ADHD

Parents Medication Guide

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Attention-Deficit/Hyperactivity Disorder

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Introduction

Attention-Deficit/Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder characterized by difficulty paying attention, excessive activity, and impulsivity (acting before you think). ADHD is usually identified when children are in grade school but can be diagnosed at any time from preschool to adulthood. Recent studies indicate that almost 10 percent of children between the ages of 4 to 17 are reported by their parents as being diagnosed with ADHD. So in a classroom of 30 children, two to three children may have ADHD.[1,2,3,4,5]

Short attention spans and high levels of activity are a normal part of childhood. For children with ADHD, these behaviors are excessive, inappropriate for their age, and interfere with daily functioning at home, school, and with peers. Some children with ADHD only have problems with attention; other children only have issues with hyperactivity and impulsivity; most children with ADHD have problems with all three. As they grow into adolescence and young adulthood, children with ADHD may become less hyperactive yet continue to have significant problems with distraction, disorganization, and poor impulse control.

ADHD can interfere with a child's ability to perform in school, do homework, follow rules, and develop and maintain peer relationships. When children become adolescents, ADHD can increase their risk of dropping out of school or having disciplinary problems. Adolescents with ADHD may also experience an increased risk of driving violations and accidents, are more likely to smoke cigarettes and abuse drugs, have problems with employment, and experience other mental health problems in addition to ADHD.

Early identification of ADHD is advisable—children are most often identified in elementary school. Effective behavioral and medication treatments are available to help manage the symptoms of ADHD. These treatments can improve functioning at home, school, and in social situations. Before treatment begins, each child should have a comprehensive assessment to make the diagnosis and plan for treatment.

This medication guide is intended to help youngsters with ADHD and their families to better understand the treatments for ADHD.

Causes, Symptoms & Choosing Treatment

What is ADHD?

ADHD is a condition with symptoms that include excessive restlessness, poor attention, and impulsive acts. There are three major presentations of ADHD: *predominantly inattentive*, in which children and adolescents have problems concentrating and focusing; *predominantly hyperactive-impulsive*, in which children and adolescents experience impulsivity and excess activity; and *combined type*, in which children and adolescents experience symptoms of inattention, hyperactivity, and impulsivity.

What causes ADHD?

Research has not found a single cause for ADHD, but has proven that it runs in families and is likely due to many genes and their interaction with the environment.[6,7,8,9] The rate at which the disorder is inherited, about 75 percent, is similar to the rate at which children's height is inherited. Scientists are currently looking for the genes and environmental factors that may lead to the development of ADHD.

Potential Consequences when ADHD is Left Untreated

- Increased risk for school failure and dropout in both high school and college
- Behavior and discipline problems
- Social difficulties and family strife
- Accidental injury
- Alcohol and drug abuse
- Depression, anxiety and other mental health disorders
- Employment problems
- Driving accidents
- Unplanned pregnancy and sexually transmitted diseases
- Delinquency, criminality, and arrest

Substances in the environment and other factors have been identified that may contribute to the development of ADHD. These include low birth weight; exposure to cigarette smoke, alcohol, herbicides, or pesticides as a fetus in the womb; and exposure to toxic substances in the environment such as lead from old paint after birth.[7,8,10,11,12] Environmental factors require further research to establish their role in the development of ADHD.

How can I find out if my child has ADHD?

There is no laboratory test that can detect ADHD with certainty. Clinicians such as pediatricians, child and adolescent psychiatrists, and other allied professionals will decide on the diagnosis based on interviews with you and your child, and feedback from your child's school about his or her ability to pay attention, level of activity, and impulsivity. This is done by evaluating your child's overall development, family and peer relationships, and medical history for information that might indicate other problems besides ADHD that could also explain the symptoms. Clinicians will also work to detect a pattern of social interactions in several different settings, and finally, to determine degree of frustration tolerance, and related factors. For more information about the criteria for the current diagnosis of ADHD, click here.

ADHD Symptom Manifestations in Adolescents and Adults

ADHD inattention symptoms can be manifest many ways in young adults. These include:[13]

- Poor time management skills
- Avoiding tasks demanding attention
- Putting off tasks and activities (procrastination)
- Excessive multitasking leading to tasks being incomplete
- Problems with starting or completing tasks, or failure to switch tasks when indicated
- Needing to adapt a lifestyle to fit the limitations and assets of a short attention span
- Needing support staff or external structure for functioning

ADHD hyperactivity symptoms can be manifest many ways in young adults. These include:

- Experiencing a constant inner sense of restlessness
- Selecting a job or jobs that require working long hours, high levels of activity, or multiple tasks
- Avoiding jobs that require sedentary or low level activity
- Family tension resulting from constant activity

ADHD symptoms of impulsiveness can be manifest many ways in young adults. These include:

- Becoming easily frustrated
- Changing one's personal relationships or jobs frequently
- Difficulties with automobile driving leading to multiple traffic infractions or accidents
- Easily losing one's temper
- Making hasty decisions
- Having low tolerance for stress
- Interrupting conversations, speaking out without thinking of the consequences

Research is ongoing to better understand the ways in which ADHD affects brain function and how to best treat the condition. Other research is looking at the long-term outcomes for people with ADHD, particularly regarding grade completion, social relationships, and success in the workplace. The more we learn about ADHD and its treatment and the more information we share with youth, the better the care and outcome of treatment that can be expected.

When can ADHD be diagnosed?

Most cases of ADHD are diagnosed when the child is 7 or 8 years old, but ADHD symptoms and impairment can be apparent as early as age 3-5, when the child is in preschool or kindergarten. Girls are often identified later than boys. Bright children may not be diagnosed until later as they may compensate for their difficulties until school work gets more challenging. ADHD symptoms must be present for at least six months before a child can be diagnosed with ADHD, and symptoms should be present before age 12. For more information on ADHD changes, click here.

Why are more boys than girls diagnosed with ADHD?

Boys diagnosed with ADHD outnumber girls a little over two-to-one.[1,4] Some doctors think that almost as many girls have ADHD as boys,[4] but they are not diagnosed as often, possibly because they are less

disruptive and their symptoms may not become unmanageable until they are older.[13] Girls may also develop the symptoms of ADHD at a later age than boys.[3,5,13] Girls sometimes show symptoms of their ADHD in less obvious ways, such as being inattentive. Now that more health care professionals are aware of the unique ways ADHD affects girls and boys, more girls are being diagnosed[13] and receiving treatment.

Why are more children being diagnosed with ADHD?

Research indicates that the increase in children diagnosed with ADHD is largely due to greater awareness and improved detection of the condition—including diagnosis of children who may have less severe forms of ADHD. Now that more people know about ADHD and its symptoms, children as young as age 4, and more adolescents, girls, and adults with this condition are being identified and treated.[5,8,13]

Despite the rise in ADHD diagnoses, research studies show that ADHD can still be missed and that many children with ADHD are not diagnosed.[5]

How does ADHD affect my child's ability to form friendships?

Parents can help foster good friendships for their children by letting teachers, school counselors, and coaches know about problems that might develop, arranging one-on-one play dates, and encouraging their children with ADHD to participate in school activities and peer-group programs. Medicine for ADHD can improve the way that children with ADHD relate to others.

What are some of the more common disorders that can accompany ADHD?

Two-thirds or more of children diagnosed with ADHD have at least one additional mental health or learning disorder during their lifetimes.[7,8,13]

To ensure a complete and accurate diagnosis, your child's doctor will look for other conditions that can accompany ADHD. Having more than one condition is called having co-existing (or comorbid) conditions.

Co-existing conditions can make diagnosing and treating ADHD more difficult. They also create more challenges for a child to overcome, so it is important to identify and treat these other conditions, too.[7,8,13,14,15,16] Some of the more common co-existing conditions with ADHD are oppositional defiant disorder, learning and language disorders, anxiety disorders, Tourette's disorder, and depressive disorders.

Studies indicate that half or more of children with ADHD also have oppositional defiant or conduct disorder.[9,17] Children with oppositional defiant disorder are often defiant toward authority--parents or teachers--and have a tendency to intentionally bother others, particularly other children or family members.

Some children with ADHD have a conduct disorder. This is a serious psychiatric disorder in which the child regularly violates the rights of others by stealing, being physically aggressive, or destroying property. Children with a co-existing conduct disorder are at much higher risk for getting into trouble

with the law or developing depression, becoming suicidal, and abusing substances than children with ADHD alone. The long-term outcome of the combination of ADHD and conduct disorder is poor.[14] Your child's doctor may recommend counseling or therapy if your child has either oppositional defiant disorder or conduct disorder.

Twenty to twenty-five percent of children with ADHD have a co-existing language or learning disorder.[17] Children with these co-existing conditions can often benefit from academic interventions and speech and language therapy.

Additionally, 33 percent of children with ADHD also have a problem with anxiety or depressive disorders.[8,9] Children with these problems may benefit from additional treatment as well, including talk therapy, medication, or both.

Among the more serious co-existing conditions that can occur with ADHD are mood disorders that include such symptoms as severe mood instability and agitation, elated mood, a sense of superiority, racing thoughts and speech, and less need for sleep. Many of these children seem highly irritable, overly sensitive, and reactive. They are often described as being on "an emotional roller coaster."

Only a health care professional trained to evaluate, diagnose and treat children with ADHD can determine whether your child's behaviors are caused by ADHD, another condition, or co-existing disorders. A thorough assessment and an accurate diagnosis are essential to choosing the right treatments, including deciding which medication might benefit your child the most and which medication might make certain disorders worse.

What types of treatments are effective?

