WHAT WE KNOW

The Disorder Named ADHD

Occasionally, we may all have difficulty sitting still, paying attention or controlling impulsive behavior. For some people, the problems are so pervasive and persistent that they interfere with their lives, including home, academic, social and work settings.

Attention-deficit/hyperactivity disorder (ADHD) is a common neurobiological condition affecting 5-8 percent of school age children[1,2,3,4,5,6,7] with symptoms persisting into adulthood in as many as 60 percent of cases (i.e. approximately 4% of adults).[8,9] It is characterized by developmentally inappropriate levels of inattention, impulsivity, and hyperactivity.

Although individuals with this disorder can be very successful in life, without identification and proper treatment, ADHD may have serious consequences, including school failure, family stress and disruption, depression, problems with relationships, substance abuse, delinquency, risk for accidental injuries and job failure. Early identification and treatment are extremely important.

Medical science first documented children exhibiting inattentiveness, impulsivity and hyperactivity in 1902. Since that time, the disorder has been given numerous names, including minimal brain dysfunction, hyperkinetic reaction of childhood and attention-deficit disorder with or without hyperactivity. With the *Diagnostic and Statistical Manual, fourth edition (DSM-IV)* classification system, the disorder has been renamed attention-deficit/hyperactivity disorder, or ADHD. The current name reflects the importance of the inattention characteristics of the disorder as well as the other characteristics of the disorder, such as hyperactivity and impulsivity.

THE SYMPTOMS

Typically, ADHD symptoms arise in early childhood, unless associated with some type of brain injury later in life. Some symptoms persist into adulthood and may pose life-long challenges. Although the official diagnostic criteria state that the onset of symptoms must occur before age seven, leading researchers in the field of ADHD argue that criterion should be broadened to include onset anytime during childhood.[10] The symptom-related criteria for the three primary subtypes are adapted from *DSM-IV* and summarized as follows:

" Although individuals with this disorder can be very successful in life, without proper identification and proper treatment, ADHD may have serious consequences… "

ADHD predominantly inattentive type: (ADHD-I)

- Fails to give close attention to details or makes careless mistakes.
- Has difficulty sustaining attention.
- Does not appear to listen.
- Struggles to follow through on instructions.
- Has difficulty with organization.
- Avoids or dislikes tasks requiring sustained mental effort.
- Loses things.
- Is easily distracted.
- Is forgetful in daily activities.

ADHD predominantly hyperactive-impulsive type: (ADHD-HI)

- Fidgets with hands or feet or squirms in chair.
- Has difficulty remaining seated.
- Runs about or climbs excessively.
- Difficulty engaging in activities quietly.
- Acts as if driven by a motor.
- Talks excessively.
- Blurts out answers before questions have been completed.
- Difficulty waiting or taking turns.
- Interrupts or intrudes upon others.

ADHD combined type: (ADHD-C)

- Individual meets both sets of inattention and hyperactive/impulsive criteria.

Youngsters with ADHD often experience delays in independent functioning and may therefore behave in ways more like younger children.[11] In addition, ADHD frequently co-occurs with other conditions, such as depression, anxiety or learning disabilities. For example, in 1999, NIMH research indicated that two- thirds of children with ADHD have a least one other co-existing condition.[12] When co-existing conditions are present, academic and behavioral problems, as well as emotional issues, may be more complex.

Teens with ADHD present a special challenge. During these years, academic and organizational demands increase. In addition, these impulsive youngsters are facing typical adolescent issues: discovering their identity, establishing independence, dealing with peer pressure, exposure to illegal drugs, emerging sexuality, and the challenges of teen driving.

Recently, deficits in executive function have emerged as key factors impacting academic and career success.[13] Simply stated, executive function refers to the "variety of functions within the brain that activate, organize, integrate and manage other functions."[14] This permits individuals to appreciate the longer-term consequences of their actions and guide their behavior across time more effectively.[15] Critical concerns include deficits in working memory and the ability to plan for the future, as well as maintaining and shifting strategies in the service of long-term goals.

THE DIAGNOSIS

Determining if a child has ADHD is a multifaceted process. Many biological and psychological problems can contribute to symptoms similar to those exhibited by children with ADHD. For example, anxiety, depression and certain types of learning disabilities may cause similar symptoms. In some cases, these other conditions may actually be the primary diagnosis; in others, these conditions may co-exist with ADHD.

There is no single test to diagnose ADHD. Therefore, a comprehensive evaluation is necessary to establish a diagnosis, rule out other causes and determine the presence or absence of co-existing conditions. Such an evaluation requires time and effort and should include a careful history and a clinical assessment of the

individual's academic, social, and emotional functioning and developmental level. A careful history should be taken from the parents and teachers, as well as the child, when appropriate. Checklists for rating ADHD symptoms and ruling out other disabilities are often used by clinicians; these age-normed instruments help to ensure that the symptoms are extreme for the child's developmental level.

There are several types of professionals who can diagnose ADHD, including school psychologists, clinical psychologists, clinical social workers, nurse practitioners, neurologists, psychiatrists and pediatricians. Regardless of who does the evaluation, the use of the *Diagnostic and Statistical Manual IV* diagnostic criteria for ADHD is necessary. A medical exam by a physician is important and should include a thorough physical examination, including assessment of hearing and vision, to rule out other medical problems that may be causing symptoms similar to ADHD. In rare cases, persons with ADHD also may have a thyroid dysfunction. Only medical doctors can prescribe medication if it is needed. Diagnosing ADHD in an adult requires an evaluation of the history of childhood problems in behavior and academic domains, as well as examination of current symptoms and coping strategies. For more information, read *What We Know* #9, "Diagnosis of ADHD in Adults."

"Research clearly indicates that ADHD tends to run in families and that the patterns of transmission are to a large extent genetic."

THE CAUSES

Multiple studies have been conducted to discover the cause of the disorder. Research clearly indicates that ADHD tends to run in families and that the patterns of transmission are to a large extent genetic.[16,17] More than 20 genetic studies, in fact, have shown evidence that ADHD is strongly inherited. Yet ADHD is a complex disorder, which is undoubtedly the result of multiple interacting genes. Other causal factors (such as low birth weight, prenatal maternal smoking, and additional prenatal problems) may contribute to other cases of ADHD.[18,19,20,21] Problems in parenting or parenting styles may make ADHD better or worse, but these do not cause the disorder. ADHD is clearly a brain-based disorder. Currently research is underway to better define the areas and pathways that are involved.

PROGNOSIS AND LONG-TERM OUTCOMES

Children with ADHD are at risk for potentially serious problems in adolescence: academic underachievement and school failure, problems in social relations, risk for antisocial behavior patterns, teen pregnancy, and adverse driving consequences.[22] As noted above, ADHD persists from childhood to adolescence in the vast majority of cases, although the symptom area of motor activity tends to diminish with time. Furthermore, up to two-thirds of children with ADHD continue to experience significant symptoms in adulthood. Yet many adults with ADHD learn coping strategies and compensate quite well.[23,24] A key to good outcome is early identification and treatment.

MULTIMODAL TREATMENT

ADHD in children often requires a comprehensive approach to treatment called "*multimodal*" and includes:

- Parent and child education about diagnosis and treatment
- Behavior management techniques
- Medication
- School programming and supports

Treatment should be tailored to the unique needs of each child and family. Research from the landmark NIMH Multimodal Treatment Study of ADHD is very encouraging.[25] Children who received carefully monitored medication, alone or in combination with behavioral treatment, showed significant improvement in their behavior at home and school plus better relationships with their classmates and family than did children receiving lower quality care.

