor</td>
<td>Adults</td>
</tr>
<tr>
<td>Venlafaxine XR</td>
<td>Effexor XR</td>
<td>Adults</td>
</tr>
<tr>
<td>Selegine</td>
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<td>Adults</td>
</tr>
<tr>
<td>Levomilnacipran CR</td>
<td>Fetzima</td>
<td>Adults</td>
</tr>
<tr>
<td>Escitalopram</td>
<td>Lexapro</td>
<td>Adolescents (12-17), Adults</td>
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<tr>
<td>Fluvoxamine CR</td>
<td>Luvox CR</td>
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<td>Paroxetine</td>
<td>Paxil, Pexeva</td>
<td>Adults</td>
</tr>
<tr>
<td>Paroxetine CR</td>
<td>Paxil CR</td>
<td>Adults</td>
</tr>
<tr>
<td>Desvenlafaxine</td>
<td>Pristiq</td>
<td>Adults</td>
</tr>
<tr>
<td>Fluoxetine</td>
<td>Prozac</td>
<td>Child/Adolescents (8-17), Adults</td>
</tr>
<tr>
<td>Mirtazapine</td>
<td>Remeron</td>
<td>Adults</td>
</tr>
<tr>
<td>Fluoxetine</td>
<td>Serafem</td>
<td>NO</td>
</tr>
<tr>
<td>Doxepin</td>
<td>Silenor</td>
<td>NO</td>
</tr>
<tr>
<td>Vilazodone</td>
<td>Viibryd</td>
<td>Adults</td>
</tr>
<tr>
<td>Bupropion</td>
<td>Wellbutrin</td>
<td>Adults</td>
</tr>
<tr>
<td>Bupropion SR/XL</td>
<td>Wellbutrin SR/XL</td>
<td>Adults</td>
</tr>
<tr>
<td>Sertraline</td>
<td>Zoloft</td>
<td>Adults</td>
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</table>
# Antidepressants - Older

<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Brand Name®</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Clomipramine</td>
<td>Anafranil</td>
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</tr>
<tr>
<td>Doxepin</td>
<td>Sinequan</td>
<td>Adults</td>
</tr>
<tr>
<td>Trazodone</td>
<td>Desyrel; Oleptro</td>
<td>Adults</td>
</tr>
<tr>
<td>Amitryptyline</td>
<td>Elavil</td>
<td>Adults</td>
</tr>
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<td>Nortryptiline</td>
<td>Pamelor</td>
<td>Adults</td>
</tr>
<tr>
<td>Imipramine</td>
<td>Tofranil</td>
<td>Adults</td>
</tr>
</tbody>
</table>
Medication Treatment of Major Depressive Disorder

**Level 1 (monotherapy):**
- fluoxetine (Prozac®): 8 – 17 yo
  - or
- escitalopram (Lexapro®): 12 – 17 yo

**Level 2 (monotherapy):**
If not effective at optimum dose for long enough period of time or not tolerated
Switch to one not used above- escitalopram (Lexapro®) or fluoxetine (Prozac®)

**Level 3 (monotherapy):**
- Diagnostic review and/or consultation
- Switch previously used antidepressant to sertraline* (Zoloft®), citalopram* (Celexa®) or bupropion* (Wellbutrin®)

*Off label
HIGHLIGHTS OF PRESCRIBING INFORMATION
These highlights do not include all the information needed to use PROZAC safely and effectively. See full prescribing information for PROZAC.
PROZAC (fluoxetine hydrochloride) Pulvules for oral use
PROZAC (fluoxetine hydrochloride) delayed-release capsules for oral use

Initial U.S. Approval: 1987

WARNING: SUICIDALITY AND ANTIDEPRESSANT DRUGS
See full prescribing information for complete boxed warning.
Increased risk of suicidal thinking and behavior in children, adolescents, and young adults taking antidepressants for Major Depressive Disorder (MDD) and other psychiatric disorders (5.1).
When using PROZAC and olanzapine in combination, also refer to Boxed Warning section of the package insert for Symbax.

