

AUTISM MEDICATIONS

https://iancommunity.org/cs/what_do_we_know/medication

Interactive Autism Network at Kennedy Krieger Institute
ian@kennedykrieger.org

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No medication is currently approved to treat the core symptoms of autism. However, a number of medications are prescribed to treat other conditions and symptoms often found in children and adults with autism, such as attention-deficit hyperactivity disorder, anxiety disorder, self-injury, aggression, and seizure disorders. Here is an overview of those drugs.

This category includes all prescription and non-prescription drugs that are intended to treat, prevent, or alleviate any physical or psychological symptoms commonly experienced by children with ASD. The medications used for ASD aren't usually intended to correct the underlying neurological or developmental abnormalities, but instead are directed to help the difficulties that result from these changes. Currently, no one knows for sure how many children with ASD are taking medications, but rough estimates are around 50 percent. Medications are often a key component to the overall treatment strategy for a child on the spectrum. In general, compared to other treatment categories, medications have the most evidence supporting their use, although the bulk of research about each one has usually been for some other disorder, not autism.

Once available on the US market, medications generally follow a predictable, but often slow path, in being approved (or rejected) for use in children with an ASD. This path progresses from a small number of clinical observations with positive outcomes (often incidental), then publication of a few case studies, followed by increased off-label use of the drug, then open-label drug trials, and then ultimately undergoing the gold standard of scientific proof – the placebo-controlled, randomized controlled trial.

TARGETING THE BRAIN

Many types of medications are being used. The most common and widely accepted drugs target the brain and are intended to help manage neurological problems, such as seizures, mood disturbances, and behavioral issues. The medications used most often in autism can generally be placed in one of the following groups:¹

Antipsychotic drugs: These drugs are commonly used to treat psychotic symptoms experienced by individuals with schizophrenia, bipolar disorder, depression and other mental health disorders.

Psychotic symptoms include hallucinations (seeing or hearing things that aren't there) and delusions (irrational thoughts and fears). Some of the newer antipsychotics (known as "atypical antipsychotics")

are used to treat irritability and behavioral problems, such as aggression and self-injury, in people with autism.

The "atypical antipsychotics," named as such because they have some different side effects than typical antipsychotics, are widely used to treat children and adults with ASD. Of the newer medications, risperidone (brand name Risperdal) and aripiprazole (Abilify) are the best studied for ASD. They also are the only ones approved for use in autism by the US Food and Drug Administration (FDA), as of 2016. Primarily used for the treatment of conditions such as bipolar disorder and schizophrenia, risperidone primarily acts by blocking dopamine receptors in the brain. Dopamine receptors are involved in movement, cognition, and mood. Risperidone may also affect other chemical pathways in the brain such as serotonin (also related to behavior and mood) which is known to be abnormal in some individuals with ASD.² The FDA formally approved risperidone in October 2006, and aripiprazole in 2009, for the treatment of irritability in children and teens with autism. The main side effects associated with risperidone, aripiprazole and other atypical antipsychotic drugs are sleepiness, weight gain, movement disorders, and tremors.

Additional atypical antipsychotics used in autism: clozapine (Clozaril), olanzapine (Zyprexa), quetiapine (Seroquel), ziprasidone (Geodon). Older antipsychotics sometimes used in autism include: haloperidol (Haldol) and chlorpromazine (Thorazine).

For a complete discussion of the risks and benefits of antipsychotic medication, please see the 2016 article, [Antipsychotics and Autism: Weighing the Benefits, Eyeing the Risks](#)

Antidepressants: These drugs are used primarily to treat depressive disorders but many are also effective treatment for anxiety disorders, including Obsessive Compulsive Disorder (OCD). They are also used for smoking cessation and to treat ADHD and bedwetting. Most antidepressants work by changing the levels of specific chemicals in the brain called neurotransmitters. There are four main categories of antidepressants: monoamine oxidase (MAO) inhibitors, tricyclic antidepressants (TCAs), selective serotonin reuptake inhibitors (SSRIs) and "other agents."

The TCAs and SSRIs (such as brand names Prozac, Luvox and Celexa) have been the most studied in autism, but results have not been clearly beneficial and some of the drugs were associated with considerable side effects. Reviewers from the Cochrane Collaboration, an independent network of scientists and researchers, examined published studies of both the tricyclic and SSRI antidepressants on autism symptoms. They found no evidence that SSRIs are effective for autistic symptoms in children; the drugs should be used on a "case-by-case basis" to treat depression in autism.¹⁰ In another report, Cochrane reviewers said more research is needed before tricyclic antidepressants can be recommended for autism.¹¹

Many antidepressants are being used by people with ASD for symptoms or other conditions, such as depression, anxiety, agitation, and obsessive-compulsive behavior.

