Basics of a Child and Adolescent Psychiatric Evaluation

Professionals generally don't prescribe medication or other treatment until they understand your child's mental health challenges and have made a diagnosis. The best way to do this is with a thorough, professional evaluation of your child and discussion with your family.

A basic assessment includes a detailed history of your child, family, and environment that can take up to two hours. This assessment will provide important information that will help the practitioner in deciding what may be affecting your child. Children under 12 years old may not be good at describing their own symptoms. Therefore, parents play a critical role in describing their child's ADHD symptoms.

Your Child's Assessment May Include:

- Developmental history
- Medical/neurological history
- Family history of diagnosed or suspected mental health, learning, or substance use problems
- Current and past academic functioning
- Peer relationships
- Parent and teacher rating scales for ADHD and other symptoms
- Cognitive or neuropsychological testing

Diagnosis and Treatment Plan

Understanding how and when a child's problems occur is important. This information will be used by your child's doctor to come up with a treatment plan that works for your child. It is also important to consider a child's developmental stage, in understanding whether a behavior is normal for their age or a sign of ADHD. If ADHD is diagnosed at the age of six years or older, most research shows that medication is the most effective treatment compared to other treatments. However, for preschoolers with symptoms of ADHD, techniques (known as behavior modification) that change behavior patterns at home and school should be considered before using medication. Often, medication is used together with parent management training (a training technique to change parenting behaviors), counseling, behavior modification, and/or family therapy.

Generally, children considered for medication to treat ADHD will benefit from a thorough medical checkup before starting on medication, including a physical examination by their pediatric practitioner to ensure that: 1) the child is well; 2) an underlying medical problem is not causing the child's difficulties or making ADHD worse; and 3) no major medical problems, such as heart conditions, would complicate the use of medications.

Treatment Options in ADHD

Treatment/Intervention Options for ADHD	
Psychoeducation	• Psychoeducation helps individuals with ADHD and their families learn about the disorder and its treatments. • Being well-informed about the disorder helps parents be active decision makers in their children's treatment.
School-based accommodations	• School-based accommodations should be considered for children with ADHD who struggle to complete homework, have learning issues, have difficulty paying attention in class, and/or difficulty finishing tests. • For more information, see AACAP's Facts for Families: School Services for Children with Special Needs: Know Your Rights.
Psychotherapy	• Behavioral-based therapies are structured talk therapies that aim to help children and their parents identify and unlearn problem behaviors (for example, getting mad and yelling at others) while learning new healthier behaviors and ways to cope with stress. • Behavior management training for parents of younger children, as well as behavioral and cognitive-behavioral therapies for school-aged youth, can be effective forms of ADHD treatment. • In preschoolers, parent training is advised first, with medication reserved for those who still have significant behavior problems. • Large studies of school-aged children show that some do not require psychotherapy while others benefit from a combination of parent training and/or behavioral therapies plus medication.

Medication treatment	• ADHD medications are the most successful intervention for ADHD and are the most studied medication treatments in all of pediatrics.
	• Approximately three-quarters of children and adolescents will respond well to one or more of the medications used for ADHD; although this does not mean that every symptom will go away, improvement should be noticeable.
	• Several different categories of medication have been approved for ADHD treatment by the US Food and Drug Administration (FDA), including:
	  • Stimulants
	  • Nonstimulants
	  • Second-line nonstimulants.

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Stimulant Medications

Stimulants are the most effective and most commonly prescribed medications for ADHD. They include both amphetamine (Adderall, Vyvanse, Dexedrine, and others) and methylphenidate (Ritalin, Concerta, Focalin, and others). **(See Table 1 for full list.)** Research shows that methylphenidate and amphetamine may each work slightly differently in the brain to produce their effects. This means that one stimulant may work better than another to reduce your child's ADHD symptoms or one may have fewer side effects. For example, if your child tries Ritalin or Concerta and has disappointing results, he or she may instead respond very well to Vyvanse, Adderall XR, or Dexedrine, and vice versa.