RECENT MAJOR CHANGES

INDICATIONS AND USAGE
PROZAC® is a selective serotonin reuptake inhibitor indicated for:
• Acute and maintenance treatment of Major Depressive Disorder (MDD) in adult and pediatric patients aged 8 to 18 years (1.1)
• Acute and maintenance treatment of Obsessive Compulsive Disorder (OCD) in adult and pediatric patients aged 7 to 17 years (1.2)
• Acute and maintenance treatment of Bulimia Nervosa in adult patients (1.3)
• Acute treatment of Panic Disorder, with or without agoraphobia, in adult patients (1.4)

PROZAC and olanzapine in combination for:
• Acute treatment of Depressive Episodes Associated with Bipolar I Disorder in adults (1.5)
• Acute treatment of Treatment Resistant Depression in adults (Major Depressive Disorder in adult patients who do not respond to 2 separate trials of different antidepressants of adequate dose and duration in the

SAFETY OF THE COADMINISTRATION OF Doses above 18 mg olanzapine with 75 mg fluoxetine has not been evaluated (2.5, 2.6)

DOSE FORMS AND STRENGTHS
• Pulvules: 10 mg, 20 mg, 40 mg (3)
• Weekly capsules: 90 mg (3)

CONTRAINDICATIONS
• Do not use with an MAOI or within 14 days of discontinuing an MAOI due to risk of drug interaction. At least 5 weeks should be allowed after stopping PROZAC before treatment with an MAOI (4, 7.1)
• Do not use with pimozide due to risk of drug interaction or QTc prolongation (4, 7.9)
• Do not use with thioridazine due to QTc interval prolongation or potential for elevated thioridazine plasma levels. Do not use thioridazine within 5 weeks of discontinuing PROZAC (4, 7.9)
• When using PROZAC and olanzapine in combination, also refer to the Contraindications section of the package insert for Symbax (4)

WARNINGS AND PRECAUTIONS
• Clinical Worsening and Suicide Risk: Monitor for clinical worsening and suicidal thinking and behavior (5.1)
• Serotonin Syndrome or Neuroleptic Malignant Syndrome (NMS)-like Reactions: Have been reported with PROZAC. Discontinue PROZAC and initiate supportive treatment (5.2)
• Allergic Reactions and Rash: Discontinue upon appearance of rash or allergic phenomena (5.3)
• Activation of Mania/Hypomania: Screen for Bipolar Disorder and monitor for mania/hypomania (5.4)
• Seizures: Use cautiously in patients with a history of seizures or with conditions that potentially lower the seizure threshold (5.5)
• Altered Appetite and Weight: Significant weight loss has occurred (5.6)
• Abnormal Bleeding: May increase the risk of bleeding. Use with NSAIDs, aspirin, warfarin, or drugs that affect coagulation may potentiate the risk of gastrointestinal or other bleeding (5.7)
• Hyponatremia: Has been reported with PROZAC in association with syndrome of inappropriate antidiuretic hormone (SIADH) (5.8)
• Anxiety and Insomnia: May occur (5.9)
Boxed Warning: Children, Adolescents, Young Adults & Antidepressants

- In 2008 studies revealed a slightly increased risk of suicidal thoughts & behaviors among a small group of youth less than 24 years old who are treated with antidepressants compared with placebo.

- Newer research does not establish this association.
Antidepressants at Autopsy in Hispanic Suicidal Youth in Miami Dade County, Florida

Cortes E, Cubano A, Lewis J, Castellanos D (2011)

-reviewed the Medical Examiner’s Office records of 253 persons 24 years or younger classified as suicides from 1990-2007

Antidepressants at autopsy were present in only 6% (n=15) of the deaths
So...What about antidepressants & suicidality?

- Newer studies evaluated suicidality more systematically after antidepressants were started in youth.

- None of the research studies found differences in suicidal behaviors between youth treated with antidepressants and placebo.