To help families make important decisions about treatment, the National Institute of Mental Health (NIMH) began a large treatment study in 1992 called the Multi-modal Treatment Study of Children with ADHD (or the MTA study). Data from this 14-month study showed that stimulant medication is most effective in treating the symptoms of ADHD, as long as it is administered in doses adjusted for each child to give the best response – either alone or in combination with behavioral therapy. This is especially true when the medication dosage is regularly monitored and adjusted for each child.

The MTA study, along with many other large-scale treatment studies that have assessed the safety and effectiveness of ADHD medications, provides evidence that stimulant medication reduces hyperactivity and impulsivity, improves attention, and increases the ability to get along with others. For this reason, stimulant medications remain the medications of first choice for treating individuals with ADHD.

While medicine alone is a proven treatment for ADHD, the MTA study found that combining behavioral treatment with medicine was useful in helping families, teachers, and children learn ways to manage and modify the behaviors that cause problems at home and at school. In addition, some children receiving the combination of medication and behavioral therapy were able to take lower doses of medicine.

Behavioral treatments in the MTA study included three approaches:

- **Parent Training**: Helped parents learn about ADHD and ways to manage ADHD behaviors. This approach included techniques by which the parents can have positive interactions with their child while becoming more effective at getting their children to meet expectations for behavior.
- **Child-Focused Treatment**: Helped children and teens with ADHD learn to develop social, academic, and problem-solving skills in a summer treatment program, later expanded to home and school settings.
- **School-Based Interventions**: Helped teachers meet children's educational needs by helping them to learn the skills to manage children's ADHD behaviors in the classroom (such as rewards, consequences, classroom seating, and daily report cards sent to parents). Click here for more information about the daily report cards as a useful tool.

According to findings from the MTA study, children with ADHD who had other mental-health conditions such as depression and anxiety were especially helped by combined therapy that included behavioral modification as part of their treatment plan. Children with ADHD often have other developmental and learning disorders that respond to other types of treatment.

For more information about the MTA study, click here.

Will medication cure my child?

Medication doesn't cure ADHD but can be a highly effective way to treat the symptoms of ADHD when it is taken as prescribed. It is important to note that none of the treatments for ADHD will cure the condition and so ongoing care and treatment monitoring are important. The type or extent of treatment is likely to change over time as children mature and must cope with differing demands placed on them as they grow up.

Though not a cure, medication treatment does allow the child, adolescent, or adult to better function and manage their ADHD and to benefit from academic and related interventions intended to improve their overall functioning in school, at home, at work, and in the community. A percentage of children may no longer require treatment as they grow into late adolescence and adulthood.[18]

Choices in Medication

What types of medication are available?

Some of the prescription medications for ADHD have been approved by the Food and Drug Administration (FDA) for use in children with ADHD. These medications are listed in the FDA-Approved ADHD Medication Table on page 9. Other medications are sometimes used "off-label." The FDA defines off-label as "not having been studied adequately" in a particular population (for example, children and adolescents with ADHD) to provide appropriate labeling information. The FDA notes that 50 to 75

percent of marketed medications to treat any condition in the pediatric population have not been adequately studied in kids and are consequently designated as "off-label".[19] It is important to understand that even though a medication is not approved for children, it doesn't mean that it cannot be helpful. It actually means that pharmaceutical companies are only allowed to advertise or promote a medication to treat the specific disorder and the specific group for which it has been FDA-approved.

There are many scientific studies of medicines that are documented to be effective in children but have not been approved by the FDA for a specific indication – this is certainly true for the treatment of ADHD in children with tic disorders. Historically, stimulants have been thought to either cause tics to begin or worsen, which led to warnings in the product information suggesting that children with ADHD and tics as well as children with a family history of tics should not be treated with a stimulant medication. However, in randomized controlled trials, tics did not appear to worsen at any greater rate on stimulants than on placebo or clonidine (a non-stimulant medication that is often prescribed to treat tics and Tourette's disorder).[20] This finding was also identified in other randomized controlled studies.[21] Whether tics begin once stimulant medication is initiated is more difficult to study. It is important to understand that ADHD often precedes the onset of tics by as much as one to two years in children with Tourette's disorder, so it is possible for a child to be treated for ADHD with stimulants and for tics to develop as part of the natural course of a tic disorder and not necessarily to be caused by the stimulant medication.

You are encouraged to ask questions of your physicians and to share any concerns that you may have when "off-label" medications are recommended. To learn more about this, click here.

Until 2002, the only FDA-approved medications for ADHD were those classified as stimulant medications. Stimulant medications such as methylphenidate and the amphetamines are highly effective treatments for ADHD, have been available for decades, and are very well studied. Evidence shows that these stimulants are quite safe when prescribed to healthy children and used under medical supervision.[21] These medicines come in a variety of preparations (see *FDA-Approved ADHD Medication Table* on page 9).

Some parents prefer another class of medications referred to as non-stimulants because of the side effects associated with taking stimulant medications. These medications may be good alternatives for children who do not respond well to stimulant medication, cannot tolerate the side effects of stimulant medications, or have other conditions along with ADHD.

The FDA has approved three non-stimulant medications for use in children and adolescents with ADHD. These are atomoxetine (Strattera) and two medications that were originally developed to treat high blood pressure – extended release guanfacine (Intuniv) and extended release clonidine (Kapvay). While these non-stimulants have demonstrated sufficient evidence of their ability to reduce the symptoms of ADHD and to be safe as approved by the FDA, they are generally recommended after stimulant medications are tried and fail to help. Additionally, extended release guanfacine (Intuniv) and extended release clonidine (Kapvay) are approved to be added to stimulant treatment when the stimulant doesn't fully reduce the ADHD symptoms. Though not FDA-approved for combined treatment, atomoxetine (Strattera) is sometimes used in conjunction with stimulants as an off-label combination therapy. These medications may be used initially or as alternatives for children who do not respond well to stimulant medication.[21]

FDA-Approved ADHD Medication Table

Stimulants		
Class	**Trade Name**	**Generic Name**
Amphetamines	Adderall	mixed amphetamine salts
	Adderall XR	extended release mixed amphetamine salts
	Dexedrine	dextroamphetamine
	Dexedrine Spansule	dextroamphetamine
	Vyvanse	Lisdexamfetamine (extended release)
Methylphenidate	Concerta	methylphenidate
	Daytrana	methylphenidate (patch)
	Focalin	dexmethylphenidate
	Focalin XR	extended release dexmethylphenidate
	Metadate ER	extended release methylphenidate
	Metadate CD	extended release methylphenidate
	Methylin	methylphenidate hydrochloride (liquid & chewable tablets)
	Quillivant XR	extended release methylphenidate (liquid)
	Ritalin	methylphenidate
	Ritalin LA	extended release methylphenidate
	Ritalin SR	extended release methylphenidate
Non-stimulants		
Class	**Trade Name**	**Generic Name**
Norepinephrine Uptake Inhibitor	Strattera	Atomoxetine
Alpha Adrenergic Agents	Intuniv	extended release guanfacine
	Kapvay	extended release clonidine

The FDA directed pharmaceutical companies to develop medication guides for each of these medications. These guides can be accessed here.

Over time, this list will grow. Researchers are continuing to develop new medications for ADHD.

How do I decide which medication is best for my child?

Deciding which ADHD medication is right for your child takes time, because doctors may have to try more than one medicine to find the one that works the best for your child. Some ADHD medications might not be right for your child because they may produce less desirable (negative or adverse) effects, along with the reduction of ADHD symptoms. Some children may experience negative side effects such as decreased appetite, delay in falling sleep or excessive sleepiness, stomach ache or upset stomach, or social withdrawal. While different, both stimulant and non-stimulant medications have side effects. Parent and teacher monitoring of positive and negative effects will increase the chances of learning about which medications are best for a child, at what dose, and whether medications should be used alone or in combination with one another.

A medication's side effects usually can be managed by reducing the dose, changing the type of medicine (immediate-acting tablet as opposed to long-acting capsule), altering the time it is administered, or switching to another medication.

When there is a risk for stimulant medication being diverted for abuse by someone other than the patient diagnosed with ADHD, (for example to friends, other students, or even parents), other considerations include the use of non-stimulant medication or, if stimulant medication is necessary, to the long-acting or extended release forms that are less easily abused and diverted; they are listed in the FDA-Approved ADHD Medication Table.

When is an off-label medication used to treat ADHD?

If medications approved for the treatment of ADHD in youth are not effective or appropriate for your child, the doctor may try other FDA-approved medications that may be helpful but have not been specifically approved for treating ADHD in children or adolescents. These medications include bupropion (Wellbutrin), modafinil (Provigil or Nuvigil), and tricyclic antidepressants such as desipramine (Norpramin), and imipramine (Tofranil).[16] Likewise, some children with ADHD may need more than one medication to control ADHD symptoms.[22]

Parent and Teacher Monitoring of Drug Therapy

While working with their child's physician, families can expect to participate in a number of data collecting and information-gathering activities. For instance, they may need to complete a patient history, consent for medication, and other forms to provide a baseline for monitoring their child's response to medication and potential side effects. Medication information sheets can serve to alert parents to other factors in drug treatment.

Physicians often use checklists and rating scales to evaluate children before, during, and after the office visit. These forms provide an opportunity for teachers and parents to describe the severity of ADHD symptoms and behavior as well as medication side effects.

Parents complete the rating scales to help their child's doctor determine the correct medication and dosage and to monitor how well their child is doing. During long-term medication management, these

scales allow the doctor to monitor the child's symptoms, functioning, and side effects over time. Accurate reporting of how regularly the medication is taken as prescribed is essential to manage treatment at the lowest effective doses.