Psychostimulants are the most widely used class of medication for the management of ADHD related symptoms. Approximately 70 to 80 percent of children with ADHD respond positively to psychostimulant medications.[26] Significant academic improvement is shown by students who take these medications*: increases in* attention and concentration, compliance and effort on tasks, as well as amount and accuracy of schoolwork, plus *decreased* activity levels, impulsivity, negative behaviors in social interactions and physical and

verbal hostility.[27,28] A new, nonstimulant medication—atomoxetine--appears to have similar effects as the stimulants.

Other medications that may decrease impulsivity, hyperactivity and aggression include some antidepressants and antihypertensives. However, each family must weigh the pros and cons of taking medication (see *What We Know #3*, "Managing Medication for Children and Adolescents with ADHD").

Behavioral interventions are also a major component of treatment for children who have ADHD. Important strategies include being consistent and using positive reinforcement, and teaching problem-solving, communication, and self-advocacy skills. Children, especially teenagers, should be actively involved as respected members of the school planning and treatment teams (see *What We Know #7*, "Psychosocial Treatment for Children and Adolescents with ADHD").

School success may require a variety of classroom accommodations and behavioral interventions. Most children with ADHD can be taught in the regular classroom with minor adjustments to the environment. Some children may require special education services if an educational need is indicated. These services may be provided within the regular education classroom or may require a special placement outside of the regular classroom that meets the child's unique learning needs (see *What We Know #4* "Educational Rights for Children with ADHD").

Adults with ADHD may benefit from learning to structure their environment. In addition, medications effective for childhood ADHD are also helpful for adults who have ADHD. While little research has been done on interventions for adults, diagnosis and treatment are still important.

SUMMARY

Although the symptoms of ADHD—inattention, impulsivity and hyperactivity—are present to some extent in most children, when these symptoms are developmentally extreme, pervasive and persistent a diagnosis of ADHD is warranted. This diagnostic category is associated with significant impairment in family relations, peer interactions, school achievement, and risk for accidental injury, which are domains of crucial importance for healthy and successful development. Because ADHD can become a lifelong disorder, careful diagnosis and treatment are essential. CHADD is seeking out solutions that will lead to improved quality of life for children, adolescents and adults.

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www.help4adhd.org

Please also visit the CHADD Web site at
www.chadd.org

WHAT WE KNOW

Parenting a Child with ADHD

Often, when a child is diagnosed with ADHD, the first response from his or her concerned parent is, "What can *I do* about it?" Although life with your child may at times seem challenging, it is important to remember that children with ADHD can and do succeed. As a parent, you can help create home and school environments that improve your child's chances for success. The earlier you address your child's problems, the more likely you will be able to prevent school and social failure and associated problems such as underachievement and poor self-esteem that may lead to delinquency or drug and alcohol abuse.

Early intervention holds the key to positive outcomes for your child. Here are some ways to get started:

- **Don't waste limited emotional energy on self-blame.** ADHD is the result of dysfunction in certain areas of the brain and in the majority of cases is inherited. It is *not* caused by poor parenting or a chaotic home environment, although the home environment can make the symptoms of ADHD worse.
- **Learn all you can about ADHD.** There is a great deal of information available on the diagnosis and treatment of ADHD. It is up to you to act as a good consumer and *learn* to distinguish the "accurate" information from the "inaccurate." But how can you sort out what will be useful and what will not? In general, it is good to be wary about ads claiming to cure ADHD. Currently, there is no cure for ADHD, but you can take positive steps to decrease its impact.

- **Make sure your child has a comprehensive assessment.** To complete the diagnostic process, make sure your child has a comprehensive assessment that includes medical, educational, and psychological evaluations and that other disorders that either mimic or commonly occur with ADHD have been considered and ruled out.

Multimodal treatment for children and adolescents with ADHD consists of:

- Parent and child education about diagnosis and treatment;
- Behavior management techniques;
- Medication; and
- School programming and supports.

Treatment should be tailored to the unique needs of each child and family.

HOW TO ENSURE YOUR CHILD'S SUCCESS AT SCHOOL

- **Become an effective case manager.** Keep a record of all information about your child. This includes copies of all evaluations and documents from any meetings concerning your child. You might also include information about ADHD, a record of your child's prior treatments and placements, and contact information for the professionals who have worked with your child.
- **Take an active role in forming a team that understands ADHD and wants to help your child.** Meetings at your child's school should be attended by the principal's designee, as well as a special educator and a classroom teacher that knows your child. You, however, have the right to request input at these meetings from others that understand ADHD or your child's special needs. These include your child's physician, the school psychologist, and the nurse or guidance counselor from your child's school. If you have consulted other professionals, such as a psychiatrist, educational advocate or behavior management specialist, the useful information they have provided should also be made available at these meetings. A thorough understanding of your child's strengths and weaknesses and how ADHD affects him will help you and members of this team go on to develop an appropriate and effective program that takes into account his or her ADHD.
- **Learn the tools of successful behavior management.** Parent training will teach you strategies to change behaviors and improve your relationship with your child. Identify parent training classes in your community through CHADD's Parent to Parent Family Training on ADHD (http://www.chadd.org/parent2parent) or the Parent Technical Assistance Center Network (http://www.parentcenternetwork.org/).
- **Become your child's best advocate.** You may have to represent or protect your child's best interest in school situations, both academic and behavioral. Become an active part of the team that determines what services and placements your child receives in an Individualized Education Plan (IEP) or Section 504 plan. See CHADD fact sheet #4, "Educational Rights for Children with ADHD," for more information.

"The more knowledge you have about your child's rights under two education laws—IDEA and Section 504—the better the chance that you will maximize his or her success."

HOW TO MAKE LIFE AT HOME EASIER

- **Join a support group.** Parents will find additional information, as well as support, by attending local CHADD meetings where available. You can find the nearest chapter to your home on http://www.chadd.org chapter locator.
- **Seek professional help.** Ask for help from professionals, particularly if you are feeling depressed, frustrated and exhausted. Helping yourself feel less stressed will benefit your child as well.
- **Work together to support your child.** It is important that all of the adults that care for your child (parents, grandparents, relatives, and babysitters) agree on how to approach or handle your child's

problem behaviors. Working with a professional, if needed, can help you better understand how to work together to support your child.

- **Learn the tools of successful behavior management.** Parent training will teach you strategies to change behaviors and improve your relationship with your child. Identify parent training classes in your community through your local parent information and resource center (http://www.federalresourcecenter.org/frc/TAGuide/welcome.htm) or parent training and information center (http://www.taalliance.org/centers).
- **Find out if you have ADHD.** Since ADHD is generally inherited, many parents of children with ADHD often discover that they have ADHD when their child is diagnosed. Parents with ADHD may need the same types of evaluation and treatment that they seek for their children in order to function at their best. ADHD in the parent may make the home more chaotic and affect parenting skills.

PARENT TRAINING WILL HELP YOU LEARN TO:

- **Focus on certain behaviors and provide clear, consistent expectations, directions and limits.** Children with ADHD need to know exactly what others expect from them. They do not perform well in ambiguous situations that don't specify exactly what is expected and that require they read between the lines.

"Many children with ADHD have strengths in certain areas such as art, athletics, computers or mechanical ability. Build upon these strengths."

Working with a professional can help you narrow the focus to a few specific behaviors and help you set limits, and consistently follow through.

- **Set up an effective discipline system.** Parents should learn proactive—not reactive—discipline methods that teach and reward appropriate behavior and respond to misbehavior with alternatives such as "time out" or loss of privileges.
- **Help your child learn from his or her mistakes.** At times, negative consequences will arise naturally out of a child's behavior. However, children with ADHD have difficulty making the connection between their behaviors and these consequences. Parents can help their child with ADHD make these connections and learn from his or her mistakes.