Source: Ignaszewski & Waslick, 2018
Schizophrenia & Antipsychotics
Antipsychotics

These medications may improve:

- Psychotic symptoms (eg, hallucinations, delusions, impaired reality, disorganized thinking, etc).
- Bipolar mood changes, such as manic episodes; bipolar depression less so.
- Depression, as an adjunct to antidepressants.
- Irritability, associated with autism spectrum disorder.
- Agitation or aggression.
Antipsychotics

Antipsychotic medications are *FDA approved* to treat:

- Schizophrenia spectrum & other psychotic disorders
- Bipolar and related disorders
- Major Depressive Disorder (augmentation)
Antipsychotics

Antipsychotic medications are *FDA approved* to treat:

- Autism Spectrum Disorder (irritability):
  - Aripiprazole (Abilify)
  - Risperidone (Risperdal)
Antipsychotics

Antipsychotic medications are *FDA approved* to treat...

*Acute treatment of agitation:*
- Aripiprazole (Abilify)
- Loxitane (Adasuve#) - Inhaler
- Olanzapine (Zyprexa)
- Ziprasidone (Geodon)
The following antipsychotics are FDA approved for the treatment of *schizophrenia* in children and adolescents:

- aripiprazole (Abilify®)
- lurasidone (Latuda®)
- olanzapine (Zyprexa®)
- paliperidone (Invega®)
- quetiapine (Seroquel®)
- risperidone (Risperdal®)

- haloperidol (Haldol®; 3-17 yo)
- chlorpromazine (Thorazine®; 1-17 yo)
How do antipsychotic medications Compare?

DID YOU KNOW...

The 6 antipsychotic medications are about equally effective in treating hallucinations, delusions & disorganization.
Antipsychotics

The following antipsychotics are FDA approved for the treatment of *schizophrenia* in children and adolescents:

- aripiprazole (Abilify®)
- lurasidone (Latuda®)
- olanzapine (Zyprexa®)
- paliperidone (Invega®)
- quetiapine (Seroquel®)
How do antipsychotic medications Compare?

BUT...

The same prescription doesn't work for everyone.
DID YOU KNOW...

Response over the first 2-4 weeks of antipsychotic therapy is highly predictive of long-term response.
DID YOU KNOW...

In contrast to their broadly similar efficacy, antipsychotics differ markedly in their adverse effect profiles.
Doctors typically choose an antipsychotic based on:

- Individual/parental preference
- Prior treatment response
- Prior side-effect experience
- Medical history and risk factors
- Adherence history
Doctors typically...

Side-effect profile is probably a major factor in antipsychotic choice.
## Antipsychotics - Newer

<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Brand Name®</th>
<th>FDA Approved for Schizophrenia</th>
</tr>
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<tbody>
<tr>
<td>Aripiprazole</td>
<td>Abilify</td>
<td>Adults; Adolescents (13-17)</td>
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<tr>
<td>Aripiprazole</td>
<td>Abilify Maintena*</td>
<td>Adults</td>
</tr>
<tr>
<td>Asenapine</td>
<td>Saphris</td>
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<td>Cariprazine</td>
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<td>Lurasidone</td>
<td>Latuda</td>
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<td>Olanzapine</td>
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</tr>
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<td>Ziprasidone</td>
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* Long acting injection
## Antipsychotics - Older

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<td>Chlorpromazine</td>
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</tr>
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<td>Fluphenazine</td>
<td>Prolixin Decanoate*</td>
<td>Adults</td>
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<td>Haloperidol</td>
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<td>Haloperidol</td>
<td>Haldol Decanoate*</td>
<td>Adults</td>
</tr>
<tr>
<td>Loxapine</td>
<td>Loxitane</td>
<td>Adults</td>
</tr>
<tr>
<td>Perphenazine</td>
<td>No current brand name exists</td>
<td>Adults</td>
</tr>
<tr>
<td>Pimozide</td>
<td>Orap</td>
<td>No</td>
</tr>
<tr>
<td>Thioridazine</td>
<td>No current brand name exists</td>
<td>Adults</td>
</tr>
<tr>
<td>Thiothixene</td>
<td>Navane</td>
<td>Adults</td>
</tr>
<tr>
<td>Trifluoperazine</td>
<td>No current brand name exists</td>
<td>Adults</td>
</tr>
</tbody>
</table>

*Long-acting injection*
The following antipsychotics are FDA approved for the treatment of schizophrenia in children and adolescents:

- aripiprazole (Abilify®)
- lurasidone (Latuda®)
- olanzapine (Zyprexa®)
- quetiapine (Seroquel®)
- risperidone (Risperdal®)
- haloperidol (Haldol®; 3-17 yo)
- chlorpromazine (Thorazine®; 1-17 yo)
Medication Treatment of Schizophrenia

Level 1 (monotherapy):
One of the following FDA approved meds:

- aripiprazole (Abilify®)
- lurasidone (Latuda®)
- olanzapine (Zyprexa®)
- paliperidone (Invega®)
- quetiapine (Seroquel®)
- risperidone (Risperdal®)

Level 2 (monotherapy):
If initial medication is unsuccessful, try monotherapy with another FDA approved antipsychotic with low metabolic side effects.
Bipolar Disorder & Mood Stabilizers
Mood Stabilizers

- Includes a group of different medications used to treat bipolar disorder

- Many of these medications were originally developed to treat seizures (eg, Divalproex/Depakote®; Lamotrigine/Lamictal®)

- Includes lithium

- Antipsychotic medications are also considered mood stabilizers
## Mood stabilizers

<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Brand Name®</th>
<th>FDA Approved for Bipolar Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbamazepine</td>
<td>Tegretol</td>
<td>NO</td>
</tr>
<tr>
<td>Carbamazapine ER</td>
<td>Equetro</td>
<td>Adults</td>
</tr>
<tr>
<td>Divalproex/Valproic Acid</td>
<td>Depakote / Depakene /</td>
<td>Adults</td>
</tr>
<tr>
<td></td>
<td>Depakote ER</td>
<td></td>
</tr>
<tr>
<td>Gabapentin</td>
<td>Neurontin</td>
<td>NO</td>
</tr>
<tr>
<td>Lamotrigine</td>
<td>Lamictal</td>
<td>Adults-Bipolar Depression</td>
</tr>
<tr>
<td>Lithium</td>
<td>Eskalith / Lithobid</td>
<td>Adults; Adolescents (12-17)</td>
</tr>
<tr>
<td>Oxcarbazapine</td>
<td>Trileptal</td>
<td>NO</td>
</tr>
<tr>
<td>Topiramate</td>
<td>Topamax</td>
<td>NO</td>
</tr>
</tbody>
</table>
Antipsychotics

Antipsychotic medications are FDA approved to treat:

- Schizophrenia spectrum & other psychotic disorders
- Bipolar and related disorders
- Major Depressive Disorder (augmentation)
- Autism Spectrum Disorder (irritability):
  - Aripiprazole (Abilify)
  - Risperidone (Risperdal)
Antipsychotics

The following antipsychotics are FDA approved for the treatment of bipolar disorder in children and adolescents:

- aripiprazole (Abilify®)
- asenapine (Saphris®)
- lurasidone (Latuda®)
- olanzapine (Zyprexa®)
- quetiapine (Seroquel®)
- risperidone (Risperdal®)
# Antipsychotics - Newer