Similarly, teachers complete checklists to provide the family and physician with regular information on the child's school performance in the classroom and behavior among school peers. Together, parent and teacher reports enable doctors to better adjust medication dosage or switch medications when needed.

Finding the correct ADHD medication and dose for a child takes time. If your child's symptoms are not better after being on a full therapeutic dose of a particular ADHD medication for a period considered appropriate, the prescribing doctor may try another medication or adjust the dose. Response to treatment with stimulant medications is quickly evident at a particular dose but non-stimulants may take up to six weeks to work.

Are the generic versions of the ADHD medications safe and effective?

Generic drugs have the same active ingredients as the brand name drug but differ in the inactive or filler portion of the medications. To be FDA-approved, generic drugs must show that they work similarly as the brand name, be identical in dosage forms and strength, have the same approved use, and meet manufacturing regulations for purity, quality and strength. However, subtle differences in the delivery and absorption of the active or therapeutic ingredients, inactive ingredients that influence taste and texture, preservatives, and other features may result in different responses between brand and generic medications. Moreover, generics vary in strength based on the manufacturer. This can result in variability amongst the generic preparations and may affect response to the medication. Check the FDA website for information on variations in generic medications.

Costs of medications, both brand name and generics, vary greatly depending on insurance coverage and pharmacies. To avoid medication that is too expensive, families should discuss medication costs with the prescribing doctor.

Two recent related developments that may raise concern among treatment professionals and those seeking treatment for their children with ADHD are direct-to-consumer advertising or sales of medications, particularly medications that are counterfeit or mislabeled as brand name drugs. The other is the shortage of certain brand and generic medications, including stimulants. According to the FDA, these counterfeit medications are often likely to bear the name of the medications that are currently in shortage. Medications should only be purchased from trusted pharmacies and if shortages occur, families should discuss options with their pharmacist and prescribing doctor. One warning from the FDA about a counterfeit version of Adderall from May 2012 is available here. The FDA also has a guide for purchasing medications safely over the Internet.

Shortages of Stimulant Medications

In recent years, serious shortages of stimulant medications have been observed in the U.S. This situation can make it difficult for families to obtain their child's medicine or make the medicine

unaffordable if only the brand name version is available. Shortages may be a result of limits imposed by the U.S. Drug Enforcement Administration (DEA) on how much stimulant medication can be made per month by each stimulant manufacturer. The DEA does this to prevent excess stimulant medicine from being diverted from ADHD treatment to recreational use. Also, drug shortages occur when an FDA inspection stops production at a manufacturing plant if a particular drug batch fails to meet quality standards. In some instances, plant facilities may be too small to meet the current demand for stimulant medicines. Shortages in generic medication also can occur if a single manufacturer produces both the more expensive brand medication and its less expensive generic version. If the ingredients needed to manufacture a particular medication are limited by the DEA, the company may decide to produce more of the brand name version. This situation can result in a shortage of the generic version and thus leave families unable to afford the medication. If you have trouble getting your child's medicine because of shortages, contact his or her doctor to discuss other options.

Taking ADHD Medication

How is ADHD medication taken?

Stimulant Medications: In addition to immediate-release tablets, stimulant medication comes in extended release (ER) and sustained release (SR) preparations. While short-acting stimulants require dosing two to three times daily, long-acting stimulants can be taken once a day in the morning. Sometimes doctors will prescribe a combination of long-acting and short-acting stimulant medication, but this approach has not been systematically studied.

For those children who have difficulty swallowing pills, several options are available: a patch applied to the skin, liquid medications, chewable pills, and capsules that can be opened and sprinkled on food. The Food and Drug Administration has approved a long-duration liquid stimulant medication (methylphenidate) which is suitable for children who are unable to swallow pills or capsules. If you are interested in learning more about which medications have been approved, click here.

Most doctors start children at a low dosage of stimulant medication and increase the amount at regular intervals until the ADHD symptoms are under control. It can take several weeks to find the best medication and optimal dose for your child. Studies indicate that over three-quarters of children will

respond to such adjustments when a second type of stimulant medication is used if the first one is not satisfactory.[16,22]

Non-stimulant Medications: The non-stimulant FDA-approved medications, including atomoxetine (Strattera), guanfacine (Intuniv), and clonidine (Kapvay) are usually taken as a single daily dose in the morning or evening, or as divided doses, one in the morning and one in late afternoon or early evening. However, long-acting clonidine is approved as a twice daily medication which starts once a day with a night time dose.

Other non-stimulant medications sometimes used for the treatment of ADHD, such as tricyclic antidepressants, modafanil/armodafanil (Provigil/Nuvigil), and bupropion (Wellbutrin), are dosed differently.

As with stimulant medications, most doctors start by prescribing a lower dose initially and then gradually increase the dosage as the child adjusts to the medication. It can take several weeks to build up to the correct dosage and several additional weeks to see the full effects of a non-stimulant medication.

Can over-the-counter or prescription medications interfere with ADHD medication?
Yes, some over-the-counter and prescription medications can interfere with your child's ADHD medications or cause negative side effects when used in combination with medications prescribed to treat the symptoms of ADHD. For example, a medication to treat asthma, albuterol, can increase your child's restlessness and cause sadness and other side effects if given with a stimulant. Therefore, it is important to tell your child's doctor about all of the over-the-counter (OTC) and prescription medications, herbal supplements, decongestants, products containing caffeine, and vitamins your child is taking. Additionally, it is important to speak to your child's doctor before he or she takes a new medication or supplement.

How do I know the medication is working?
If the dose of stimulant medication is adjusted for best effect, parents and teachers will see beneficial effects within 30 to 90 minutes—depending on the dose and formulation used. The results can be quite dramatic in children with hyperactivity and impulsivity but less obvious in children with attention problems. With a non-stimulant, it often takes a couple of weeks before the full therapeutic effects unfold.

When ADHD medication is working, many of the ADHD symptoms will lessen in severity. It is not uncommon, though, for some symptoms to linger. Behavioral therapy may help with many remaining symptoms. Some patients take two ADHD medications simultaneously to achieve the best reduction in symptoms, although information on this practice is largely based on individual case experience and not from rigorous controlled studies, except for extended release guanfacine (Intuniv) and clonidine (Kapvay).[23]

Are there times when my child can take a break from medication?

Doctors have often recommended or agreed to parent requests that children take a break from their ADHD stimulant medication on weekends, holidays, and during the summer. However, depending on the severity or type of the ADHD and/or tolerability of adverse effects, many doctors recommend that children stay on their ADHD medication full-time without such breaks. ADHD medication can help children outside of school to complete their homework, participate in extracurricular activities, pay attention while driving,[24,25] and possibly to help teens resist engaging in cigarette smoking, substance use, and risky behavior.[26] However, some breaks from stimulant medication or a reduction in medication dosage may be considered for less demanding times or if your child has troublesome side effects.

If your child mainly has problems with inattention and focusing rather than impulsivity and hyperactivity, it may not be necessary to continue stimulant medications over weekends, holidays, and vacations. However, a discussion with your child and the prescribing physician is strongly recommended before stopping medications in order to review the demands of social situations, work, and safe driving.

Taking a break from non-stimulants is not as easy as from the stimulant medications. Non-stimulants often need to be taken daily for a period of time before benefit can be achieved; missing doses may undermine benefits and may also result in withdrawal effects.

Testing whether the medication helps the child's ADHD symptoms is best done when school is in session. Evaluating the efficacy of stimulant medication at home may be difficult as it can be a challenge to replicate the need for sustained attention found in the school environment.

Will ADHD medication change my child's personality?

When prescribed properly, stimulants and other ADHD medications do help most children to become better able to focus and concentrate and to reduce hyperactivity and impulsivity, but they do not change a child's personality. Children may not always agree with reports from their parents or teachers about their behavior or their personality while on medication. The ability to report changes in their internal feelings tends to increase with development. Thus, children in 2nd or 3rd grade may report no changes in how they feel even though they are much improved.

Adolescents and older children, similarly improved, may notice that they can concentrate more in class and might be less bored or restless. However, adolescents also may perceive that medication makes them less appealing, lively, or friendly to their peers. Despite the noticeable positive effects of their medication, they may refuse to take it because they worry their peers will reject them.

On the other hand, if you notice a personality change (such as a lack of emotional response) or if your child is continually irritable while taking medication, the dose of medication may be too high for them, and it is recommended that you talk with your child's doctor about changing the dose.

When can my child stop taking ADHD medication?

Many children diagnosed with ADHD will continue to have problems with one or more symptoms of this condition later in life. In these cases, ADHD medication can be required for longer periods of time. However, as a child matures, the healthcare provider may periodically reduce the dose and monitor symptoms to see if the medication can be reduced or discontinued. Standardized parent and teacher rating scales provide an effective means of communication with the physician and are especially useful to identify whether symptoms return or not when medication is lowered or discontinued.[16]

Some signs that your child may need a reduction or elimination of their ADHD medication include the following: (1) Your child has been symptom-free for more than a year while on medication; (2) Your child is doing better and better, but the dosage has stayed the same; (3) Your child's behavior is appropriate despite missing a dose or two; or (4) Your child has developed a newfound ability to concentrate.[16] If these changes occur, it is time to speak to your child's doctor about re-evaluating his or her medication dose.

As children grow into adolescence, many factors may lead them to demand a stop to their medication. The choice to stop taking ADHD medication should be discussed with the prescribing doctor, teachers, family members, and your child. It is important to ask your child's doctor to discuss with him or her risks that face adolescents with ADHD. Sometimes all can agree to a trial off medication with specified conditions that will lead to restarting the medication, such as academic failure or risk-taking behavior. You will also need to monitor your child's behavior while the medication is tapered down or once he or she is off the medication to make sure any lingering symptoms are addressed and adequately managed. This includes noting that your child needs extra support from teachers and family members to deal with the ADHD symptoms.