How stimulants work in the brain. Cells in the brain use chemical messengers (neurotransmitters) to communicate with each other. Stimulant medications reduce ADHD symptoms by improving communication between brain cells. They do this by making neurotransmitters more available to boost the "signal." Stimulants affect the availability of certain neurotransmitters—dopamine and norepinephrine—that play an important role in attention.

Forms and dosing. The good news is that there are many forms (preparations) of stimulants available; however, this can make remembering the subtle differences among them more complicated. One of the biggest differences among stimulant preparations is the length of time that the stimulant works. In general, there are shorter- and longer-acting stimulants, and they all have approximately the same effectiveness **(see Table 1)**. Once a correct dose of the stimulant medication is achieved, you will probably see its effect on your child's attention and behavior within 30–60 minutes after taking the stimulant. For the shorter-acting (immediate-release) stimulants, these effects usually last about 4 hours after the medication is taken. Because this action is relatively short, often 2 or 3 doses per day are required. Many parents prefer the longer-acting (extended-release)

stimulants so that their child does not have to take a dose during the school day. Extended-release preparations usually start to work within an hour, though it takes longer for the medication to have its greatest effect. Overall, the effects of extended-release preparations last for 10–12 hours, depending on how the medication is prepared (for example, as a tablet or capsule). Often, a single dose in the morning will last the entire school day and into the evening. Sometimes, your practitioner will prescribe both a short- and a long-acting stimulant preparation to cover your child's day. A newer preparation, Jornay (delayed- and extended-release methylphenidate), allows giving one bedtime dose to cover the next day.

Establishing the correct dose. To arrive at the proper dose of your child's stimulant medication, the prescriber will start with a low dose and gradually increase it until you and the child's teachers observe a noticeable improvement in your child's ADHD symptoms, or until the dose cannot be increased anymore because of side effects that your child may be experiencing. Because amphetamines are stronger than methylphenidate, the typical doses are less. If your child is experiencing a return of ADHD symptoms during the day, many prescribers suggest switching from an immediate- to an extended-release stimulant. Often, doses higher than the minimum dose work better to improve both attention and behavior.

Drug interactions with stimulants. You should always tell your prescriber about any prescribed and over-the-counter medications and supplements that your child takes. However, there are essentially no drugs that interact with stimulant medications, which would prevent the stimulant from working. Most over-the-counter medications can be used safely alongside stimulants, although sometimes decongestants taken along with stimulants may cause jitteriness. Although certainly not encouraged, there are also no major interactions of stimulants with substances of abuse, including alcohol and marijuana.

Table 2.

Management Strategies for Stimulant-Related Side Effects	
Side Effect	**Management**
Loss of appetite (anorexia), weight loss	• Monitor weight and don't worry if your child doesn't eat as much, as long as they are on a normal growth curve. You may see an initial loss of appetite that improves over time as your child continues to take the medication (for example, after 4–6 months of taking the medication). • Give stimulant with meals. • Add calorie-enhanced snacks (for example, instant breakfast, frozen yogurt, cereal), especially in the evening. • Don't force meals.
Difficulty falling asleep (insomnia)	• Encourage good sleep habits such as waking at the same time daily, no caffeine, limiting naps to less than 45 minutes, and limiting use of electronic devices at bedtime. • Give your child stimulants earlier in the day. • Change to shorter-acting forms (for example, Concerta to Metadate CD). • Stop afternoon or evening dose. • Talk to your child's practitioner about melatonin, low-dose clonidine or guanfacine, periactin, or mirtazepine at bedtime.
Dizziness	• Do not give the next dose and talk to your child's practitioner. • Have your child's blood pressure and heart rate checked. • Have your child drink more fluids; encourage a midday snack. • Talk with your child's practitioner to consider changing to an extended-release form (Adderall XR, Ritalin LA, Concerta, Vyvanse).
More irritability or moodiness when taking medication	• Talk to your child's practitioner about further understanding when your child is getting moody. • Consider changing the preparation or type of the medication, or seeing if there is a separate mood problem.
Growth problems	• Measure your child's height and weight at least every 6 months. • Talk with your child's practitioner. You may want to discuss weekend and vacation times on lower doses or completely off medication.
Heart symptoms: heart pounding, dizziness, almost passing out, chest pain	• Stop medication and notify practitioner immediately.