<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Brand Name®</th>
<th>FDA Approved for</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mania/Bipolar</td>
</tr>
<tr>
<td>Aripiprazole</td>
<td>Abilify</td>
<td>Adults; Child &amp; Adolescents (10-17)</td>
</tr>
<tr>
<td>Aripiprazole</td>
<td>Abilify Maintena*</td>
<td>Adults</td>
</tr>
<tr>
<td>Asenapine</td>
<td>Saphris</td>
<td>Adults; Child &amp; Adolescents (10-17)</td>
</tr>
<tr>
<td>Brexpiprazole</td>
<td>Rexulti</td>
<td>No</td>
</tr>
<tr>
<td>Cariprazine</td>
<td>Vraylar</td>
<td>Adults; Bipolar Depression</td>
</tr>
<tr>
<td>Clozapine</td>
<td>Clozaril</td>
<td>No</td>
</tr>
<tr>
<td>Iloperidone</td>
<td>Fanapt</td>
<td>No</td>
</tr>
<tr>
<td>Lurasidone</td>
<td>Latuda</td>
<td>Adults; Bipolar Depression-Adults; Child &amp; Adolescents (10-17)</td>
</tr>
<tr>
<td>Loxapine</td>
<td>Adasuve</td>
<td>No</td>
</tr>
<tr>
<td>Olanzapine</td>
<td>Zyprexa Relprevv*</td>
<td>Adults</td>
</tr>
<tr>
<td>Olanzapine</td>
<td>Zyprexa</td>
<td>Adults; Adolescents (13-17)</td>
</tr>
<tr>
<td>Paliperidone</td>
<td>Invega</td>
<td>No</td>
</tr>
<tr>
<td>Paliperidone</td>
<td>Invega Sustenna*</td>
<td>No</td>
</tr>
<tr>
<td>Paliperidone</td>
<td>Invega Trinza*</td>
<td>No</td>
</tr>
<tr>
<td>Quetiapine</td>
<td>Seroquel</td>
<td>Adults; Child &amp; Adolescents (10-17)</td>
</tr>
<tr>
<td>Risperidone</td>
<td>Risperdal</td>
<td>Adults; Child &amp; Adolescents (10-17)</td>
</tr>
<tr>
<td>Risperidone</td>
<td>Risperdal Consta*</td>
<td>Adults</td>
</tr>
<tr>
<td>Ziprasidone</td>
<td>Geodon</td>
<td>Adults</td>
</tr>
</tbody>
</table>

* Long-acting injection
Mood Stabilizers & Suicidality

- The FDA has issued a warning for all of the mood stabilizers listed in the previous table EXCEPT lithium.

- This warning alerts people to the “increased risk of suicidal thinking and behavior...”
Aggressive Behaviors
Typology (types) of Aggression
Types of Aggression

Proactive / Premeditated aggression –

- Behavior is initiated without immediate provocation
- Planned or conscious aggressive act, not spontaneous or preceded by strong emotional state
- Proactive aggression is manipulative, callous and is often “instrumental”, in that used in pursuit of attaining a goal
Types of Aggression

Reactive / Impulsive / Emotive aggression

- A reactive or emotionally charged aggressive response distinguished by a loss of behavioral control that is performed in response to real or perceived provocation.

- Reactive aggression has been defined as a defensive response to a perceived threat, fear, or provocation, and evidenced by a hostile attributional bias.
Understanding *Reactive/Impulsive/Emotive* Aggression in Teens

- **Stressor**
- **Baseline/usual emotional state (predisposition)**
- **Intense Emotion**
- **Cognitive Distortions-Thinking changes**
- **AGGRESSION**
- **Baseline emotional state**
Assessing & Intervening
Individual Youth with Aggressive Behaviors
Assessment
F.I.N.D.

F -- Frequency of aggression
I -- Intensity
N -- Number of different aggressive behaviors
D -- Duration of aggressive outburst
Number of Different types of reactive aggressive behaviors

- Verbal
- Destruction of property
- Cruelty to Animals
- Striking others
- Use weapon to harm others
Address Comorbid Psychiatric Disorders

- Attention-Deficit/Hyperactivity Disorder (ADHD)
- Conduct Disorder
- Oppositional Defiant Disorder (ODD)
- Disruptive Mood Dysregulation Disorder (DMDD)
- Bipolar Disorder
- Autism Spectrum Disorder (ASD) & Intellectual Disability
- Use of drugs and/or alcohol
- Major Depressive Disorder
What about medications for aggression?

- Medications should never be sole intervention for youth aggression
- Always treat comorbid disorder

- For **Severe** Reactive-Impulsive-Emotive aggression, if benefits outweigh risks, may consider starting with low-dose risperidone or aripiprazole
Insomnia/Sleep Medications
NEW Boxed Warning
Certain Insomnia/Sleep Medications

- FDA is advising that rare but serious injuries have happened with certain common prescription insomnia medicines because of sleep behaviors, including:
  - Sleepwalking
  - Sleep driving
  - Engaging in other activities while not fully awake.