HOW TO BOOST YOUR CHILD'S CONFIDENCE

- **Tell your child that you love and support him or her unconditionally.** There will be days when you may not believe this yourself. Those will be the days when it is even more important that you acknowledge the difficulties your child faces on a daily basis, and express your love. Let your child know that you will get through the smooth and rough times together.
- **Assist your child with social skills.** Children with ADHD may be rejected by peers because of hyperactive, impulsive or aggressive behaviors. Parent training can help you learn how to assist your child in making friends and learning to work cooperatively with others.
- **Identify your child's strengths.** Many children with ADHD have strengths in certain areas such as art, athletics, computers or mechanical ability. Build upon these strengths, so that your child will have a sense of pride and accomplishment. Make sure that your child has the opportunity to be successful while pursuing these activities and that his strengths are not undermined by untreated ADHD. Also, avoid, as much as possible, targeting these activities as contingencies for good behavior or withholding them, as a form of punishment, when your child with ADHD misbehaves.
- **Set aside a daily "special time" for your child.** Constant negative feedback can erode a child's self-esteem. A "special time," whether it's an outing, playing games, or just time spent in positive interaction, can help fortify your child against assaults to self-worth.

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For further information about ADHD or CHADD, please contact:

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Please also visit the CHADD Web site at **www.chadd.org**.

National Resource Center on AD|HD
A program of CHADD

WHAT WE KNOW

Managing Medication for Children and Adolescents with ADHD*

Individuals with attention-deficit/hyperactivity disorder (ADHD) experience chronic problems with inattention and/or hyperactivity-impulsivity to a greater degree than the average person. It is a lifespan disorder, affecting children, adolescents and adults.

Attention-deficit/hyperactivity disorder (ADHD) is a common neurobiological condition affecting 5-8 percent of school age children.[1,2,3,4,5,6,7] with symptoms persisting into adulthood in as many as 60 percent of cases (i.e. approximately 4% of adults).[8,9] While it has long been thought that boys with ADHD outnumber girls by approximately 3 to 1, recent research shows that the actual numbers may be nearly equal.

Although some media coverage questions the validity of the ADHD diagnosis, medical professional groups such as the American Academy of Pediatrics (AAP), American Academy of Child and Adolescent Psychiatry (AACAP), and American Medical Association (AMA) have recognized the strong scientific evidence for this disorder. "ADHD is one of the best-researched disorders in psychiatry, and the overall data on its validity are far more compelling than

* This fact sheet should be read together with *What We Know #7: Psychosocial Treatment for Children and Adolescents with ADHD.*

for most mental disorders and even many medical conditions," according to the American Medical Association Council on Scientific Affairs.[10]

Multiple studies have been conducted to discover the cause of the disorder. The exact causes of ADHD remain elusive, but research indicates that at least three separate yet interactive brain regions have been associated with the condition. Research also clearly indicates that ADHD tends to run in families. More than 20 genetic studies have shown evidence that the disorder is largely an inherited, neurologically-based condition. ADHD is a complex trait, and complex traits are typically the result of multiple interacting genes. Problems in parenting or life situations may make ADHD better or worse, but they do not cause the disorder.

"…the Multimodal Treatment Study of Children with ADHD showed that children who were treated with medication alone...and children who received both medication management and behavioral treatment had the best outcomes."

Without early identification and appropriate treatment, ADHD can have serious consequences that include school failure and drop out, depression, conduct disorder, failed relationships, underachievement in the workplace, and substance abuse. When appropriately treated, persons with ADHD can lead productive and satisfying lives.

DIAGNOSIS OF ADHD

Determining if a child has ADHD is a multifaceted process. Many biological and psychological problems can contribute to symptoms similar to those exhibited by children with ADHD. For example, anxiety, depression, and certain types of learning disabilities may cause similar symptoms.

There is no single test to diagnose ADHD. Therefore, a comprehensive evaluation is necessary to establish a diagnosis, rule out other causes, and determine the presence or absence of co-existing conditions. Such an evaluation requires time and effort and should include a clinical assessment of the individual's academic, social and emotional functioning, and developmental level. A careful history should be taken from the parents, teachers and the child, when appropriate. Checklists for rating ADHD symptoms and ruling out other disabilities are often used by clinicians.

There are several types of professionals who can diagnose ADHD, including school psychologists, private psychologists, clinical social workers, nurse practitioners, neurologists, psychiatrists, pediatricians, and other medical doctors. Regardless of who does the evaluation, the use of the Diagnostic and Statistical Manual of Mental Disorders (DSM) diagnostic criteria for ADHD is necessary. An exam by a medical professional is also important and should include a thorough physical examination, including an assessment of hearing and vision, to rule out other medical problems that may be causing symptoms similar to ADHD. In rare cases, persons with ADHD may have a thyroid dysfunction.

TREATMENT FOR ADHD

Getting appropriate treatment for ADHD is very important. There may be very serious negative consequences for persons with ADHD who do not receive adequate treatment. These consequences can include low self esteem, social and academic failure, substance abuse, and a possible increase in the risk of antisocial and criminal behavior.

Treating ADHD in children requires medical, educational, behavioral and psychological interventions. This comprehensive approach to treatment is called "multimodal" and consists of parent and child education about diagnosis and treatment, behavior management techniques, medication, and school programming and supports. Treatment should be tailored to the unique needs of each child and family.

Behavior interventions are often a major component for children who have ADHD. Important strategies include being consistent, using positive reinforcement, and teaching problem-solving, communication and self-advocacy skills. Children, especially teenagers, should be actively involved as respected members of the school planning and treatment teams. *What We Know #7: Psychosocial Treatment for Children and Adolescents*

with ADHD, provides more detailed information about psychosocial treatments that have been found helpful for ADHD.

School success may require a range of interventions. Many children with ADHD can be taught in the regular classroom with minor adjustments to the environment. Some children will require additional assistance using special education services. This service may be provided within the regular education classroom or may require a special placement outside of the regular classroom that fits the child's unique learning needs.

The National Institute of Mental Health conducted a major research study, called the Multimodal Treatment Study of Children with ADHD, involving 579 children with ADHD-combined type. Each child received one of four possible treatments over a 14-month period—medication management, behavioral treatment, combination of the two, or usual community care. The results of this landmark study showed that children who were treated with medication alone, which was carefully managed and individually tailored, and children who received both medication management and behavioral treatment had the best outcomes with respect to improvement of ADHD symptoms.[11,12]

Combination treatment provided the best results in terms of the proportion of children showing excellent response regarding ADHD and oppositional symptoms and in other areas of functioning (e.g., parenting, academic outcomes).[13] Overall, those who received closely monitored medical management had greater improvement in their ADHD symptoms than children who received either intensive behavioral treatment without medication or community care with less carefully monitored medication.

For more information on evaluating treatments, please read *What We Know #6: Complementary and Alternative Treatments.* This fact sheet provides checklists for spotting unproven remedies and evaluating media reports on treatments.

THE ROLE OF MEDICATION

For most children with ADHD, medication is an integral part of treatment. It is not used to control behavior. Medication, which can only be prescribed by certain medical professionals if needed, is used to improve the symptoms of ADHD so that the individual can function more effectively. Research shows that children and adults who take medication for symptoms of ADHD usually attribute their successes to themselves, not to the medication.

PSYCHOSTIMULANT MEDICATIONS

Psychostimulant compounds are the most widely used medications for the management of ADHD symptoms. Psychostimulant medications were first administered to children with behavior and learning problems in 1937. Despite their name, these medications do not work by increasing stimulation of the person. Rather, they help important networks of nerve cells in the brain to communicate more effectively with each other. Between 70-80 percent of children with ADHD respond positively to these medications. For some, the benefits are extraordinary; for others, medication is quite helpful; and for others, the results are more modest. Attention span, impulsivity, and on-task behavior often improve, especially in structured environments. Some children also demonstrate improvements in frustration tolerance, compliance, and even handwriting. Relationships with parents, peers and teachers may also improve.