Effectiveness. Approximately three-quarters of children with ADHD will experience a decrease in their symptoms after taking a stimulant. In general, one can expect a 40–50% reduction in the symptoms of ADHD, along with noticeable improvement in their performance at school and in homework completion, as well as peer and family interactions. Unfortunately, medication does not provide a child with organizational skills or overcome a learning disability.

Side effects. You can expect your child to experience some side effects while taking stimulants; the most common ones often can be managed. **Table 2** lists these side effects, along with strategies to help your child manage them. Some of the side effects are described in more detail below.

Weight and height issues. Weight loss of less than 5 pounds within the first 6 months of starting stimulants is generally not concerning. Although most research has found that stimulant treatment can slightly decrease a child's growth, it gradually stops having these minor effects after about 3 years of treatment. One way to reduce the stimulant's effects on growth is to have your child occasionally take time off from using the medication (for example, taking a break from the stimulant when on vacation). The possible benefits of time without medication must be balanced with a possible return of ADHD symptoms.

Sleep issues. If your child does not sleep well at night, stimulant medications may not work as well during the day. Good sleep practice should be tried first to improve sleep. Many youth with ADHD have sleep problems even without medication. If your child is having sleep problems caused by stimulants, changes in the medication's form, dose, and timing may improve these problems. However, if the current stimulant routine is working well otherwise, your child's prescriber may suggest adding a low dose of another medication, such as melatonin, clonidine, mirtazapine (Remeron), or imipramine, to help sleep.

Other side effects. Other side effects of stimulant medications include headaches and stomachaches. Headaches that occur soon after the morning stimulant dose often require changing the form (for example, liquid or tablet forms) or the type of stimulant if they persist. Headaches experienced later in the day may be a result of not drinking enough water and/or not eating enough food. Stomachaches are often addressed by giving stimulant medication with or after breakfast or by using antacids, as needed. Less frequent side effects include becoming unnaturally quiet (parents sometimes call this the "zombie" effect because the child seems so different) and over-focused, or repeated movements (tics or habits, such as picking the nails or skin).

One very rare risk of stimulant use is that it can worsen heart problems. Because of this risk, your child's practitioner will ask questions about your child's medical history, such as whether the child or a family member has had heart problems, dizziness, irregular heartbeats, shortness of breath, or chest pain. If any of these problems are present, further medical assessment before starting stimulants is suggested. If your child is taking any medication and develops these issues, contact your child's practitioner immediately.

One persistent myth is that stimulants may increase the risk for later substance use problems. Instead, long-term studies have found that those who have had early and long-term treatment with stimulants have *lower* risk of later cigarette or illegal substance use. However, the misuse of stimulants including selling or giving away, taking higher than recommended doses, using with substances of misuse as well as use in those without a prescription has been reported particularly in high school and college students and may happen more in students who are also using other substances. Careful monitoring of the medication, safe storage, education around stimulant misuse, along with the use of extended release stimulants may help reduce their misuse.

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Nonstimulant Medications

If your child does not respond to and/or cannot tolerate stimulants because of side effects or worsened anxiety, mood, or tics, there are a variety of

nonstimulant medications that may be considered. In some cases, your child's practitioner may decide to start with a nonstimulant because of issues such as your child's age, height, or other medical or mental health problems. In general, the nonstimulants are somewhat less effective than the stimulants; however, they tend to treat ADHD throughout the day with minimal effects on appetite or sleep **(see Table 3 for side effects)**. Sometimes a nonstimulant may be used together with a stimulant medication to improve effects and reduce side effects.

