

Medications for Treating Symptoms of Autism Spectrum Disorder (ASD)

Many families wonder about the use of medications to treat autism and related disorders. For decades, doctors have been using many different medications 'off-label' to treat various symptoms of ASDs. In 2007, the medication risperidone (Risperdal) was given the first FDA approval for marketing a medication for autism, specifically for the control of aggression, and in 2009 aripiprazole (Abilify) was added as well.

Medication sometimes helps make it possible to use other treatments more effectively. Occasionally people have remarkable improvement, for example in social awareness. However, medication cannot make up for an inappropriate placement or poor staff training in other treatments. Also, families need to weigh the benefits of medications against side effects and work closely with the prescribing physician.

Here are examples of medications and classes of medications often used in the treatment of symptoms associated with autism spectrum disorders (alphabetical order):

Antiseizure medications, also known as Antiepileptic Drugs or AED's: Many people with ASDs have seizures, and these may need to be treated for the person to make progress in communicating, relating, and learning. With ASDs, the more challenges the person has, the higher the seizure risk. Also there seems to be an increased risk in the teenage years for seizures in persons with autism. AEDs are often useful in the treatment of persons with ASDs when there is suspicion that part of the underlying difficulty includes subclinical seizure activity that makes the person seem unfocused and at times unruly.

Often a 24 hour EEG and a neurologic evaluation are helpful in deciding whether to try these medications. Some examples of medications in this class are valproate (Depakote), carbamazepine (Tegretol), lamotrigine (Lamictal), oxycarbazine (Trileptal), topiramate (Topomax), gabapentin (Neurontin), and ethosuccimide (Zarontin). AEDs are also often useful to help persons with ASDs attain better mood stability, however there are many different kinds of AEDs, with different side effects, and some require blood tests to monitor the level and for side effects. A full discussion is not possible here, but it is important that your doctor knows and discusses with you the various options and ways these medications are prescribed.

Atamoxetine (Strattera) is a non-stimulant medication for Attention Deficit Hyperactivity Disorder (ADHD) that is a lot like a serotonin-norepinephrine reuptake inhibitor (SNRI, see below) and carries similar cautions. Studies are mixed as to whether Atamoxetine is any better than placebo for ADHD, much less for ADHD symptoms in ASDs. Some people with ASDs seem to benefit, while others have significant side effects such as agitation.

Benzodiazepine medications such as diazepam (Valium), alprazolam (Xanax), clonazepam (Klonopin), and lorazepam (Ativan) are anti-anxiety medications that target the brain in ways similar to alcohol. They interfere with learning, memory, and coordination, and they carry a high risk of addiction, not only for persons with ASDs but also for family members who might borrow them. As such their role in the safe treatment of ASDs is limited at best.

Bupropion (Wellbutrin) is an antidepressant that is dopaminergic and therefore in a class of its own. Like stimulants, it tends to help focus and concentration, reduces craving for carbohydrates (and also tobacco and alcohol), and may have a place for some persons with ASDs who have depression or who otherwise lack energy, as this class of medications is generally activating. Wellbutrin does carry an increased risk of seizures in those who are susceptible and this must be considered carefully in persons with ASDs who may be at higher risk already.

Central Alpha Agonists such as guanfacine (Tenex, Guanfacine XR, Intuniv) and clonidine (Catapres) are medicines originally marketed for high blood pressure in adults. They have a general calming effect, reducing a person's 'fight-flight' tendency. These medications may help attention, focus, anxiety, tics, and sensory sensitivity. They can also make people sleepy, dizzy, or cranky. Used with care, these medicines can be helpful and are often used in combination with other medications such as stimulants.

Memantine (Namenda) is a medication marketed to help persons with Alzheimer's Disease retain cognitive function. There are now several reports of its use in persons with ASDs with scattered reports of success in improving cognitive ability. While it appears to be fairly safe, the long term effects of use, like with many medications, particularly in developing children, is unknown.

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Naltrexone (Revia) is an opioid antagonist used in the treatment of alcohol and drug addiction, which has also been tried for persons with ASDs to help with self-injurious behaviors. While there is a lack of good research to prove that it helps, there are many reports of success attributed to naltrexone, and in particular reports of very low dose naltrexone giving a sense of well-being to persons with various neurodevelopmental and psychiatric conditions, including ASDs. Liver function should be monitored with use of this medication.

Neuroleptics (Antipsychotics): These medications have the most research about their use in persons with ASDs and are being used more and more frequently in persons with ASDs. All are FDA approved for schizophrenia and many are approved for mood stabilization and help in depression treatment as well. As noted above, risperidone (Risperdal) and aripiprazole (Abilify) are FDA approved for treating irritability in ASDs. Neuroleptics are very helpful for tic disorders, including Tourette's Syndrome, and can also occasionally create significant improvement in social function, leading many doctors to recommend them as first line treatments for ASDs. Side effects can include weight gain, insulin resistance, sedation, agitation, changes in cardiac conduction, higher risk for seizures, new abnormal movements and muscle spasms (dystonias, Tardive Dyskinesia), and rarely, a dangerous fever with muscle stiffness (Neuroleptic Malignant Syndrome). These medicines can be used safely but require good follow up and good communication between family and the physician. Members of this class include chlorpromazine (Thorazine), molindone (Moban), fluphenazine (Prolixin), thioridazine (Mellaril), haloperidol (Haldol), trifluoperazine (Stelazine), etc.; and the new: clozapine (Clozaril), risperidone (Risperdal), olanzapine (Zyprexa), quetiapine (Seroquel), ziprasidone (Geodan), and aripiprazole (Abilify). Several newer neuroleptics, asenapine (Saphris), iloperidone (Fanapt), lurasidone (Latuda), and paliperidone (Invega), have reached the market in the past few years, mainly promoted as having fewer side effects such as weight gain and sedation. However their usefulness in ASDs is less clear and we are still learning about their tendency to cause other side effects such as allergic responses with asenapine.