How do I explain ADHD medication to my child?

It is important that you and your child discuss what ADHD is and how medication will help them, why it is being prescribed, and how it affects their ability to function. This recommendation is especially true for older children and adolescents who may have concerns about being "different" because they are taking medicine. During a talk with your child, you may want to compare taking ADHD medications to wearing eyeglasses. Wearing glasses helps one to see better just as ADHD medication helps one to focus on one's work, pay attention, learn, and behave better.

These discussions should be held even when your child has had a good response to medication. A frank discussion that addresses the benefits compared to possible side effects and other concerns that you and your child might have should be scheduled on a regular basis and included in doctor visits. Even with close monitoring by parents and physicians some children with these worries will "cheek" their medication or just not take it on a regular basis.[27] It is very important to discuss the issues and benefits of taking the medication regularly to lower the chances of a youngster simply stopping the medication without informing anyone. Working with the physician to deal with any desired dosage or medication changes and concerns is also critical.

Youngsters with ADHD and their parents also report that they find that certain magazines, books, and websites – such as the Children and Adults with ADHD (CHADD) Website -- help them make sense of the disorder and its treatment. Many sources are provided in the last section of this *Medication Guide*. Material is available for people of all ages, from young children to young adults. You are encouraged to sample and share some of them with your family members for better understanding of ADHD and helpful hints for its management.

Considerations about medications are further complicated by the fact that the ADHD symptoms may change as the child gets older and grows into adulthood. The severity of hyperactivity usually decreases as the child gets older. However, ADHD can still cause young adults to function below their potential.

Stimulant Medication & Addiction

Is there a risk my child may become addicted to stimulant medication?
Many parents worry that stimulant medication may cause their child to become susceptible to future addiction. Studies suggest that stimulant treatment of ADHD reduces the risk and delays the onset of substance abuse through adolescence; although this reduction in risk can be lost when a child reaches adulthood.[26,28] In addition, stimulant treatment appears to decrease drug-related criminal behavior in adults when they are taking their medication compared to when they are not.[29]

Although it is uncommon for adolescents or young adults with ADHD to abuse their medication themselves, they are at risk for sharing or selling their stimulant medication (especially at college). This becomes problematic because the Drug Enforcement Administration (DEA) has classified stimulants as medications of abuse that require strict control. Physicians who prescribe stimulants must register with the DEA. Refills cannot be routinely ordered and phone orders to pharmacies to dispense these medications are severely limited.

The children and adolescents who receive or purchase stimulant medications illegally are the ones who misuse or abuse stimulant medications and are often not the youth with ADHD who are prescribed the medications. Youth who frequently misuse stimulant medication often require considerably higher doses than when it is prescribed for ADHD treatment. To achieve or maintain their “high,” recreational users also use methods to get stimulants into their blood stream quicker by snorting it or taking it intravenously. Other students without ADHD may use stimulant medications at the proper doses to improve school performance (“cram all night”), even though the medication has not been prescribed for them.

To ensure that these medications are used correctly by youth with ADHD, parents and guardians should make sure the medication is kept in a secure place, and their use should be monitored. Parents should inform the child’s doctor if medication is missing or being taken inappropriately. As a general rule, these medications are best dispensed daily by a parent, unless the child is away at college. If medication is

taken during school hours, most school jurisdictions require that the medication be given by school personnel.

Side Effects & ADHD Medication

What are the most common side effects?

Most children treated with ADHD medication experience mild side effects. Common and predictable side effects from stimulant medication include reduced appetite, weight loss, problems sleeping, headaches, and stomach pain. Some children may experience a delay in growth in height during the first two years of treatment, but growth proceeds at a normal rate thereafter. In general, height is not affected adversely by stimulants.[30] However, there are individual cases of youth who have more notable loss of growth in height that should prompt further monitoring of height and a discussion with the child's practitioner.[16] Also, stimulants may worsen underlying mood and anxiety disorders.

Common side effects experienced with the non-stimulant medications clonidine and guanfacine may include a drop in heart rate and blood pressure, fainting, dizziness, drowsiness, fatigue, irritability, constipation, and dry mouth. Less common are itching, changes in appetite and weight, and depression. Though there is a potential for a rapid rise in blood pressure and risk of stroke if these medications are stopped suddenly, this problem has not been reported with their extended release forms.

Another non-stimulant, atomoxetine (Strattera), has been associated with the following more common side effects: nausea, vomiting, tiredness, upset stomach, headaches, weight loss in younger children, and sexual dysfunction in older adolescents/young adults.

Side effects usually are not dangerous, but they should all be reported to your child's doctor—especially if they cause discomfort or interfere with your child's everyday activities. Side effects often can be reduced by adjusting the dose, adjusting the time of day it is administered, using another form of the medication, or switching to another medication.

How can I best manage some of the common medication side effects my child may experience?

There are several things you can do to decrease problems caused by the most common side effects associated with ADHD medication.

Decreased Appetite: Some solutions for a decreased appetite include administering medication after breakfast so your child will be hungry for the morning meal, feeding your child large meals in the evening when the medication is beginning to wear off, or having food available when the child is hungry. It also is prudent to feed children taking ADHD medication a balanced diet with high-caloric foods and drinks, as appropriate, to overcome any loss in weight. If your child's reduced appetite leads to weight loss, your child's prescribing doctor may stop or reduce the dose of the medication in the summertime or on the weekends. If that doesn't provide enough benefit, the doctor may lower the stimulant dose or switch to another stimulant medication with less effect on decreasing appetite.

Sleep Problems: Children with ADHD often have problems with falling asleep. Regardless of the cause of your child's sleep problems, setting up a healthy bedtime routine should help them get to sleep. This can include bathing, brushing teeth, reading, or being read to. These activities should be designed to relax your child. Also, it is wise to restrict activities involving stimulating and distracting electronics, such as cell phones, video games, and television, before bedtime. There is some research indicating that blue-light emitting electronics such as computers and cell phones can decrease melatonin, a natural sleep agent the body produces to induce sleep.[31] Click here to learn more about the effects of blue light on melatonin and sleep.

If your child is taking a stimulant medication and a bedtime routine does not help the sleep problems, talk with your doctor about administering the medication earlier in the day. For children taking a long-acting stimulant medication, you can ask about changing to a shorter-acting medication (8 hours instead of 12 hours, for example). If your child is already taking short-acting medication, you can talk to the doctor about reducing the dose or stopping the medication in the afternoon to help your child get to sleep. Or, in certain instances, clonidine or guanfacine, melatonin, or a very low dose of a short-acting stimulant can be given at night to help with sleep.

If your child snores, then it is important to notify your physician. Snoring or an irregular breathing pattern may be an indicator of sleep apnea, a condition in which your child may have periods of not breathing while asleep. This results in decreased oxygen reaching the brain. In turn, poor sleep and sleep apnea may cause ADHD symptoms and irritability. Treatment for this condition is available.

Drowsiness: If your child is taking a non-stimulant, guanfacine (Tenex, Intuniv), and/or clonidine (Catapres, Kapvay) and becomes sleepy in the daytime, your child's doctor may recommend giving the medication at bedtime instead of in the morning, dividing the dose and administering the medication twice a day, or lowering the dose to reduce drowsiness.

"Behavioral Rebound": Some children taking stimulant medication may seem more irritable and show an increase in over-activity, impulsivity and inattention in the late afternoon or evening. This is called "rebounding" by some doctors since the change in behavior occurs about the same time the stimulant medication is wearing off. To remedy this late day effect, your child's physician may recommend taking a longer acting stimulant in the morning to cover this late day effect. Alternatively, the doctor may

recommend taking a small dose of shorter-acting, immediate release stimulant later in the day, in addition to long-acting.

Other Side Effects: If you have questions or concerns about these or other side effects, contact your child's doctor.

What are the rare or serious side effects?
Rare side effects are defined as those occurring in less than 1/10,000 patients. These include heart-related problems, hallucinations and agitation, suicidal thoughts, and liver problems that are both rare and serious.

The FDA recommends that parents who are considering ADHD medication for their child carefully review the child's health history with the prescribing doctor before starting medication. They should schedule regular follow-up medical exams with the prescribing doctor. In particular, you should tell the doctor about any heart or mental health problems your child experiences while on ADHD medication and if there is a family history of these problems.

Heart-Related Problems: Extremely rare reports of serious heart-related problems, such as heart attack and stroke, were reported several years ago in patients taking stimulant medication for their ADHD. Some of these problems were fatal. Since then, larger studies involving over 400,000 patients have failed to identify any new cases.[32,33] The FDA investigated these early reports and found that many patients involved in the study had undiagnosed heart defects. The FDA concluded that such events occur at the same rate in those heart healthy patients on medications as those off medications. It has not been possible to determine whether or not a hidden heart defect, the medication, or a combination of the two caused the heart-related problems in the early reports. It appears that there is no increased risk of sudden death, heart attack, or stroke for children taking ADHD medication if the child is healthy and has no current heart problems. However, the FDA added a warning label to ADHD medication cautioning doctors about prescribing them for people who have significant heart defects.

Children at risk for severe heart and circulation problems while taking ADHD medications may be identified during the evaluation. Be sure to tell the doctor if your child has a history of heart problems or symptoms, such as fainting, dizziness, or irregular heart rate. Also, inform the doctor if there is a family history of major heart problems or sudden death in young relatives.

Similar to stimulants, the FDA has added a bolded "Black Box" warning to the package insert for atomoxetine suggesting that some children may experience suicidal thoughts after starting this medication. Atomoxetine also may increase heart rates and blood pressure.