Atomoxetine (Strattera) is approved by the FDA for the treatment of ADHD in children, adolescents, and adults. It works by increasing the amount of certain neurotransmitters—norepinephrine (and dopamine)—available for cells to communicate with each other in the brain. Unlike the stimulants, atomoxetine is not a controlled substance, which makes it easier to obtain a several-month supply of medication.

Atomoxetine may be helpful in children and adolescents who do not respond to and/or cannot tolerate the side effects of stimulants. It has been studied not only in individuals who have ADHD alone, but also in those who have ADHD plus other mental health conditions. For example, children who have both ADHD and anxiety or tics may benefit from the use of atomoxetine, as it is helpful not only in treating the ADHD symptoms but also in improving the anxiety and/or tics.

Establishing the correct dose. Doses of atomoxetine should be started low and increased slowly to avoid excessive tiredness. Weight is an important factor in atomoxetine dosing. No blood monitoring of atomoxetine levels or other blood tests are necessary. Unlike stimulants where their effect is seen within hours at the right dose, it may take a few weeks at the right dose to see an effect with atomoxetine.

Drug interactions. Atomoxetine is broken down (metabolized) in the liver, and there are some possible interactions with other medicines, so you should ask your child's practitioner before starting other medications. Likewise, if your child is prescribed atomoxetine, remind the practitioner of the other medicines or supplements your child is already taking.

Viloxazine (Qelbree) is newly approved by the FDA for the treatment of ADHD in children and adolescents. It works by increasing the amount of certain chemical messengers (norepinephrine) that are available for brain cells to communicate with each other. It also alters how other chemical messengers (serotonin) work in the brain. Unlike the stimulants, viloxazine is not a controlled substance. It has been used for years in Europe for the treatment of depression in adults.

Viloxazine may be helpful for children and adolescents who do not experience improvements in ADHD symptoms after taking stimulants and/or who cannot tolerate the side effects of stimulants. It may also be useful for children and adolescents who have other co-occurring mental health issues.

Establishing the correct dose. Doses of viloxazine should be started low and increased slowly so that your child does not experience too many side effects. Your child's age (child or adolescent) will be taken into consideration by the practitioner when deciding on a dose. When taking viloxazine, no blood tests or monitoring of drug levels in the blood will be needed. Keep in mind that viloxazine may take a few weeks to have noticeable effects on your child's ADHD symptoms, unlike stimulants that have effects within hours (at the right dose).

Drug interactions. There are some possible interactions of viloxazine with other medicines, so you should ask your child's doctor before starting other medications. When having foods or drinks that contain caffeine, viloxazine may increase the levels of caffeine and, in turn, increase its effects. If your child is prescribed viloxazine, remind the practitioner about the potential for a drug interaction.

Alpha agonists. Other FDA-approved nonstimulants for ADHD include a class of medications called alpha agonists. These medications have been used not only for the treatment of ADHD but also for associated motor/vocal tics, aggression, sleep disturbances, and behavioral

dysregulation. The alpha agonists (also used in adults to decrease high blood pressure) include clonidine (Kapvay, Catapres) and guanfacine (Intuniv, Tenex). These medications may also help with sleep or tic problems.

Forms and dosing. Clonidine is a short-acting medication lasting about 6 hours in children and often requiring 3 to 4 doses daily for a positive effect. Guanfacine is longer acting than clonidine and may be given 3 times a day. A once-daily form of guanfacine (Intuniv) and a twice-daily clonidine (Kapvay) are available. Like atomoxetine, it may take a few weeks to have the best effect.

Clonidine and guanfacine have also been FDA approved to use with stimulant medications for ADHD. The combination improves symptoms of ADHD alone as well as of ADHD plus tics.