Medication does not cure ADHD; when effective, it alleviates ADHD symptoms during the time it is active. Thus it is not like an antibiotic that may cure a bacterial infection, but more like eyeglasses that help to improve vision only during the time the eyeglasses are actually worn. After reviewing the scientific evidence, the AMA reported that "pharmacotherapy, particularly stimulants, has been extensively studied. Medication alone generally provides significant short-term symptomatic and academic improvement" and "the risk-benefit ratio of stimulant treatment in ADHD must be evaluated and monitored on an ongoing basis in each case, but in general is highly favorable."[14]

Common psychostimulant medications used in the treatment of ADHD include methylphenidate (Ritalin, Concerta, Metadate, Focalin), mixed salts of a single-entity amphetamine product (Adderall, Adderall XR), and dextroamphetamine (Dexedrine, Dextrostat). Methylphenidate, amphetamine, and mixed salts of amphetamine are now available as both short- and long-acting preparations. Short-acting preparations generally last approximately 4 hours; long-acting preparations are more variable in duration—with some preparations lasting 6-8 hours, and newer preparations lasting 10-12 hours. Of course, there can be wide individual variation that cannot be predicted and will only become evident once the medication is tried.

Methamphetamine hydrochloride (brand name Desoxyn) is a central nervous stimulant and is also approved by the FDA for the treatment of ADHD. Because it can be abused or lead to dependence, it is classified as a controlled substance. This medication is not commonly prescribed, except in rare circumstances.

The specific dose and timing of medication must be determined for each individual. However, there are no consistent relationships between height, age and clinical response to a medication. A medication trial is often used to determine the most beneficial dosage. The trial usually begins with a low dose that is gradually increased at 3-7 day intervals until clinical benefits are achieved. It is common for the dosage to be raised several times during the trial.

In addition, the individual is monitored both on and off the medication. For children, observations are collected from parents and teachers, even coaches and tutors, and parent and teacher rating scales are often used. In all cases, the appropriate dose must be tailored to the individual patient and monitored by the prescribing medical professional to make any needed adjustments.

Since effective longer-acting formulations of stimulants have become available in recent years, many children, adolescents and adults have found these preferable. Longer-acting medications may cause fewer "ups and downs" over the day and may eliminate the need for taking additional doses at school or during work. Although there is little research on utilizing short-acting and long-acting medications together, many individuals, especially teenagers and adults, find that they may need to supplement a longer-acting medication taken in the morning with a shorter-acting dose taken in mid to late afternoon. The "booster" dose may provide better coverage for doing homework or other late afternoon or evening activities and may also reduce problems of "rebound" when the earlier dose wears off.

Hundreds of controlled studies involving more than 6,000 children, adolescents and adults have been conducted to determine the effects of psychostimulant medications—far more research evidence than is available for virtually any other medication. There are no studies on the use of psychostimulant medications for more than a few years, but many individuals have been taking these medications for many years without adverse effects. Longer term controlled studies cannot be done because withholding treatment over many years from some patients suffering significant impairments, which is required in a controlled study, would be unethical.

Each family must weigh the pros and cons of choosing medication as part of the treatment plan for ADHD.

NONSTIMULANT MEDICATIONS

Although stimulants are the best tested and most widely used medications for the treatment of ADHD, some children, adolescents and adults respond just as well or better to treatment with other medications that are not stimulants. Nonstimulants may be used when contraindications to psychostimulant medications exist, psychostimulant medications have been ineffective, unacceptable side effects have resulted, or the individual or child's parents prefer a nonstimulant for other reasons.

In November 2002, the Food and Drug Administration (FDA) approved a new medication called atomoxetine (Strattera) specifically for ADHD. This medication is neither a stimulant nor an antidepressant. It alleviates inattention and hyperactivity/impulsivity symptoms of ADHD by affecting specific aspects of the norepinephrine system. Atomoxetine has been tested on more than 1,600 children, adolescents and adults. It is a prescription medication, but it is not a controlled substance like a stimulant. This allows medical professionals to give samples and to place refills on the prescriptions. It does not start working as quickly as the stimulants do. Reports suggest that the full effects are often not seen until the person has been taking atomoxetine regularly for 3 or 4 weeks.

Medications initially developed as antidepressants are used less frequently for ADHD but have been shown to be effective. Antidepressants that have active effects on the neurotransmitters norepinephrine and dopamine—i.e. the tricyclics and novel medications like bupropion — can have a positive effect on ADHD symptoms. Antidepressants that only affect the serotonin system—i.e. serotonin selective reuptake inhibitors (SSRIs), such as fluoxetine (Prozac), sertraline (Zoloft), and citalopram (Celexa)—have not been shown to be effective for treating primary symptoms of ADHD but may be effective against co-existing conditions. Clonidine (Catapres) and guanfacine (Tenex) are sometimes prescribed to reduce excessive hyperactivity or severe insomnia in children with ADHD, though these medications have not been shown to be effective for alleviating inattention problems.

POSSIBLE SIDE EFFECTS OF MEDICATIONS FOR ADHD

Most immediate side effects related to these medications are mild and typically short-term. The most common side effects are reduction in appetite and difficulty sleeping. Some children experience "stimulant rebound," a brief period of negative mood, fatigue, or increased activity when the medication is wearing off. These side effects are usually managed by changing the dose and scheduling for short-acting medications, or by changing to a prolonged-release formulation. Headache and stomachache are occasionally seen; these often disappear with time or, if necessary, a dose reduction. There may be an initial, slight effect on height and weight gain, but studies suggest that ultimate height and weight are rarely affected. For any questions about possible side effects, consult a physician or other medical professional.

Parents sometimes report that medication that had previously worked during childhood no longer works once the child reaches adolescence. Often this problem can be alleviated by dose adjustment or switching to another medication. Adolescence is not usually the time to give up on medical management for ADHD if it was helpful in past years. If such problems occur with your adolescent, discuss your observations and concerns with your medical doctor. A few studies suggest that some children with ADHD reach puberty later than their peers, but this does not appear to be a result of medication treatment.

A relatively uncommon side effect of psychostimulant medications is the unmasking of latent tics—the medical term for involuntary motor movements, such as eye blinking, shrugging and clearing of the throat. Psychostimulant medications can facilitate the emergence of a tic disorder in susceptible individuals. Often, but not always, the tic will disappear when the medication is stopped. For many youth with ADHD, vocal tics (throat clearing, sniffing, or coughing beyond what is normal) or motor tics (blinking, facial grimacing, shrugging, or head-turning) will occur as a time-limited phenomenon. The medications may bring them to notice earlier, or make them more prominent than they would be without medication, but they often eventually go away, even while the individual is still on medication.

Tourette's syndrome is a chronic tic disorder that involves vocal and motor tics. Experts estimate that 7 percent of children with ADHD have tics or Tourette's syndrome that is often mild but can have social impact in the severe but rare form, while 60 percent of children with Tourette's have ADHD. Recent research suggests that the development of Tourette's syndrome in children with ADHD is not related to psychostimulant medication. However, a cautious approach to treatment is recommended when there is a family history of tics or Tourette's syndrome, as certain patients will experience worsening of their tics with stimulant treatment. In these cases, treatment with nonstimulant medications may be considered as an alternative.

STARTING MEDICATION

Each person considering medication treatment for ADHD should first have a careful, comprehensive assessment to clarify the diagnosis, identify other medical, psychological or learning problems that may be present with ADHD, and learn about ADHD. After the diagnosis has been made, a treatment plan should be developed in consultation with the physician or other medical professional. In this planning session, the patient, family and medical professional can work together to consider the various options for treatment. If medication is going to be used, the medical professional will prescribe a specific medication.