SSRIs used in autism: fluvoxamine (brand names Luvox, Faverin), fluoxetine (Prozac, Fontex, Seromex, Seronil, Sarafem), Sertraline (Zoloft, Lustral, Serlain), Paroxetine (Paxil, Seroxat, Aropax, Deroxat, Paroxat), Citalopram (Celexa, Cipramil, Emocal, Sepram, Seropram), Escitalopram (Lexapro, Cipralex, Esertia)

TCAs used in autism: clomipramine (Anafranil), desipramine (Norpramine), amitriptyline (Elavil, Endep), imipramine (Tofranil).

Other antidepressants used in autism include: venlafaxine (Effexor)

Stimulants: These drugs are primarily used to treat Attention Deficit Hyperactivity Disorder (ADHD). Many children with ASD have similar symptoms of inattention, overactivity, and impulsivity and thus stimulant medications are commonly used. These drugs are available in short-acting and long-acting formulas. How central nervous system (CNS) stimulants work is not completely understood, but the medication is thought to target the brainstem arousal system and the cortex.

Methylphenidate (Ritalin) is the most studied and most commonly used psychostimulant. Most of the published studies involving children with autism have been small sets of case-reports with mixed outcomes. However, a double-blind, placebo-controlled study conducted by the Research Units on Pediatric Psychopharmacology (RUPP) Autism Network (Posey et al., 2004) confirmed earlier findings that about half (49 percent) of children with autism responded to methylphenidate with decreased hyperactivity and inattention. This response rate is significantly lower than the response of children with a diagnosis of ADHD that do not have autism. In addition, a large percentage (18 percent) of the children with autism treated with methylphenidate experienced significant side effects that were intolerable. To sum it all up, some children with autism will benefit from the use of psychostimulants and be able to tolerate the side effects. At this point, it is not possible to identify this group of kids without trying the medication.

Other psychostimulants used in children with autism: amphetamine mixed salts (Adderall, Adderall XR), methylphenidate XR (Concerta, Metadate CD), dextroamphetamine (Dexedrine)

Mood Stabilizers: This group of drugs is mostly used to treat bipolar disorder in both children and adults. Other uses also include behavioral symptoms such as aggression, self-injury, impulsivity and conduct disorder. Many anti-seizure medications have mood-stabilizing properties as well. Only a handful of these drugs have been studied in children with autism and definitive, reproducible results are not available. Most of these medications are not commonly used for mood stabilization or behavioral symptoms in children with ASD but are occasionally tried on a case-by-case basis. Those that are effective anti-seizure medications are used for that purpose in children with ASD who also have seizures (see **Anticonvulsants**).

Mood stabilizers possibly used in autism: lithium, lamotrigine (Lamictal), valproic acid (Depakene, Depakote), carbamazepine (Tegretol), topiramate (Topamax), oxcarbazepine (Trileptal), and levetiracetam (Keppra)

Anticonvulsants: This group of drugs is used to treat seizures which occur in as many as one-third of children with an ASD. In general, the treatment of seizures in children with autism is the same as the treatment of seizures in other children. Very few studies have been conducted or reported on the effects of anticonvulsants on children with ASD. Despite the lack of specific evidence, anticonvulsants are prescribed routinely for children with ASD and seizures. The side effects for children with autism are thought to be the same as for other children receiving anticonvulsant medications.⁶

Anticonvulsants used in children with autism: phenytoin (Dilantin), clonazepam (Klonopin), carbamazepine (Tegretal), valproic acid (Depakote, Depakene)

Other: Many other medications targeting the central nervous system are being used for children with ASD. The following drugs are just a partial list of other CNS medications being used in autism.⁷

Other medications with CNS effects used in ASD: alprazolam (Xanax, Niravam), buspirone (Buspar), lorazepam (Ativan), naltrexone (Vivitrol), diazepam (Valium), melatonin, antihistamines

BUT NOT JUST THE BRAIN...

The brain is an easily agreed upon target for medications in the treatment of ASD. Other body systems are also being targeted by drug therapy although not all clinicians or care providers agree on how these additional problems relate to ASD. Is there an underlying explanation for all the problems? Do the neurological abnormalities associated with ASD result in other problems? Or perhaps, the diverse group of signs and symptoms are not related at all? For the most part, the answers remain unknown.

Researchers have been looking at gastrointestinal tract issues in autism.

Gastrointestinal agents: The gastrointestinal (GI) tract is just one of the body systems identified as problematic in children with ASDs and thus is specifically targeted by medications in some cases. Medications are generally selected based on their efficacy for a symptom like chronic diarrhea,

constipation, or acid reflux disease. The effect, if any, these drugs have on a child's overall level of functioning is unclear.

Secretin, a gastrointestinal agent produced naturally in the intestines, has been studied and disproven as a medical therapy for the treatment of autism. First reported as having a positive effect on autism-related behaviors in 1998, secretin was studied in over 14 randomized controlled trials over the ensuing 5 years. Ultimately, the scientific community concluded that there was no evidence that secretin was an effective therapy for ASD.