Useful Second-Line Nonstimulants

A number of the following medications are not FDA approved for the treatment of ADHD but have been shown in research studies and in clinical practice to be useful options if the stimulants or approved nonstimulant medications do not work well for your child or have too many side effects.

Bupropion (Wellbutrin, Zyban) is an antidepressant that has been shown to be effective for treating ADHD in children and adults. Given its use in reducing cigarette smoking and improving mood, bupropion may be used for adolescents or adults with complex cases of ADHD, including patients with substance use or a mood disorder. The medication is generic and available in immediate-release, sustained-release (given twice daily), and once-a-day versions (XL). Side effects include out of control behaviors, irritability, insomnia, and rarely, seizures.

Modafinil (Provigil, Sparlon), and tricyclic antidepressants are medications that are infrequently used in ADHD. If your child is using these medications, they should be monitored for rash (when on modafinil) or have their blood levels/electrocardiogram monitored (when on tricyclics).

Combination treatments. It is not uncommon for a child's practitioner to eventually prescribe a combination of medications, such as stimulants with alpha agonists like guanfacine or clonidine, atomoxetine, or other classes of medication. Other than combining stimulants and alpha agonists (see *Alpha agonists* section above), combining other medications is not FDA approved and there are not many studies on this approach to treating ADHD. However, your child's prescriber might still recommend careful use of more than one medication at a time because it may further improve ADHD symptoms, treat other mental health disorders that your child may have, and better manage side effects. For co-occurring disorders, practitioners typically treat the more severe disorder first.

In summary, ADHD is a diagnosable and very treatable disorder. After receiving a comprehensive assessment, you can work with your practitioner to identify the best treatment plan and medication(s) for your child. By addressing and treating ADHD, your child will not only do better over the long term academically, but also with friends and family.

Table 3.

Management Strategies for Nonstimulant-Related Side Effects	
Atomoxetine (Strattera)	
Side Effects	**Management**
Excessive tiredness **Insomnia** **Stomachaches, Nausea** **Headaches** **Nausea** **Irritability or aggression (infrequent)** **Liver problems such as hepatitis (very rare)** **Suicidal thoughts (rare)**	• Excessive tiredness is experienced especially when treatment is first started, and usually gets better. • Doses should be started low and increased slowly. • To minimize side effects, some children do better when the daily dose is divided into two doses.
Viloxazine (Qelbree)	
Side Effects	**Management**
Excessive tiredness **Decreased appetite** **Nausea/vomiting** **Insomnia** **Irritability** **Suicidal behavior (rare)**	• Excessive tiredness may be experienced when treatment is first started, and usually gets better. • Doses should be started low and increased slowly. • Consider food supplements for decreased appetite.
Alpha agonists (clonidine and guanfacine)	
Side Effects	**Management**
Drowsiness (most common) **Mood symptoms** **Slowing of heart rate** **Dizziness**	• Drowsiness tends to improve with time and can be minimized by starting these medications at very low doses until the drowsiness improves. • If relatively higher doses are stopped abruptly, your child's blood pressure may increase for a short time. • These medications should not have skipped doses and, when stopping treatment, the dose should be slowly decreased over time.

FAQs: Medication Use in Children and Adolescents with ADHD

I have been told that my child may have ADHD. What are the next steps?

Parents of children who might have ADHD should discuss their concerns with their child's primary care practitioner, primary teacher, developmental pediatrician, and/or mental health specialist, such as a child and adolescent psychiatrist or psychologist, and seek guidance in obtaining a comprehensive evaluation.

Who can treat children and adolescents with ADHD?

Children and adolescents with ADHD can benefit from careful medication management by a child and adolescent psychiatrist, pediatrician, child neurologist, or advanced practice nurse with experience in treating ADHD. Children and families may benefit from psychotherapy for behavioral, emotional, and academic issues, which can be conducted by a licensed mental health practitioner.