Oxytocin: Oxytocin is a natural hormone that is associated with improved social bonding. In typical people oxytocin can be increased when people have warm hugs from loved ones several times per day, and perhaps for persons with ASDs who can tolerate and perhaps enjoys hugs, they too may have a similar oxytocin-producing effect. If not, oxytocin can be prescribed as a nasal spray and there have been several reports and a few preliminary studies in persons with ASDs showing promise in improving social connectedness. This treatment, like most listed here, is not an FDA approved use of the medication, however since doctors are allowed to use medications for off-label purposes it is growing in use. While there have been concerns about people with ASDs becoming inappropriately attached to anyone, thus far this nor any other significant side effects have been noted.

Serotonin-Norepinephrine Reuptakes Inhibitors (SNRI): these include venlafaxine (Effexor), mirtazapine (Remeron), duloxetine (Cymbalta), and nefazadone. They are 'dual-action' antidepressants and as a class they tend to be about as effective as SSRIs for depression but often have less activation associated with them. Studies in their in ASDs are limited and as with all such off-label uses if they are prescribed they require careful follow up to watch for side effects. Cautions are similar to SSRIs (see below) with additional need to monitor blood pressure. Many people experience uncomfortable withdrawal side effects when doses are missed or when discontinuing SNRIs and so it can be very important to ensure the person does not run out of the medication and when choosing to stop the medicine it may need to be done very gradually over weeks or even months.

Serotonin Specific Reuptake Inhibitors (SSRI): These medicines are commonly used to treat depression, anxiety, and obsessive-compulsive disorder in the general population. While concerns have been raised about these and other antidepressants causing suicidal thoughts, the research is clear that the rate of suicides in the population of youth is lower when more people are being prescribed SSRIs. For persons with ASDs who are severely depressed there are many reports of significant, perhaps life, saving improvement. While SSRIs are also often tried with persons with ASDs to target anxiety, obsessiveness/perseveration, and rigid thinking, research shows that for persons with ASDs for most of these uses these medicines have little effect but instead frequently cause 'behavioral activation', i.e., they make the person more active and impulsive. Other side effects might include gradual weight gain, increased seizure risk, and in combination with other medicines (MAOIs, buspirone, etc.) can create a risk for a dangerous Serotonin Syndrome. The SSRIs include fluoxetine (Prozac), sertraline (Zoloft), paroxetine (Paxil), fluvoxamine, citalopram (Celexa), and escitalopram (Lexapro).

Steroid Treatment: Some doctors prescribe courses of steroids, usually prednisone, and usually to infants and very young children with autism or with sudden regression of development, whom they believe may have a variant of Landau-Kleffner Syndrome (LKS). LKS is a disorder typically seen in infants or very young children who have a certain type of seizures, and the steroids seem to help some of them stabilize and allow for somewhat more typical development. The treatment has potentially serious side effects which must be discussed with your doctor, although different methods of timing the steroids, such as pulsed-dosing, may help reduce side effects.

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Stimulants: This is the class of medication most used for Attention Deficit Hyperactivity Disorder (ADHD). While early studies found them ineffective in autism, more recent work and clinical experience shows that they may help with inattention and over-activity in some persons with ASDs. They may also allow for better social function due to better ability to pay attention, and perhaps fewer obsessive behaviors due to better ability to focus on tasks. Although they are generally quite safe to use, these medications nevertheless tend to have side effects that create new problems including loss of appetite, sleep disturbance, irritability or depressed mood (especially when the medicine is wearing off), increased tics, increased sensory sensitivity, increased obsessiveness/perseveration, and rigid thinking. Stimulants are a good example of a class of medication that can often be used with good effect in combination with another medicine that balances the side effects, and equally a good example of medications that are relatively safe but easy to dislike because of side effects. Names of methylphenidate type stimulants include Ritalin, Metadate, Methylin, Concerta, Focalin, and Daytrana. Dextroamphetamine type stimulants include Adderall, 'mixed amphetamine salts', and Vyvance. People treated with stimulants require cardiovascular screening and follow up (history, blood pressure, pulse) as well as monitoring of weight and growth as these can be affected (likely due to reduced appetite).

Tricyclic Antidepressants, such as clomipramine (Anafranil), imipramine, desipramine (Norpramin), nortriptyline (Pamelor), and amitriptyline (Elavil) are older medications that some people still use for depression, anxiety, inattention, and bedwetting. While clomipramine can be an excellent medication for obsessive-compulsive symptoms too, these medicines require careful cardiac monitoring, can be cardiotoxic in overdose, and must be used with caution.

This is by no means an exhaustive list as there are many other medications used in the treatment of ASDs. It is important to work closely your doctor, avoid rapid, large, or multiple changes in medication if possible, and to be sure to look at the entire range of interventions for the person rather than become focused on medication as the 'answer' to the many challenges of living with autism.

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