- These complex sleep behaviors have also resulted in deaths.
NEW Boxed Warning
Certain Insomnia/Sleep Medications

These behaviors appear to be more common with:

- Eszopiclone (Lunesta®)
- Zaleplon (Sonata®)
- Zolpidem (Ambien®/Ambien CR®)
# Common Medications Used to Treat Insomnia

<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Brand Name®</th>
<th>FDA Approved for Insomnia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clonidine</td>
<td>Catapres</td>
<td>NO</td>
</tr>
<tr>
<td>Doxepin</td>
<td>Silenor</td>
<td>Adults</td>
</tr>
<tr>
<td>Emazepam</td>
<td>Restoril</td>
<td>Adults</td>
</tr>
<tr>
<td>Eszopiclone</td>
<td>Lunesta</td>
<td>Adults</td>
</tr>
<tr>
<td>Mirtazapine</td>
<td>Remeron</td>
<td>NO</td>
</tr>
<tr>
<td>Quetiapine</td>
<td>Seroquel</td>
<td>NO</td>
</tr>
<tr>
<td>Ramelteon</td>
<td>Rozerem</td>
<td>Adults</td>
</tr>
<tr>
<td>Trazodone</td>
<td>Desyrel</td>
<td>NO</td>
</tr>
<tr>
<td>Triazolam</td>
<td>Halcion</td>
<td>Adults</td>
</tr>
<tr>
<td>Suvorexant</td>
<td>Belsomra</td>
<td>Adults</td>
</tr>
<tr>
<td>Zaleplon</td>
<td>Sonata</td>
<td>Adults</td>
</tr>
<tr>
<td>Zolpidem</td>
<td>Ambien , Edluar, Intermezzo</td>
<td>Adults</td>
</tr>
</tbody>
</table>

*OTC Sleep Aids: Melatonin; Diphenhydramine(Benadryl®); Doxylamine(Unisom®/Nyquil®)
Select Medications for Sleep Disturbance in Youth

- Melatonin

- Alpha-2 Agonists:
  - Clonidine*, Guanfacine*

- Antihistamines:
  - Diphenhydramine, Doxylamine, Hydroxyzine*

*Off label
Select Medications for Sleep Disturbance in Youth

- **Antidepressants:**
  - Trazodone*, Mirtazapine*, Doxepin*, Amitriptyline*

- **Benzodiazepines***

- **Zolpidem*** (Ambien®)

- **Ramelteon*** (Lunesta®)

*Off label
Dietary Supplements

- Valerian
- Kava-Kava
- Passion flower
- Skullcap
- Lavender
- Hops
- Glycine
- Hyoscyamus
- Stramonium
- L-Theanine
- Griffonia
- Wild jujube seeds
- Chamomile
- L-Tryptophan
Insomnia

NOTE:
Use of antipsychotic meds, such as quetiapine (Seroquel®), is not recommended for the management of insomnia due to the potential metabolic side effects & lack of scientific evidence supporting their use.
Medication Treatment of Sleep Disturbances in Youth

Psychosocial/nonpharmacological intervention & treatment of comorbidities

**Level 1 (monotherapy):**
- Melatonin

**Level 2 (monotherapy):**
- Clonidine* or Diphenhydramine

**Level 3:**
- Reassess/refer

*Off label*
Take Away Points

- Evidence for indication
- Evidence for effectiveness

- Age related effects
- Diagnosis related factors
- Side effects
- Comorbid conditions
- More medications
- Drug interactions

Informed decision making
Take Away Points

- Age related effects
- Diagnosis related factors
- Side effects
- Comorbid conditions
- More medications
- Drug interactions

Risks

Informed decision making

Benefits

- Evidence for indication
- Evidence for effectiveness
Take Away Points

Medications can be an important part of treatment for some emotional and behavioral disorders in children and adolescents.

Psychotropic medications should only be used as one part of a comprehensive treatment plan.
Take Away Points

➔ Informed decision making is important.

➔ APPROPRIATE use of medications is the key.

➔ Taking too much or too little of a medication can have undesired consequences!
Parting Thoughts

Our community is our future. We all share the responsibility.

Daniel Castellanos, MD
Assistant Dean for Graduate Medical Education
Founding Chair, Department of Psychiatry & Behavioral Health
Professor of Psychiatry & Pediatrics