The medication trial should be monitored very carefully, especially in the early weeks of treatment, so needed adjustments can be made to dose and timing. If the first medication tried is not helpful or produces unpleasant side effects, the prescribing professional will probably make adjustments. If the adjustments are not sufficient to bring a good response, another medication option can be tried. Most persons with ADHD respond well to any of the frequently used medications for ADHD. Some respond much better to one than another. If the first medication tried does not produce a satisfactory response, it is usually wise to try a different type of ADHD medication. Ultimately, success with treatment depends on a collaborative effort between the patient and a committed team of caregivers. Medication can help the complete multimodal treatment program be more effective. Medication treatment without monitoring, appropriate education about ADHD, and other appropriate treatment interventions is often not enough to help.

FREQUENTLY ASKED QUESTIONS

Q. How long does it take to achieve a therapeutic dose of medication?

A. The effects of psychostimulant medications are usually noticeable within 30-60 minutes once an appropriate dose for that individual has been found. However, determining the proper dosage and medication schedule for each individual often takes a few weeks. Nonstimulant medications often require several weeks before their full effects can be observed.

Q. As a child grows, will the dosage need to be changed?

A. Not necessarily. Many adolescents and adults continue to respond well to the same doses of psychostimulant medication. However, many others will require higher doses. On the other hand, some children may respond well initially to a low dose of medication and then require a modest dose increase after a few weeks or months once a "honeymoon period" has passed.

Q. Will my child need to take medication forever, even into adulthood?

A. Not necessarily. These medications can be stopped at any time. However, ADHD is a chronic condition. Its severity and developmental course are quite variable in duration and severity. Up to 60 percent of children with ADHD continue to exhibit problematic symptoms into adolescence and adulthood.[15,16] For these individuals, continuing effective treatment modalities, including medication, can be helpful.

Q. Should medication only be taken when the child is in school?

A. This should be decided with the prescribing medical professional and the therapeutic team. Children can often benefit from medication outside of school because it can help them succeed in social settings, peer relations, home environment, and with homework. Medication can be of help to children who participate in organized sports and activities that require sustained attention, such as musical programs, debate, or public speaking activities.

Q. What about individuals who do not respond to medication, either psychostimulants or antidepressants?

A. In general, two or three different stimulant medications should be tried before determining that this group of medications is not helpful. Similarly, several different antidepressant medications can also be tried. Most individuals will respond positively to one of these medication regimens. Some individuals, because of the severity of their disability or the presence of other conditions, will not respond. And some individuals will exhibit adverse side effects. In such cases, the entire treatment team—family, medical doctor, mental health professional, and educator—must work together to develop an effective intervention plan. Other medications such as clonidine may be helpful, and occasionally, combinations of medication may be needed. When all medication appears to be ineffective, consideration needs to be given to whether the diagnosis of ADHD is accurate, whether other conditions are affecting functioning, whether appropriate criteria for improvement have been established, and whether objective and accurate feedback is being provided regarding medication efficacy.

Q. Are children who take psychostimulant medications more likely to have substance abuse problems later in life?

"Individuals with ADHD who are not effectively treated with medication during childhood and adolescence have a greatly increased—though not inevitable—risk of developing significant alcohol or drug abuse problems later in life."

A. No. Multiple studies that have followed children with ADHD for 10 years or more support the conclusion that the clinical use of stimulant medications does not increase the risk of later substance abuse.[17] In fact, many studies have shown that individuals with ADHD who are not effectively treated with medication during childhood and adolescence have a greatly increased—though not inevitable—risk of developing significant alcohol or drug abuse problems later in life. When treated, the risk of later drug or alcohol problems is reduced to that of non-ADHD individuals.

Although there is potential for abuse when misused, psychostimulant medications do not cause addictions to develop in those being treated appropriately.

Unfortunately, research does show that children who demonstrate conduct disorders (delinquent behaviors) by age 10, and who are smoking cigarettes by age 12, are at higher risk for substance abuse in the teenage years, possibly persisting into mid-life. Therefore it is important to recognize this subgroup early and get them involved in an effective multimodal therapeutic program.

OVERVIEW OF MEDICATIONS OFTEN USED IN THE TREATMENT OF ADHD

This information is provided for educational purposes only. Discuss the specifics of any medication with your physician or medical professional. The names used below are the generic (chemical) names of the compounds, with names of common brands made by different pharmaceutical companies. It should be noted that a number of new medications for the treatment of ADHD are currently being researched and should be available in the near future.

METHYLPHENIDATE (RITALIN, METHYLIN)

Form: Short-acting tablets administered by mouth. Methylphenidate 5 mg, 10 mg, 20 mg.

Dosage: Very individual. Usually between 2.5–20 mg per dose. Effective dose does not necessarily correlate with age, body weight or severity of ADHD symptoms. Usually the dose starts off small and then is gradually increased to find the most effective dose that will not produce excessive adverse effects.

Duration of Action: Rapid-acting methylphenidate starts to work in 15–20 minutes. Lasts about 3.5–4 hours. Because of its relatively short action, this form of methylphenidate wears off at night and is started again when taken in the morning. Research suggests that short-acting methylphenidate works best for most persons when taken 3 times daily.

Possible Side Effects: Moderate appetite suppression, mild sleep disturbances, transient weight loss, and irritability. "Rebound effect" can occur—anger, frustration or sadness—for a period of about 1 hour when the effect of medication wears off. When the dosage is too high, motor tics may be unmasked, or agitation, depression or lethargy may occur until the dose wears off. These are usually managed by lowering the dose. Tics will usually disappear if the dose is lowered.

EXTENDED DELIVERY FORMS OF METHYLPHENIDATE

To avoid the need for taking short-acting methylphenidate 3–4 times daily, several new long-acting delivery systems have been developed. Each of the systems described below delivers the same medicine used in short-acting methylphenidate tablets, but does so in a way designed to give extended coverage so a child can get through a school day without having to take pills at school.

Concerta, a new osmotic release system for methylphenidate was approved by the FDA in September 2000. This capsule contains three chambers, two filled with different concentrations of methylphenidate and one with a polymer substance that expands when a liquid comes in contact with it. An initial dose of methylphenidate is released from the outer coating soon after the capsule is ingested. As the polymer substance expands in response to liquids absorbed from the digestive tract, it gradually pushes the medication in the two internal chambers out of the capsule, like a piston, through a laser-drilled hole in one end of the capsule. Concerta delivers methylphenidate in an ascending profile. This means that an 18 mg caplet provides 4 mg methylphenidate initially and delivers the rest of the methylphenidate over the course of the day. An 18 mg caplet of Concerta is equivalent to 5 mg of Ritalin given 3 times per day. Concerta is designed to be effective for about 10–12 hours from ingestion, but individual results may vary. Concerta capsules should not be opened or chewed.

Form: 18 mg, 27 mg, 36 mg, 54 mg capsules. (Each 18 mg is equivalent to about 5 mg of short-acting methylphenidate given 3 times over the day.)

Metadate-CD, an extended delivery capsule, was approved by the FDA in April 2001. This capsule contains many tiny beads containing methylphenidate. Beads have various types of coatings so they can release 30% of the methylphenidate dose immediately and then continue to release methylphenidate over an extended period of time designed to cover a school day. Typically, Metadate-CD provides about 8 hours of coverage. These capsules should not be chewed, but the capsules can be opened and sprinkled at the direction of a prescribing medical professional.