To learn more about the FDA's warnings regarding cardiac risk and psychiatric side effects of ADHD medications, click here.

Hallucinations and Agitation: An FDA review of stimulant medications used to treat ADHD showed a slightly increased risk (about 1 per 1,000) for hearing voices, seeing things (usually small insects), complaining of peculiar feelings in their skin, or becoming suspicious for no reason in children who did not have these symptoms prior to starting medication.

Voicing Suicidal Thoughts: Children and teens with ADHD may have coexisting depression and may be at increased risk for later suicidal ideation. Taking the non-stimulant medication atomoxetine (Strattera) is associated with this rare, but potentially worrisome side effect. If your child expresses suicidal thoughts and feelings while taking Strattera or any other ADHD medication —especially during the first few months after starting – please immediately contact the child's prescribing physician.

Pre-Existing Mental-Health Conditions: Youth with pre-existing psychosis or a history of drug abuse should be carefully monitored when using ADHD medication. Some ADHD medications may worsen pre-existing psychosis if they are taken at doses higher than prescribed. Some children with these conditions, however, can and do benefit from ADHD medication when it is taken along with the medication treatment for symptoms of psychosis or their other mental disorder.

Children with a history of drug abuse may be at increased risk of misusing their stimulant medication. The role of stimulants in the treatment of adolescents with ADHD and substance abuse problems remains unclear.

Do I need to monitor my child's appetite, weight, and height?

Parents are in the best position to monitor their child's well-being—including mental and physical health.

Some of the things that are important to watch when your child is on ADHD medication include changes in sleep, appetite and weight. Your child's growth rate also should be monitored. Some of the things that are important to watch when your child is on ADHD medication include changes in appetite, height, and weight. Your child's height should be measured and recorded, but not more often than every six months. The effect of ADHD treatment on growth has been studied for many years, and the results are quite variable.

If there is a change in your child's appetite or weight, you should contact your child's doctor. You and your child (if your child is involved in making decisions about treatment) can talk with the doctor about changing eating habits to keep his or her weight within the normal range, as well as possible changes in dosing or medications.

Can ADHD medication cause bipolar disorder?

There is conflicting evidence regarding the impact of stimulants on children with bipolar and ADHD. If your child becomes overly agitated, emotional, or irritable while taking ADHD medication, contact your child's doctor immediately.

Can my child take ADHD medication if there is a coexisting condition?
If your child's doctor determines that your child has one or more coexisting conditions, a treatment plan should be developed to address each coexisting condition, as well as the ADHD. Generally, the disorder causing the most difficulty for your child would take priority in treatment.

Many children with ADHD and coexisting conditions take medication to help treat both their ADHD and the other disorder. For example, children with ADHD and anxiety or disruptive behavior disorders have as good a response to stimulants as patients who do not have these coexisting conditions.[16]

Studies suggest that atomoxetine (Strattera) is effective in treating children with coexisting ADHD and anxiety. Similarly, clonidine and guanfacine may be helpful for treating ADHD and coexisting Tourette's syndrome.

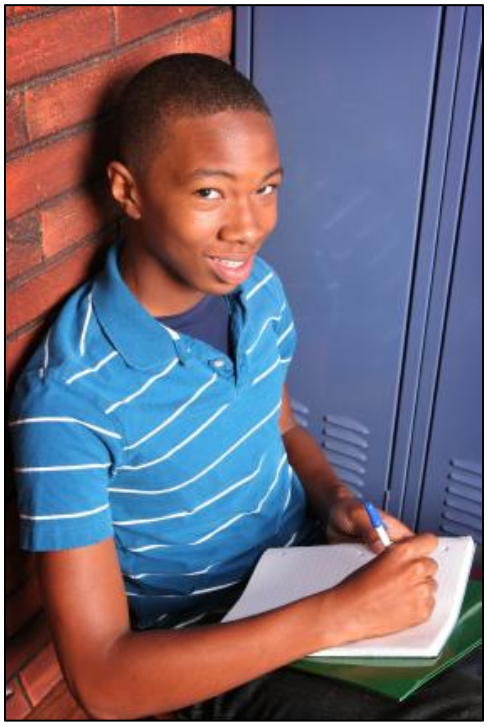
In the case of coexisting ADHD and bipolar disorder, studies show that if bipolar disorder is treated so that mood is stabilized, then the child can be effectively treated with stimulants or other medications without concern of causing return of the bipolar symptoms.

Caution is strongly advised when treating youth with stimulant medications who have coexisting substance abuse disorders.

When ADHD medication fails to improve a child's symptoms, it may be a sign of a coexisting condition or the need to reconsider the diagnosis and basis of the ADHD symptoms.

School & the Child with ADHD

Schools can work with families and doctors to help children with ADHD. Open communication between parents and school staff can be the key to a child's success. Teachers often are the first to notice ADHD-like behaviors and can provide parents, guardians, and doctors with information that may help with diagnosis and treatment. Also, teachers and parents can work together to solve problems and plan ways to support a child's learning at home as well as at school. For example, teachers will often use specific instructional and behavioral methods in the classroom and suggest homework strategies to help students with ADHD. Daily report cards sent home to parents are an effective tool to increase home-school communication and to set and monitor a child's progress toward academic and behavioral goals. For information about daily report cards, click here or see the Resources section of this Guide.



Public schools are legally required to identify and evaluate children suspected of having a disability, and if children are found to be eligible, to provide a free appropriate public education (FAPE) that meets their unique needs. Parents and guardians must give written permission before a school can evaluate or provide services to a child. Parents and guardians can also request in writing to the school counselor or principal that their child be tested to help decide if he or she qualifies for disability services. If the child already has a diagnosis of ADHD, parents can provide the school with a note from the child's doctor with that information. Disability testing and services are confidential and are provided through the public school system at no cost to the family.

Three federal laws assist and protect students with disabilities in public schools: the Individuals with Disabilities Education Act (IDEA), Section 504 of the Rehabilitation Act of 1973[15], and the Americans with Disabilities Act (ADA). IDEA is an education law that provides early intervention, special education, and related services to eligible students with disabilities in Grades Pre-K-12 (up to age 21), while Section 504 and the ADA are civil rights laws that prohibit discrimination against individuals with disabilities. These laws can provide academic and behavioral supports to assist eligible students whose ADHD impairs learning. Examples include: special seating close to the teacher or away from doors and windows; testing accommodations; extra time on tests or taking tests in a separate location away from distractions; modified assignments; additional instruction and tutoring; counseling; and behavioral interventions. Schools and families, with input from the child if appropriate, should consider all needs, academic and behavioral, when planning education services for students with ADHD.

Some children may need to take their ADHD medication during school hours. School staff can give a child prescription medicine if authorized by a parent or guardian. Parents and guardians should contact the school principal, nurse, or counselor to make arrangements if their child needs to take medicine while at school. Many schools have zero tolerance drug policies that prohibit students from carrying medicine with them to school. Also, ADHD medications have become popular as study aids for young people who do not have ADHD, so your child might be pressured by peers to "share" their medicine, in violation of federal law. Long-acting medications can help to avoid the need for a child to take medicine while at school, so if taking medicine at school becomes a problem for your child, talk to your child's doctor about other medication options. Whether or not a child takes medication is a decision for the family and doctor to make; schools are not allowed by federal law to require students to take medicine to attend school.

Psychosocial Treatments

What psychosocial or behavioral treatments can be useful?

Psychosocial treatments, such as behavioral and cognitive therapies, can play an important role in the treatment of ADHD. These therapies focus on reducing ADHD-related behaviors, reinforcing desired behaviors, and developing positive habits that help the child function at home, at school, and in social relationships. Although such treatments alone have not been shown to be as effective as medicine for treating the core symptoms of ADHD, they may be recommended as an initial treatment and should be recommended if the child with ADHD is below the age of 6, the symptoms of ADHD are mild, the diagnosis of ADHD is uncertain, or the family prefers this type of treatment.

Whether or not your child is on medication, behavioral treatment can help to manage ADHD symptoms and lessen their impact on your child. The MTA Study (described above on p. 5-6) found that children with ADHD could take lower doses of medication if they also were being treated with intensive behavioral therapy.

Many parents find that working with a therapist who has experience in behavior issues is the best way to learn how to use behavioral techniques. Most doctors recommend that parents and guardians attend parenting classes, particularly those focused on understanding and managing ADHD-related behaviors.

There are several evidence-based behavioral treatment programs for children with ADHD. More information about specific, evidence-based behavioral treatments can be found in the Resources section of this Guide.

Cognitive Behavioral Therapy (CBT) is another type of psychosocial treatment that targets both the behavioral aspects of ADHD and the thought processes that can add to the youth's problems. It has been proven to be useful with co-existing anxiety, depression, and disruptive disorders but not for the core ADHD symptoms. Previous research suggests that CBT works best for the symptoms of co-existing anxiety, depression, and disruptive disorders. CBT is now being adapted to treat core ADHD symptoms.

Home & School Strategies for Your Child

- Have the same routine every day.
- Organize everyday items.
- Use organizers for homework.
- Keep rules simple, clear, and consistent.

Students can also benefit when behavioral techniques are used at school. Teachers can set up behavioral programs in the classroom that are reinforced at home on a daily basis. One such program uses a daily report card designed to increase good classroom behavior such as paying attention, controlling impulses, and improving performance in the school setting.

Unproven Treatments

Do alternative treatments for ADHD, such as special diets or herbal supplements, really work?
Parents often hear reports of "miracle cures" for ADHD on television, in magazines, or in advertisements. Most of these treatments have not been shown by research to be effective for ADHD, some are expensive, and some may even be harmful. Before considering any treatment for ADHD, discuss it with your child's doctor. Also keep in mind that there is no known cure for ADHD at this time.

