

ADHD—What Types of Medication Reduce ADHD Symptoms?

Helping children with attention deficit/hyperactivity disorder (ADHD) may mean they need medication. Read on for information from the American Academy of Pediatrics about medications for children with ADHD.

Types of Medication

For most children, stimulant medications are a safe and effective way to reduce ADHD symptoms. Just as glasses focus people's eyesight so they can see better, these medications help children with ADHD focus their thoughts better and ignore distractions. This makes them more able to pay attention and control their activity.

Stimulants may be used alone or together with behavioral therapy. Studies show that about 80% of children with ADHD who are treated with stimulants improve a great deal once the right medication and dose are determined.

Two forms of stimulants are available: immediate-release (short-acting) and extended-release (intermediate- and long-acting). Immediate-release medications are usually taken every 4 hours when needed. They are the least expensive of the medications. Extended-release medications are usually taken once in the morning and, in some cases, a second time in the afternoon, depending on the medication.

Children who use extended-release forms of stimulants can avoid taking medication at school or after school. It is important not to chew or crush extended-release capsules or tablets. However, extended-release capsules made up of beads and lisdexamfetamine can be opened and sprinkled onto food for children who have difficulties swallowing tablets or capsules. There are also liquid forms of the medication.

Nonstimulants can be tried when stimulant medications don't work or if they cause side effects that bother your child.

Which medication is best for my child?

It may take some time to find the best medication, dose, and dosing schedule for your child. Your child may need to try different types of stimulants or another medication. Some children respond to one type of stimulant but not another.

The amount of medication (dose) your child needs may also have to be adjusted. The dose is not based solely on their size or weight. Your child's doctor will vary the dose over time to get the best results and control possible side effects.

The medication (dosing) schedule may also be adjusted depending on the target outcome. For example, if the goal is to improve symptoms that occur mostly at school, your child may take the medication only on school days.

It is important for your child to have regular medical visits to monitor how well the medication is working and check for possible side effects.

What side effects can stimulants cause?

Side effects occur sometimes. These tend to happen early in treatment and are usually mild and short-lived, but, in rare cases, they can be prolonged or more severe.

The most common side effects include

- Decreased appetite; weight loss
- Sleep problems
- Social withdrawal

Some less common side effects include

- Rebound effect (increased activity or a bad mood as the medication wears off)
- Transient muscle movements or sounds, called *tics*
- Minor growth delay

Very rare side effects include

- Significant increase in blood pressure or heart rate
- Bizarre behaviors
- Hallucinations

The same sleep problems do not exist for atomoxetine, but initially, this medication may make your child sleepy or upset their stomach. There have been very rare cases of atomoxetine having to be stopped because it was causing liver damage. Rarely, atomoxetine increases thoughts of suicide. Extended-release guanfacine or clonidine can cause drowsiness, fatigue, or decreased blood pressure.

More than half of children who have tic disorders, such as Tourette syndrome, also have ADHD. Tourette syndrome is a familial condition associated with frequent tics and unusual vocal sounds. The effect of stimulants on tics is not predictable, although most studies indicate that stimulants are safe for children with ADHD and a tic disorder in most cases. It is also possible to use atomoxetine or guanfacine for children with ADHD and Tourette syndrome.

Most side effects can be relieved by

- Changing the medication dose
- Adjusting the medication schedule
- Using a different stimulant or trying a nonstimulant

Regular communication with your child's doctor is required until you find the best medication and dosage (dose and dosing schedule) for your child. After that, periodic monitoring by your doctor is important to maintain the best effects. To monitor the effects of the medication, your child's doctor will probably have you and your child's teacher(s) complete behavior rating scales, observe changes in your child's target outcomes, notice any side effects, and monitor your child's height, weight, pulse, and blood pressure.

Stimulants, atomoxetine, and extended-release guanfacine or clonidine may not be an option for children who take certain other medications or who have some medical conditions.

Visit [HealthyChildren.org](https://www.healthychildren.org) for more information.

Adapted from the American Academy of Pediatrics patient education booklet, *Understanding ADHD: Information for Parents About Attention-Deficit/Hyperactivity Disorder*.

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