What do I do if my child doesn't think anything is wrong?

Many children and adolescents with ADHD do not think they have a problem that requires treatment. Adolescents may have some insight into their problems but may not believe that they need medication. Some children or adolescents blame others for their problems. For those who deny that they have a problem, a frank, non-accusatory discussion about the difficulties your child is experiencing may help. You may also turn to online sources of information such as the CHADD or AACAP websites (see *Resources* section on page 17).

What if my child refuses to take medication?

Some children and adolescents can't explain why they refuse to take medication. You can explore what they think might happen if they take medicine. Some kids fear that medication may change their brains, while others think that taking medicine means that there is something wrong with them, and still others may resent taking something that may control or change them. For those who are taking medication, ask them about any side effects (including a belief that they are not as social or as much fun to be with) and work with the child's prescriber to minimize side effects.

I am afraid of using medications for my child.

Many parents would rather not use medication to treat their child's ADHD or any other mental health problem. It is important to note the problems associated with *leaving ADHD untreated into adulthood:* more academic, work-related and social problems, as well as higher risks for injuries, concussions, depression, suicidality, criminality, nicotine and substance use disorders compared to those treated for their ADHD. It is important to recognize that along with educational planning and accommodations, medications for children and adolescents with ADHD are well-studied, effective, and safe. There are no unexpected long-term side effects of stimulants that one does not see in the short term. For example, a lowered appetite seen soon after beginning stimulants may continue longer term. With careful coordination with your child's provider, most side effects can be managed with little to no long-term problems related to the medication.

What if my child with ADHD also has motor tics?

About one-third of children with ADHD will have spasm-like movements in the face, mouth, or upper body. Changes in tics may occur naturally, or may be related to medication for ADHD (sometimes causes increases or decreases in tics). Close monitoring of your child for a couple of weeks after a change in dose or introduction of a new medication is advised.

Are there differences between generic and brand name medications?

Brand name medications are the types of medications that are approved by the FDA and have been tested in research. These medications are made in a very consistent way and are generally preferred by patients because they work well and do not have serious side effects. Also available at pharmacies are generic medications, which are similar to brand name medications in several important ways. For example, they enter the bloodstream almost as much as the brand medication (at least 80% as much), and are effective, well tolerated, and less expensive. But, some generic medications are not as good as the brand name medication that they are copying. This has to do with differences in the way that the medication is released from the form it comes in (for example, a tablet or a capsule form) and how much the tablets are affected by different conditions such as humidity and light, as well as differences in side effects. Unfortunately, many pharmacies frequently switch among generic products so that you may be receiving a different generic preparation with each prescription. Some may be better than others.

Resources

- American Academy of Child and Adolescent Psychiatry ADHD Resource Center: https://www.aacap.org/AACAP/Families_and_Youth/Resource_Centers/ADHD_Resource_Center/Home.aspx
- The American Professional Society of ADHD and Related Disorders (APSARD): https://apsard.org
- Attention Deficit Disorder Association (ADDA): https://add.org
- Centers for Disease Control and Prevention (CDC) ADHD: https://www.cdc.gov/ncbddd/adhd/index.html
- Children and Adults with Attention-Deficit/Hyperactivity Disorder (CHADD): https://chadd.org. In Spanish: https://chadd.org/adhd-weekly/spanish-resources-now-available-at-the-nrc/
- CHADD's *Attention* Magazine: https://chadd.org/get-attention-magazine
- National Institute of Mental Health (NIMH) ADHD: https://www.nimh.nih.gov/health/publications/attention-deficit-hyperactivity-disorder-adhd-the-basics/index.shtml
- Barkley R. *Taking Charge of ADHD, Third Edition: The Complete, Authoritative Guide for Parents*, Guilford Press, 2013.
- Wilens TE, Hammerness PG. *Straight Talk about Psychiatric Medications for Kids*, 4th edition, Guilford Press, 2016.