Some of the more prevalent, yet unproven, treatments for ADHD are special diets, herbal supplements, homeopathic treatments, vision therapy, chiropractic adjustments, yeast infection treatments, anti–motion-sickness medication, metronome training, auditory stimulation, applied kinesiology (realigning bones in the skull), and brain wave neurobiofeedback.[34]

Many parents hope that alternative treatments will be effective; however, rigorous scientific research has not confirmed that these alternatives are effective at managing the symptoms of ADHD. Recent research has shown that children with ADHD benefit from a healthy diet consisting of mainly whole grains, fruits, vegetables, and low-fat proteins. Although a very small subset of children with ADHD benefit when food additives are eliminated from their diets, such diets are difficult to implement and do not help the vast majority of children with ADHD.[35] Despite the strong belief that increased sugar intake will make children more hyperactive, studies to date have not been able to find an increase in sugar intake causing a worsening in behavior.[35,36] In summary, studies do not support elimination diets to treat ADHD unless an offending agent can be identified.[36]

There is limited evidence linking certain dietary supplements, such as Omega 3 fatty acids, to improvement of ADHD symptoms. Generally, improvement with supplemental diets is demonstrated to be less effective than FDA-approved ADHD medication.[37,38] However, before giving any herbs or supplements to your child, it is essential to discuss potential risks and benefits with your child's doctor. Many of the supplements, whether taken with or without approved ADHD medications, can result in adverse side effects. They may interact with prescribed medications and hinder your child's progress or compromise your child's safety.

If you and your child's doctor decide to try any special diets, supplements, or other alternative treatments, it may be helpful to use the same measures you would use to tell if one of the FDA-approved medications is working. These include behavior rating scales and specific target goals that you set up in consultation with your child's doctor.

Transition to College

How can I help my adolescent thrive at college?

College and post-secondary schools present special challenges for young people with ADHD. At the same time that academic demands are increasing, everyday routines are changing, and the structure that may have been provided by parents and schools is gone, so youth are on their own to study and complete assignments, get enough sleep, take their medication, and get to class on time. In addition, they may be attending school away from their home and doctor and may let their medical treatment lapse. All of these factors can increase their risk for academic failure and drug and alcohol use. Also, students who continue to take ADHD medication in college may face greater pressure to sell or give their medication to others, which could get them in serious trouble with the school and legal authorities. It may help greatly if the adolescent with ADHD can continue to work with their treating physician by using the phone for regular sessions while away at college. At the same time, parents cannot continue to take responsibility for all aspects of their teen's life.

A major decision will revolve around whether the young adult with ADHD should attend college away from home or continue to live with parents while attending a local institution. If a high school senior with ADHD is not independently managing his or her daily routine, parents should be cautious about sending them too far from home. "Life coaching" may be useful in these situations, allowing the teen to assume responsibility for management of medication, therapy and school work. It is helpful to have these supports established before the adolescent leaves for college.[39] A life coach helps people meet the challenges and take advantage of the opportunities that life presents. An ADHD coach is a life coach who specializes in helping people with ADHD to meet the unique challenges they face and acquiring skills related to time management, organization, and prioritizing tasks, for instance. It is advised that parents or college students seeking an ADHD coach check on the coach's education background to get a better idea of the training and certification of the life coach.

In selecting a college or vocational school, a pre-visit can be helpful. Parents should make sure that their child clearly understands school policies regarding alcohol and recreational drug use on campus. If your child will continue to take medication for ADHD, you should consider contacting the student health service about psychiatric care or finding a doctor in the community near the college who can prescribe and monitor the medication, and work with your child's long-standing physician near home. Parents should also be aware of the extent to which services and resources are available and encouraged for special-needs youth. It is important to find a college that addresses the needs yet enhances the strengths of the student. Such colleges acknowledge the special needs of their students with ADHD by supporting an on-campus student learning center (with opportunities for obtaining tutoring) as well as a campus counseling center where compliance with treatment is encouraged.

Students with ADHD in college and vocational school may also be eligible for continued academic support, accommodations, and modifications under Section 504 and Title II of the ADA. Unlike in public

K-12 schools, however, older students must self-disclose their disability and provide up-to-date documentation to the school's disability office.

It is a good idea for students to contact the disability office before attending the school to find out what documentation is needed and what help is available, so academic supports can be in place when classes begin. Students and families should consider what disability services a school offers when selecting a college or vocational program. For more information on students' legal rights and responsibilities in post-secondary school, click here, or see the Resources section of the Guide.

Regardless of medication status, students in college, trade, or professional schools can still benefit from receiving accommodations for ADHD, such as extended test time, a quiet place to take exams, reduced academic workload, and printed assignments. The line between feeling too proud or fearful to use special accommodations in an academic or work setting and overusing or abusing those same opportunities is broad. The family and youth need to be aware of the laws that provide protections and special accommodations for disabilities such as ADHD. Counselors in schools and in employee assistance programs (EAPs) in the workplace are available to assist the individual with ADHD.

Reviewing common problems encountered during this transition period and discussing how they might best be addressed can be helpful to the student and family. Some specific warnings should be provided for students attending college or postsecondary school. It is important that they be aware that they cannot share or loan pills to other students because this is illegal. They should also avoid drinking alcohol or using illicit drugs because they can potentially have adverse reactions when combined with prescribed medications. Some students choose to take their ADHD stimulant medications only when studying; however, if they are driving or involved in activities that require attention and impulse control, it is essential to encourage them to take their medications on a regular basis.

Career counseling is also important to help young adults with ADHD choose a career that is best suited for their skill set, interests, strengths, and abilities. Individual therapy may be helpful if self-esteem is being damaged because of inadequate school or work performance, or booster sessions to serve as reminders to use the skills they have developed to manage their ADHD. Additionally, "supportive" therapy can be helpful for individuals who are having problems sustaining relationships because the ADHD behaviors such as not listening, forgetfulness, and disorganization are creating conflicts. Knowing how and when to share with schools and employers that they have ADHD is important. Preparation for greater independence as a young adult includes expectations for the youth to self-monitor the need for continued, regular medication use and to use organization strategies that have been helpful in high school. Responsibility for monitoring is also shared with parents, mental health providers, and school personnel. Encouraging the college student to give school administrators and doctor's permission to communicate with parents is a must in providing the on-going support that may be critical for the student's success in making the transition from home.

ADHD remains a treatable disorder in adulthood. Learning to keep up with advances in ADHD treatment and suggestions for self-management of the disorder are valuable skills for the older child and

adolescent to develop. Your youngster should be encouraged to learn to evaluate the large amount of ADHD self-management information available to them so that they can select effective strategies to improve organizational skills and increase symptom control. The task of providing support for individuals with ADHD throughout the lifespan can be challenging for parents. Turning responsibility for managing their ADHD over to the older adolescent in a gradual but steady manner can help him or her function more independently in the future.

Transition of Adolescents with ADHD into Adulthood

Since the majority of children and adolescents diagnosed with ADHD have persistence of symptoms into adulthood, parents need to be aware of the need for continued treatment and regular monitoring. ADHD symptoms change over time, with less obvious hyperactive behavior in teens and young adults. However, the symptoms of inattention and impulsivity do persist into adulthood and can have a negative impact on academic functioning, work performance, and interpersonal relationships. Whether an older teen or young adult is ready to stop taking ADHD medication is a complex question. Parents should discuss this with their teen's physician and teenager as a regular part of their long-term ADHD management. Brief trials off medication with careful monitoring during school time can help determine if a young person is ready to have the medication lowered or discontinued.

In addition, an older adolescent or emerging young adult may have used a number of creative solutions to problem solve in the process of growing up. Bad habits related to their ADHD may also have developed. Youth transitioning into adulthood need to become aware of the opportunities to enhance success as well as circumstances that result in frustration, anxiety, depression, or less-than-expected accomplishment. The process of transition depends to a large extent upon the management of the ADHD and the demands and responsibilities of greater independent functioning.

If ongoing medication is needed, it is important for the adolescent or young adult to establish a therapeutic relationship with a psychiatrist, other physician, or health-care provider who has expertise in treatment of adults with ADHD.

What Does the Future Hold?

We now know that most children do not outgrow all of their ADHD symptoms by their teenage years. While some of the symptoms of ADHD can diminish over time, many children will continue to experience symptoms and impairment in their functioning into late adolescence and adulthood.[8,14,31,40,41] Almost 50 percent of children are expected to require treatment for ADHD in adulthood,

particularly those with coexisting disruptive disorders, anxiety, smoking, and substance abuse. Early diagnosis and treatment can help these individuals learn how to manage their symptoms and succeed in life.

Research is ongoing to learn more about the way ADHD affects brain function[42,43,44,45] and how to best treat the condition.[45,46] Other research is looking at the long-term outcomes for people with ADHD. Although the clinical trial studies report outcomes related to ADHD symptom reduction, most of the older children with reduced ADHD symptoms continue to function less well than their peers without ADHD. This means that information on how well pediatric patients with ADHD do when they continue to be treated in community settings is very much needed, particularly concerning those who have been treated over a long period of time. Parents may increasingly be requested to provide outcome information by monitoring symptoms and side effects, and by noting school performance and improvements in relationships with family and the child's peers.

However, advances in molecular genetics, brain imaging, and neuropsychological assessment may lead to the development of tools that can help doctors predict a child's response to various treatments, particularly medications, as they grow up. One example involves the new scientific field of pharmacogenomics where research aims to determine which medication works best for which child.[47] In addition, this type of research aims to discover the best dose of that medication to use, thereby optimizing treatment for the individual child. As more is learned about the causes of ADHD and how they affect the brain, more can be done to prevent ADHD.