Form: 20 mg CD capsule

Ritalin LA, another extended delivery capsule form of methylphenidate. It also consists of two types of tiny beads in a capsule, but is unique in that the amount of methylphenidate released immediately is the same as the amount released 4 hours after the dose. Therefore, Ritalin LA delivers 50% of its methylphenidate initially and 50% approximately 4 hours later. This delivery system mimics Ritalin given twice a day, thus giving approximately 8 hours worth of coverage.

Form: 20 mg, 30 mg, 40 mg capsules.

Methylphenidate SR 20 (methylphenidate sustained release) and Ritalin SR 20, this earliest form of extended release methylphenidate uses a wax matrix to deliver two doses from one pill. An SR 20 tablet releases about 10 mg of methylphenidate within about 1 hour after ingestion and then releases another 10 mg about 3.5 hours later. It is intended to last 6–8 hours. Clinicians report that this preparation works well for some individuals, but is unsatisfactory for many others because it may release too quickly or unevenly. The dosage is prescribed on an individualized basis. Possible side effects are the same as methylphenidate.

Form: 20 mg tablets.

Metadate ER, Methylin ER: similar to the Ritalin SR tablet.

Form: 10 mg, 20 mg tablets.

MIXED SALTS OF A SINGLE-ENTITY AMPHETAMINE PRODUCT (ADDERALL)

Form: Double-scored tablets administered by mouth. 5 mg, 7.5 mg, 10 mg, 12.5 mg, 15 mg, 20 mg, 30 mg.

Dosage: Very individual.

Duration of Action: Variable. Depending on dose, can last 3.5–8 hours.

Possible Side Effects: Same as methylphenidate.

Adderall XR, extended release capsule was approved by the FDA for ADHD in 2001. Mixed salts of amphetamine used are contained in tiny beads within a capsule. About half of the beads release within an hour; the rest release about 3.5 hours later to provide coverage for approximately 10 hours.

Dosage: Very individual.

Form: Capsules administered by mouth. 5 mg, 10 mg, 15 mg, 20 mg, 25 mg, 30 mg.

Duration of Action: 10-12 hours.

Possible Side Effects: Same as methylphenidate.

DEXTROAMPHETAMINE (DEXEDRINE, DEXTROSTAT)

Form: Short-acting tablets administered by mouth. 5 mg, 10 mg tablets.

Dosage: Very individual. Average: 2.5–10 mg.

Duration of Action: Rapid onset of action, 20–30 minutes. Lasts about 4-5 hours.

Possible Side Effects: Same as methylphenidate.

Dextroamphetamine Spansules (Dexedrine), sustained release capsules. Each spansule releases about one-half of its face value dose in about 1 hour and then releases the balance about 3.5 hours later. Thus a 5 mg spansule actually releases 2.5 mg initially and 2.5 mg later. It does not provide the equivalent of 5 mg throughout the duration of its action.

Form: Long-acting, administered by mouth. Dextroamphetamine spansules 5 mg, 10 mg, 15 mg.

Dosage: Very individual. Average: 5–20 mg.

Duration of Action: Very individual. Usually lasts 6–8 hours, but individual reaction may vary from several hours to the whole day.

Possible Side Effects: Same as methylphenidate.

SELECTIVE NOREPINEPHRINE REUPTAKE INHIBITORS

Atomoxetine (Strattera) was approved in November 2002 by the FDA for the treatment of ADHD. Atomoxetine acts as a highly specific reuptake inhibitor for norepinephrine and seems to have little effect on other neurotransmitters.

Form: Capsules administered by mouth. 10 mg, 18 mg, 25 mg, 40 mg, 60 mg.

Dosage: Recommended to initiate dose at 0.5 mg/kg/day and titrate to 1.2 mg/kg/day.

Duration of Action: Most patients appear to achieve 24-hour coverage from dosing 1–2 times a day.

Effect: Lower doses may improve ADHD symptoms within several days, but may take 1–3 weeks for full effect. Higher doses may improve depressive symptoms and mood swings.

Possible Side Effects: Nervousness, sleep problems, fatigue, stomach upset, dizziness, and dry mouth. May lead in rare cases to severe liver injury resulting in liver failure if not stopped immediately on finding any liver effects (itching, dark urine, jaundice, right upper quadrant tenderness or unexplained "flu-like" symptoms).

NORTRIPTYLINE (VARIOUS BRANDS), IMIPRAMINE (TOFRANIL), DESIPRAMINE (NORPRAMIN)

Form: Tablets administered by mouth. 10 mg, 25 mg, 50 mg, 100 mg.

Dosage: Very individual.

Duration of Action: Variable. Often has 24-hour effect.

Effect: Lower doses may improve ADHD symptoms within several days, but may take 1–3 weeks for full effect. Higher doses may improve depressive symptoms and mood swings.

Possible Side Effects: Nervousness, sleep problems, fatigue, stomach upset, dizziness, dry mouth, and accelerated heart rate. May affect conduction time of the heart, leading to irregular heart rate. In rare cases, may affect blood count. Should not be abruptly discontinued. Desipramine has been associated with deaths from cardiac problems. Most medical professionals do not use this medication with prepubescent children.

BUPROPION (WELLBUTRIN)

Bupropion is approved by the FDA for the treatment of depression in adults and for nicotine cessation treatment. It is not approved for ADHD.

Form: 75 mg, 100 mg tablets. 100 mg, 150 mg extended release.

Dosage: Very individual.

Duration of Action: About 4-6 hours in short-acting form; 6-8 hours in long-acting form.

Effect: Improves symptoms of ADHD and can affect depressive moods.

Possible Side Effects: Difficulty sleeping and headache.

ANTIHYPERTENSIVE AGENTS

Clonidine (Catapres)

Form: Clonidine is available in patches applied to back of shoulder or tablets administered by mouth. 0.1 mg, 0.2 mg, 0.3 mg.

Dosage: Very individual. The clonidine patch is available in three strengths.

Duration of Action: Patches last 5-6 days. Tablets last 4-6 hours.

Effect: Often will improve excessive hyperactivity or insomnia associated with ADHD, but has not been demonstrated effective for improving inattention symptoms. May decrease facial and vocal tics in Tourette's syndrome. Often has positive side effect on oppositional defiant behavior and may be beneficial for management of excessive anger.

Possible Side Effects: Major side effect is fatigue, though this will usually disappear over time. Other side effects may include dizziness, dry mouth, increased activity, irritability, or behavior problems. Overdose may cause excessive sedation or other serious problems. Should not be stopped suddenly. A medical professional should be consulted prior to discontinuation of medication to prevent "rebound hypertension" or other effects.

Guanfacine (Tenex)

Form: Tenex is available in 1 mg tablets taken by mouth.

Dosage: Very individual.

Duration of Action: Guanfacine lasts 6-8 hours.

Effect: Often will improve excessive hyperactivity or insomnia associated with ADHD, but has not been demonstrated effective for improving inattention symptoms. May decrease facial and vocal tics in Tourette's syndrome. Often has positive side effect on oppositional defiant behavior and may be beneficial for management of excessive anger.

Possible Side Effects: Major side effect is fatigue, though this will usually disappear over time. Other side effects may include dizziness, dry mouth, increased activity, irritability, or behavior problems. A medical professional should be consulted prior to discontinuation of medication to prevent "rebound hypertension" or other effects.

Extended Delivery Form of Guanfacine (Intuniv)

Form: Intuniv is available in 1mg, 2 mg, 3mg, and 4 mg tablets taken by mouth.

Dosage: Very Individual

Duration of Action: 12 ? 24 hours

Effect: Often helps treat symptoms associated with ADHD in children. It is not known if extended delivery guanfacine is effective for adults or children under 6, or if it is safe for children under 6.

Possible side effects: Side effects include low blood pressure, low heart rate, fainting, sleepiness, tiredness, drowsiness, stomach pain, dry mouth, dizziness, decreased appetite, and irritability. Consult with a medical professional if side effects are severe or persistent; do not discontinue medication without consulting a medical professional.