For More Information about ADHD

The following list of references provides additional information about ADHD and associated issues. This includes internet sites and articles, books or magazines that may be useful in gaining better understanding of ADHD and its treatment. It is not meant to include everything that is available on the subject. We hope that it will help you to better understand ADHD and its treatment. If you are reading a printed copy of this manual you may wish to go to this website to have access to the links embedded in the manual.

National Organizations/Agencies

American Academy of Child and Adolescent Psychiatry (AACAP)
3615 Wisconsin Avenue, NW
Washington, DC 20016-3007
1-202-966-7300
http://www.aacap.org

American Academy of Family Physicians (AAFP)
11400 Tomahawk Creek Parkway
Leawood, KS 66211-2672
1-800-274-2237
http://www.aafp.org

American Academy of Pediatrics (AAP)
141 Northwest Point Boulevard
Elk Grove Village, IL 60007-1098
1-847-434-4000
http://www.aap.org

American Psychiatric Association (APA)
1000 Wilson Boulevard, Suite 1825
Arlington, VA 22209
1-703-907-7300
http://www.psych.org

Attention Deficit Disorder Association
"Helping Adults with ADHD Lead Better Lives."
www.add.org

Attention Deficit Disorder Resources
223 Tacoma Avenue, South, #100
Tacoma, WA 98402
1-253-759-5085
http://www.addresources.org

ADD Warehouse
300 Northwest 70th Avenue, Suite 102 Plantation, FL 33317
800-233-9273 Phone 954-792-8100 Fax 954-792-8545
www.addwarehouse.com

Centers for Disease Control and Prevention (CDC)
1600 Clifton Road
Atlanta, GA 30333
1-404-639-3311
http://www.cdc.gov

Child & Adolescent Bipolar Foundation
1000 Skokie Boulevard, Suite 570
Wilmette, Illinois 60091
1-847-256-8525
http://www.bpkids.org

Children and Adults with Attention-Deficit/Hyperactivity Disorder (CHADD)
8181 Professional Place, Suite 150
Landover, MD 20785
1-800-233-4050
http://www.chadd.org

Edge Foundation
2017 Fairview Avenue East, Suite I
Seattle WA 98102
Phone: 888-718-8886
Fax: 877-718-2220
https://edgefoundation.org/

Federation of Families for Children's Mental Health
9605 Medical Center Drive, Suite 280
Rockville, MD
1-240-403-1901
http://www.ffcmh.org

Institute for Clinical Systems Improvement
8009 34th Avenue South, Suite 1200
Bloomington, MN 55425
(952) 814-7060 (Main)
(952) 858-9675 (Fax)
www.icsi.org

LD OnLine
WETA Public Television
2775 South Quincy Street
Arlington, VA 22206
http://www.ldonline.org

Mental Health America
2000 N. Beauregard Street, 6th Floor Alexandria, VA 22311
Phone (703) 684-7722
Toll free (800) 969-6642
Fax (703) 684-5968
http://www.nmha.org/

National Alliance on Mental Illness (NAMI)
3803 N. Fairfax Dr., Suite 100
Arlington, VA 22203
Main: (703) 524-7600 Fax: (703) 524-9094
Member Services: (888) 999-6264
Helpline: (800) 950-6264
http://www.nami.org

National Association of State Directors of Special Education, Inc. (NASDSE) IDEA Partnership
1800 Diagonal Road, Suite 320
Alexandria, VA 22314
1-877-IDEA-info
http://www.ideapartnership.org
National Committee for Quality Assurance
www.ncqaqiconnection.org

National Dissemination Center for Children with Disabilities (NICHCY)
P.O. Box 1492
Washington, DC 20013
1-800-695-0285
http://www.nichcy.org

National Institute of Mental Health (NIMH)
6001 Executive Boulevard
Bethesda, MD 20892
1-866-615-6464
http://www.nimh.nih.gov

National Resource Center on AD/HD
8181 Professional Place, Suite 150
Landover, MD 20785
1-800-233-4050
http://www.help4adhd.org

Parent Advocacy Coalition for Educational Rights (PACER Center)
8161 Normandale Boulevard
Minneapolis, MN 55437
1-888-248-0822
http://www.pacer.org

Public Information and Communications Branch
National Institute of Mental Health (NIMH)
6001 Executive Boulevard, Room 8184, MSC 9663
Bethesda, MD 20892-9663
1-866-615-6464
http://www.nimh.nih.gov

Information about ADHD: Publications in English

Children Who Can't Pay Attention
American Academy of Child & Adolescent Psychiatry Facts for Families
#6 Children Who Can't Pay Attention/Attention-Deficit/Hyperactivity Disorder
www.accaap.org

National Institute for Health and Clinical Excellence (NICE) Clinical guideline 72 (Great Britain)
www.nice.org.uk/CG072fullguideline

"What We Know" is a series of information sheets about ADHD from the National Resource Center on ADHD: A Program of CHADD (available in both HTML and PDF)
Full List: http://www.help4adhd.org/en/about/wwk

The Disorder Named ADHD
HTML: http://www.help4adhd.org/en/about/what/WWK1
PDF: http://www.help4adhd.org/documents/WWK1.pdf

Parenting a Child with ADHD
HTML: http://www.help4adhd.org/en/living/parenting/WWK2
PDF: http://www.help4adhd.org/documents/WWK2.pdf

Managing Medication for Children and Adolescents with ADHD
HTML: http://www.help4adhd.org/en/treatment/medication/WWK3
PDF: http://www.help4adhd.org/documents/WWK3.pdf
Short Version
HTML: http://www.help4adhd.org/en/treatment/medication/WWK3S
PDF: http://www.help4adhd.org/documents/WWK3s.pdf

Educational Rights for Children with ADHD
HTML: http://www.help4adhd.org/en/education/rights/WWK4
PDF: http://www.help4adhd.org/documents/WWK4.pdf

ADHD and Co-Existing Disorders
HTML: http://www.help4adhd.org/en/treatment/coexisting/WWK5
PDF: http://www.help4adhd.org/documents/WWK5.pdf

ADHD and Coexisting Conditions: Tics and Tourette's syndrome
HTML: http://www.help4adhd.org/en/treatment/coexisting/WWK5A
PDF: http://help4adhd.org/documents/WWK5a.pdf

ADHD and Coexisting Conditions: Disruptive Behavior Disorders
HTML: http://www.help4adhd.org/en/treatment/coexisting/WWK5B
PDF: http://www.help4adhd.org/documents/WWK5B.pdf

ADHD and Coexisting Conditions: Depression
HTML: http://www.help4adhd.org/en/treatment/coexisting/WWK5C
PDF: http://www.help4adhd.org/documents/WWK5c.pdf

ADHD and Coexisting Conditions: ADHD, Sleep and Sleep Disorders
HTML: http://www.help4adhd.org/en/treatment/coexisting/WWK5D
PDF: http://www.help4adhd.org/documents/WWK5d.pdf

School-Home Daily Report Cards
HTML: http://www.nichq.org/adhd_tools.html
PDF:
http://www.nichq.org/toolkits_publications/complete_adhd/12HowToEstabSchlHomeDailyRepCa.pdf

Complementary and Alternative Treatments
HTML: http://www.help4adhd.org/en/treatment/complementary/WWK6
PDF: http://www.help4adhd.org/documents/WWK6.pdf

Complementary and Alternative Treatments: Neurofeedback (EEG Biofeedback) and ADHD
HTML: http://www.help4adhd.org/en/treatment/complementary/WWK6
PDF: http://www.help4adhd.org/documents/WWK6A.pdf
Short Version: Deciding on a Treatment for ADHD (short version)
HTML: http://www.help4adhd.org/en/treatment/complementary/WWK6S
PDF: http://www.help4adhd.org/documents/WWK6s.pdf

Psychosocial Treatment for Children and Teenagers with ADHD
HTML: http://www.help4adhd.org/en/treatment/behavioral/WWK7
PDF: http://www.help4adhd.org/documents/WWK7.pdf
Short Version: Behavioral Treatment for Children and Teenagers with ADHD
HTML: http://www.help4adhd.org/en/treatment/behavioral/WWK7S
PDF: http://www.help4adhd.org/documents/WWK7s.pdf

ADHD Predominantly Inattentive Type
HTML: http://help4adhd.org/en/about/what/WWK8
PDF: http://www.help4adhd.org/documents/WWK8.pdf

Succeeding in College
HTML: http://www.help4adhd.org/en/education/college/WWK13
PDF: http://www.help4adhd.org/documents/WWK13.pdf
ADHD and Teens: Information for Teens
HTML: http://help4adhd.org/en/living/parenting/WWK20A
PDF: http://www.help4adhd.org/documents/WWK20A.pdf

ADHD and Teens: Information for Parents
HTML: http://help4adhd.org/en/living/parenting/WWK20B
PDF: http://www.help4adhd.org/documents/WWK20B.pdf

Medication Diversion
http://www.help4adhd.org/en/living/parenting/diversion

Caring for Children with ADHD: A Resource Toolkit for Clinicians
http://www.nichq.org/adhd_tools.html

Information about ADHD: Publications in Spanish

All What We Know sheets are also available in Spanish as the Lo Que Sabemos series: Full List:
http://www.help4adhd.org/es/about/wwk

El trastorno conocido como TDA/H
HTML: http://www.help4adhd.org/es/about/what/WWK1
PDF: http://help4adhd.org/documents/WWKSpan1.pdf

Crianza de un niño con el TDA/H
HTML: http://www.help4adhd.org/es/living/parenting/WWK2
PDF: http://help4adhd.org/documents/WWKspan2.pdf

Manejo de los medicamentos para los niños y adolescentes con TDA/H
HTML: http://www.help4adhd.org/es/treatment/medication/WWK3
PDF: http://help4adhd.org/documents/WWKspan3.pdf

Derechos educacionales de los niños con el TDA/H
HTML: http://www.help4adhd.org/es/education/rights/WWK4
PDF: http://help4adhd.org/documents/WWKspan4.pdf

TDA/H y Trastornos Coexistentes
HTML: http://www.help4adhd.org/es/treatment/coexisting/WWK5
PDF: http://www.help4adhd.org/documents/WWKSpan5.pdf

El TDA/H y los trastornos coexistentes: trastorno de comportamiento perturbador
HTML: http://help4adhd.org/es/treatment/coexisting/WWK5B
PDF: http://help4adhd.org/documents/WWKspan5B.pdf

El TDA/H y los trastornos coexistentes: La depresión
HTML: http://help4adhd.org/es/treatment/coexisting/WWK5C
PDF: http://help4adhd.org/documents/WWKspan5C.pdf

El TDA/H y los trastornos coexistentes: El sueño y los trastornos del sueño
HTML: http://help4adhd.org/es/treatment/coexisting/WWK5D
PDF: http://help4adhd.org/documents/WWKspan5D.pdf

Tratamientos complementarios y alternativos
HTML: http://www.help4adhd.org/es/treatment/complementary/WWK6
PDF: http://help4adhd.org/documents/WWKspan6.pdf

Tratamientos complementarios y alternativos: Neuoretroalimentación (retroalimentación electroencefalográfica, EEG) y el TDA/H
HTML: http://www.help4adhd.org/es/treatment/complementary/WWK6A
PDF: http://help4adhd.org/documents/WWKSpan6A.pdf

Tratamiento psicosocial para niños y adolescentes con TDA/H
HTML: http://help4adhd.org/es/treatment/behavioral/WWK7
PDF: http://help4adhd.org/documents/WWKSpan7.pdf
Short version: Tratamiento conductual para los niños y adolescentes con TDA/H
HTML: http://help4adhd.org/es/treatment/behavioral/WWK7S
PDF: http://help4adhd.org/documents/WWKspan7s.pdf

TDA/H - Tipo predominantemente de falta de atención
HTML: http://help4adhd.org/es/about/what/WWK8
PDF: http://help4adhd.org/documents/WWKSpan8.pdf

Éxito en la universidad
HTML: http://help4adhd.org/es/education/college/WWK13
PDF: http://help4adhd.org/documents/WWKSpan13.pdf

TDA/H y adolescentes: Información para adolescentes
HTML: http://help4adhd.org/es/living/parenting/WWK20A
PDF: http://help4adhd.org/documents/WWKspan20A.pdf

TDA/H y adolescentes: Información para padres
HTML: http://help4adhd.org/es/living/parenting/WWK20B
PDF: http://help4adhd.org/documents/WWKspan20B.pdf

Apartarse de los medicamentos
http://help4adhd.org/es/living/parenting/diversion

Derechos Educacionales de los niños con el Trastorno por el Déficit de Atención e Hiperactividad (TDA/H): Una cartilla para padres ("Educational Rights for Children with Attention-Deficit/Hyperactivity Disorder: A Primer for Parents")
PDF ONLY: http://www.help4adhd.org/documents/NRC_Bilingual_Educational_Rights_Guide.pdf

Education Resources

U. S. Department of Education. (N.D.).
Building the Legacy: IDEA 2004
http://idea.ed.gov/explore/home

U.S. Department of Education. (2008). Identifying and treating Attention Deficit Hyperactivity Disorder: A resource for school and home. Washington, DC: Office of Special Education and Rehabilitative Services, Office of Special Education Programs. Available at: http://www2.ed.gov/rschstat/research/pubs/adhd/adhd-identifying-2008.pdf.

U.S. Department of Education. (2008). Teaching children with Attention Deficit Hyperactivity Disorder: Instructional strategies and practices. Washington, D.C.: Office of Special Education and Rehabilitative Services, Office of Special Education Programs. Available at: http://www2.ed.gov/rschstat/research/pubs/adhd/adhd-teaching-2008.pdf.

U. S. Department of Education. (2011). Students with Disabilities Preparing for Postsecondary Education: Know Your Rights and Responsibilities. Washington, DC: Office for Civil Rights. Available at: http://www2.ed.gov/about/offices/list/ocr/transition.htmlhttp://www2.ed.gov/about/offices/list/ocr/transition.html.

U.S. Department of Education, Office of Civil Rights. (N.D.). Protecting Students with Disabilities: Frequently Asked Questions About Section 504 and the Education of Children with Disabilities. http://www2.ed.gov/about/offices/list/ocr/504faq.html

Recommended Reading for Children

Learning To Slow Down & Pay Attention: A Book for Kids About ADHD (2004)
Kathleen G. Nadeau, Ellen B. Dixon, and Charles Beyl

Jumpin' Johnny Get Back to Work! A Child's Guide to ADHD/Hyperactivity (1991)
Michael Gordon

The Survival Guide for Kids with ADD or ADHD (2006)
John F. Taylor

Joey Pigza Loses Control (2005)
Jack Gantos

50 Activities and Games for Kids with ADHD (2000)
Patricia O. Quinn (Editor)

The Girls' Guide To AD/HD: Don't Lose This Book! (2004)
Beth Walker

Otto Learns about His Medicine (ages 4-8)
Matthew Galvin

Learning to Slow Down and Pay Attention (ages 9-12)
Kathleen G. Nadeau and Ellen B. Dixon

Putting on the Brakes: Understanding and taking Control of Your ADD or ADHD (3rd Edition; ages 8-13)
Patricia O. Quinn and Judith M. Stern

Putting on the Brakes Activity Book for Kids with ADD or ADHD (2nd Edition)
Patricia O. Quinn and Judith M. Stern

Parenting Children with ADHD: 10 Lessons That Medicine Cannot Teach
Vincent J. Monastra

Recommended Reading for Teens and College Students

A Bird's-Eye View of Life with ADD and ADHD: Advice from Young Survivors. (2003).
Chris Dendy and Alex Dendy. Cedar Bluff, AL: Cherish the Children.

AD/HD and the College Student: The Everything Guide to Your Most Urgent Questions
Patricia O. Quinn

Applying to College for Students with ADD or LD: A Guide to Keep You (and Your Parents) Sane, Satisfied, and Organized Through the Admission Process
Blythe Grossberg

Recommended Reading for Families and Caregivers

Taking Charge of ADHD: The Complete, Authoritative Guide for Parents (Revised Edition). (2000).
Russell Barkley. New York, NY: The Guilford Press

Raising Resilient Children: Fostering Strength, Hope, and Optimism in Your Child (2002)
Robert Brooks and Sam Goldstein

Attention Deficit Disorder: The Unfocused Mind in Children and Adults (2006)
Tom Brown

Teenagers with ADD and ADHD: A Guide for Parents and Professionals (revised edition) (2006)
Chris Dendy

Making the System Work for Your Child with ADHD (2004)
Peter Jensen

Practical Suggestions for AD/HD (2003)
Clare Jones

Kids in the Syndrome Mix of ADHD, LD, Asperger's, Tourette's, Bipolar, and More! The One-Stop Guide for Parents, Teachers, and Other Professionals (2005)
Martin Kutscher, Tony Attwood, and Robert Wolff

Help4ADD@High School (1998)
Kathleen Nadeau

Putting on the Brakes: Young People's Guide to Understanding Attention Deficit Hyperactivity Disorder (2001)
Patricia Quinn and Judith Stern

The ADHD Book of Lists: A Practical Guide for Helping Children and Teens with Attention Deficit Disorders (2003)
Sandra Rief

Parenting Children with ADHD: 10 Lessons That Medicine Cannot Teach (APA Lifetools) (paperback) (2004)
Vincent J. Monastra, Ph.D.

Straight Talk About Psychiatric Medications for Kids (revised edition) (paperback) (2004)
Timothy E. Wilens, M.D.

The Gift of ADHD: How to Transform Your Child's Problems into Strengths (paper- back) (2005)
Lara Honos-Webb

Twelve Effective Ways to Help Your ADD/ADHD Child: Drug-Free Alternatives for Attention-Deficit Disorders (paperback) (2000)
Laura J. Stevens

Thom Hartmann's Complete Guide to ADHD: Help for Your Family at Home, School and Work (paperback) (2000)
Thom Hartmann, Lucy Jo Palladino (Foreword), and Peter Jaksa (Afterword)

ADD & ADHD Answer Book: The Top 275 Questions Parents Ask (paperback) (2005)
Susan Ashley

ADHD: What Every Parent Needs to Know (2nd Edition)
American Academy of Pediatrics

ADHD in HD: Brains Gone Wild
Jonathan Chesser

The Organized Student
Donna Goldberg and Jennifer Sweibel

Easy to Love But Hard to Raise
Edited by Kay Marner and Adrienne Ehlert Bashista

Superparenting for ADD
Edward M. Hallowell and Peter S. Jensen

The Kazdin Method for Parenting the Defiant Child. (hardback)(2008)
ALAN F. Kazdin with Carlo Rotolo

ADDitude Magazine. Subscription available at
https://secure.palmcoastd.com/pcd/eSv?iMagId=09201&i4Ky=IU31

Attention Magazine. Free with CHADD membership, available at
http://www.chadd.org/source/Members/signpay1.cfm?Section=Join_CHADD

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