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For further information about ADHD or CHADD, please contact:

National Resource Center on ADHD
Children and Adults with
Attention-Deficit/Hyperactivity Disorder
8181 Professional Place, Suite 150
Landover, MD 20785
800-233-4050
www.help4adhd.org

Please also visit the CHADD Web site at **www.chadd.org**.

National Resource Center on AD|HD
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Medications Used in the Treatment of ADHD

Generic Name	Brand Names	Duration	Form	Dosage Range	Common Side Effects
Stimulants					
Methylphenidate *Immediate release*	Methylin Ritalin	3-4 hours	tablets	5 mg 10 mg 20 mg	Moderate appetite suppression, mild sleep disturbances, transient weight loss, irritability, emergence of tics.
	Methylin Chewables	3-4 hours	tablets	2.5 mg 5 mg 10 mg	
	Methylin Solution	3-4 hours	liquid solution	5 mg/5ml 10 mg/5ml	
Extended release	Metadate ER Methylin ER	6-8 hours	tablets	10 mg 20 mg	Moderate appetite suppression, mild sleep disturbances, transient weight loss, irritability, emergence of tics.
	Metadate CD	8-10 hours	capsules	10 mg 20 mg 30 mg	
	Ritalin LA	8-10 hours	capsules	10 mg 20 mg 30 mg 40 mg	
	Concerta	10-12	tablet	18 mg 27 mg 36 mg 54 mg	
Transdermal Patch	Daytrana	10-12 hours (9 hours applied + up to three hours after removal)	transdermal patch	10 mg 15 mg 20mg 30mg	Moderate appetite suppression, mild sleep disturbances, transient weight loss, irritability, emergence of tics, skin irritation.
Methylphenidate SR *Sustained release*	Ritalin SR	4-8 hours	tablet	20 mg	Moderate appetite suppression, mild sleep disturbances, transient weight loss, irritability, emergence of tics.
Dexmethylphenidate SR	Focalin	4-6 hours	tablets	2.5 mg 5 mg 10 mg	Moderate appetite suppression, mild sleep disturbances, transient weight loss, irritability, emergence of tics.
Extended release	Focalin XR	6-10 hours	capsule	5 mg 10 mg 15 mg 20 mg 30 mg 40 mg	Moderate appetite suppression, mild sleep disturbances, transient weight loss, irritability, emergence of tics.

Dextroamphetamine *Short acting*	Dexedrine	4-6 hours	tablet	5 mg 10 mg	Moderate appetite suppression, mild sleep disturbances, transient weight loss, irritability, emergence of tics.
	ProCentra	4-6 hours	liquid	5 mg/5ml	
Intermediate acting	Dexedrine Spansule	6-8 hours	capsule	5 mg 10 mg 15 mg	Same as for short-acting dextroamphetamine
Lisdexamfetamine Dimesylate *Prodrug*	Vyvanse	10-12 hours	capsule	20 mg 50 mg 30 mg 60 mg 40 mg 70 mg	Moderate appetite suppression, mild sleep disturbances, transient weight loss, irritability, emergence of tics.
Mixed Amphetamine salts *Intermediate acting*	Adderall	4-6 hours	tablets	5 mg 7.5 mg 10 mg 12.5 mg 15 mg 20 mg 30 mg	Moderate appetite suppression, mild sleep disturbances, transient weight loss, irritability, emergence of tics.
Extended release	Adderall XR	8-12 hours	capsule	5 mg 10 mg 15 mg 20 mg 25 mg 30 mg	Moderate appetite suppression, mild sleep disturbances, transient weight loss, irritability, emergence of tics.
Nonstimulants					
Atomoxetine *Extended release*	Strattera	24 hours	capsule	10 mg 18 mg 25 mg 40 mg 60 mg 80 mg 100 mg	Nervousness, sleep problems, fatigue, upset stomach, dizziness, dry mouth. In rare cases, may lead to severe liver injury or possibly to suicidal ideation.
Atypical Antidepressants					
Bupropion	Wellbutrin	4-5 hours	tablets	75 mg 100 mg	Difficulty sleeping, headache, and in rare cases, seizures.
	Wellbutrin SR	12 hours	tablets	100 mg 150 mg 200 mg	
	Wellbutrin XL	24 hours	tablets	150 mg 300 mg	
Tricyclic Antidepressants					
Imipramine	Tofranil	8-24 hours	tablets	10 mg 25 mg 50 mg	Nervousness, sleep problems, fatigue, upset stomach, dizziness, dry mouth, accelerated heart rate, possible risk of cardiac arrhythmias.

Desipramine	Norpramin	8-24 hours	tablets	10 mg 25 mg 50 mg 75 mg 100 mg 150 mg	Has been associated with deaths from cardiac problems. Not recommended for children.
Nortriptyline	Aventyl Pamelor	8-24 hours	capsules	10 mg 25 mg 50 mg 75 mg	Nervousness, sleep problems, fatigue, upset stomach, dizziness, dry mouth, accelerated heart rate, possible risk of cardiac arrhythmias.
Antihypertensives					
Clonidine	Catapres	4-6 hours	tablets	0.1 mg 0.2 mg 0.3 mg	Fatigue, dizziness, dry mouth, increased activity, irritability, behavior problems, low blood pressure; abrupt discontinuation may lead to elevated blood pressure.
		24 hours	skin patch	0.1 mg/24 hrs 0.2 mg/24 hrs 0.3 mg/24 hrs	
Extended release	Kapvay	12-24 hours	tablets	0.1 mg 0.2 mg	
Guanfacine *Intermediate acting*	Tenex	6-8 hours	tablets	1 mg 2 mg	Fatigue, dizziness, dry mouth, increased activity, irritability, behavior problems, low blood pressure; abrupt discontinuation may lead to elevated blood pressure.
Extended release	Intuniv	12 - 24 hours	tablets	1 mg 2 mg 3 mg 4 mg	Fatigue, dizziness, dry mouth, increased activity, irritability, behavior problems, low blood pressure; abrupt discontinuation may lead to elevated blood pressure.

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4

WHAT WE KNOW

Educational Rights for Children with AD/HD in Public Schools

There are two federal laws that guarantee a free appropriate public education (FAPE) and provide services or accommodations to eligible students with disabilities in the U.S. They are:

1. Section 504 of the Rehabilitation Act of 1973 (called Section 504)
2. Individuals with Disabilities Educational Act[1] (called IDEA)

Section 504 and IDEA are the laws that provide special education, services and appropriate accommodations for eligible children with disabilities in the U.S. When state laws and federal laws are different, schools must follow the federal laws, unless the state law provides the child with more protection.

Both laws also say that children with disabilities must be educated—as much as possible—with children who do not have disabilities. But there are differences between Section 504 and IDEA. Parents, health professionals and teachers should know what each law offers so that they make the best choice for the child.

WHICH ONE IS RIGHT FOR MY CHILD?

There is no one "best" choice. Choosing between Section 504 and IDEA will depend on what the child needs and the degree of impairment.

For those students who will be able to learn with simple accommodations or only minor changes to her or his day, Section 504 is a good choice. Section 504

is faster and more flexible and is a good way for eligible students to get accommodations.

For students who may need a wider range of services or protections, IDEA may work better. IDEA also gives parents more rights and responsibilities to participate in their child's education. Children who do not qualify for IDEA may qualify for Section 504.

SECTION 504

Section 504 is a civil rights statute (a federal law) that states that schools cannot discriminate against children with disabilities. It says that schools must give ***eligible*** children with disabilities equal opportunity to participate in all academic and nonacademic services the school has to offer and give them accommodations based on their individual needs.

These accommodations are often simple changes that can help the child with her or his disability. Sometimes these accommodations include special services such as using a tape recorder for note taking, giving the student a quiet place to work, or access to a computer in school for written work.

"A student is eligible for Section 504 if the child has a physical or mental condition that substantially limits a 'major life activity.'"

WHO'S ELIGIBLE?

A student is eligible for Section 504 if the child has a physical or mental condition that substantially limits a "major life activity." Major life activities for a child in school include learning and/or behavior in addition to walking, talking, breathing, caring for oneself, etc. Children covered under Section 504 are usually children with less serious disabilities, or children who do not otherwise qualify for services under IDEA.

To qualify for Section 504, a child's disability must be serious enough, or "substantially limiting," that they need specialized services or accommodations.

WHAT DOES SECTION 504 PROVIDE?

If a child is eligible under Section 504, the school must develop a Section 504 plan that includes related services and/or appropriate accommodations. Many believe that a Section 504 plan is a standard checklist or form used for all eligible children; however, a Section 504 plan should be developed to meet the child's specific needs and not merely what the school district has available.

Accommodations should be documented in the Section 504 plan. Several examples of appropriate accommodations to help children with AD/HD cope with their disability include:

1. Reducing the number of homework problems without reducing the level or content of what is being taught.
2. Giving the student a quiet place to work or a place without many distractions.
3. Providing clear and simple directions for homework and in-class assignments.
4. Giving tests in a quiet place and/or providing extra time.
5. Using tape recorders or giving the student a copy of notes.
6. Using behavior management techniques, including positive reinforcement.
7. Having a nurse or administrator oversee a student's medication.
8. Meeting with the school counselor.
9. Creating a notebook so that parents and teachers may keep each other informed of the child's progress or difficulties.

EVALUATION

Section 504 requires a child to have an evaluation before receiving a 504 plan. An evaluation does not have to be formalized testing, but it must consider information from a ***variety*** of sources (parent notes, doctor's notes, test scores, observations, etc.). Decisions about who qualifies for Section 504 cannot be based solely on a single source of data (i.e. a doctor's diagnosis or grades). Once a 504 plan has been set, the child should be evaluated again before any significant changes are made. Depending on the procedures used by your individual school district parents may or may not have a right to active participation or decision-making.

IDEA

The Individuals with Disabilities Education Act (IDEA) is the law that provides special education and related services needed for the child to benefit from her or his education. An individualized education program, sometimes called an individualized education plan or IEP, is designed specifically for each eligible child with disabilities to provide a free appropriate public education (FAPE).

WHO'S ELIGIBLE?

A child is eligible for services under IDEA if he or she is diagnosed with a qualified disability and, "by reason thereof," needs special education and/*or* related services. A child may qualify if AD/HD seriously affects her or his learning and/or behavior at school. Some children with AD/HD will qualify for services under IDEA while others may not: this depends on the degree of impairment.

To qualify for IDEA, a child must meet the criteria of at least one of 13 disability categories. Often children with AD/HD will qualify under the Other Health Impairment (OHI) category. They may also qualify under Specific Learning Disabilities (SLD) or another relevant category.[2]

Eligibility for IDEA should be decided by a qualified team that is made up of many different professionals including the child's teacher(s), school psychologists, principals, parents and other appropriate school personnel. This team should use information from several different sources including input and ideas from parents, notes from doctors, notes and progress reports from teachers, the child's past academic and behavior records and test results (such as IQ and/or other formalized testing assessments) as well as anything else that might be important.

IDEA says that, as much as possible, services should be provided in a least restrictive environment therefore not all children who receive services under IDEA are placed in special education classrooms. Many stay in their regular classroom with appropriate modifications and/or related services.

WHAT DOES IDEA PROVIDE?

When a child with AD/HD qualifies under the Individuals with Disabilities Education Act, the child receives an individualized education program or IEP. The IEP is a written document that includes specific goals for the child based on her or his current level of performance. The IEP should state the educational placement, specifically which services will be granted, when they will be provided, how long they will last, how frequently they will occur, and the way in which the child's progress will be measured.

For a child whose behavior prevents her or his learning or the learning of other students in the class, the IEP team must consider the use of positive behavioral interventions and supports or other strategies to address the behavior.

Parents should participate in developing the IEP by making suggestions about what could help their child at school with classwork, homework and behavior problems. Parents or the school can ask for changes to the IEP. Changes may only be made if a meeting is held and the parents are at the meeting or if both the school and the parents agree to the changes and agree to skip the meeting.

"IDEA says that children with disabilities must be taught in the regular classroom as much as possible with appropriate, related aids and services."

IDEA says that children with disabilities must be taught in the regular classroom as much as possible with appropriate, related aids and services. Removal from the regular education environment should only occur when the severity of the disability is such that even with aids and services, the child or other students cannot learn. This is called the least restrictive environment (LRE) clause.

Students who have an IEP are also entitled to special procedures that must be followed if they are suspended or expelled. Even when suspended or expelled, children covered under IDEA are guaranteed a free appropriate public education (FAPE). Schools are allowed to suspend or expel any student, including a student with a disability, for up to 10 school days.

After 10 days, a hearing (called a manifestation determination) must be held for students with an IEP to see if their behavior was caused by or had a direct

and significant relationship to their disability or if the behavior was a direct result of the school's failure to implement the IEP.

It is important to note that any student who brings a weapon to school, who attempts to buy, sell, or carry illegal drugs on school property; or who causes serious injury to themselves or another student may be moved to an alternate placement. If it is determined that the behavior does have a link to the student's disability, then the student may be moved for up to 45 **school** days. If no link is found, then the student may be removed for the same number of days as a non-disabled student.

EVALUATION

A complete evaluation is required to see if a child is eligible for special education under IDEA. The school must have your written authorization (signature) before they can evaluate your child. Parents may refuse to have their child evaluated, but if they want their child evaluated parents must sign the form. IDEA also requires an eligible child to be evaluated again at least every three years unless parents and the school agree that it is not necessary. Parents do not have to pay for these evaluations. If parents do not agree with the evaluation performed by the school district, they *may* be entitled to have an independent evaluation conducted at no cost to them.

TIPS FOR WORKING WITH THE SCHOOL

Parents, schools and teachers must work together to make sure that children learn all they can. Communication between home and school is very important when a child needs extra help at school. CHADD suggests that parents who think their child might require services or accommodations do the following:

1. Meet with your child's teacher to share your concerns.
2. Ask teachers to write down the learning and/or behavior concerns your child has and to give you a photocopy of that list.
3. Request an evaluation of your child. You may ask at any time, but be sure to do it **in writing**. Make a written request even if you have already talked to a teacher or principal. Date the request and keep a photocopy for your records.
4. Take an active role in preparing the IEP or provide input for a Section 504 plan. Before you meet with the school, make a list of your child's problem areas and what you think might help your child.
5. Follow up each meeting with a letter documenting what took place. List the items you agree with and the items you disagree with and say why. Keep copies of these letters with your child's educational file.
6. Remember that the evaluation results are not final. You have the right to appeal the results. The school must tell you how to appeal.
7. Remember that parents and children are guaranteed certain rights under federal and state laws. Check with the school or your local CHADD support group to find someone in your community who can help answer your questions and help you to advocate for your child.
8. If you and the school disagree about what is best for your child and you cannot find common ground, then you may make a written request for mediation or a Due Process Hearing to help you get what you believe your child needs.

SAMPLE LETTER REQUESTING AN EVALUATION OF YOUR CHILD

[INSERT: date]

Dear [INSERT: Principal's name]

I am writing to request that my child, [INSERT: your child's full name and date of birth], be evaluated for special education services and/or accommodations granted under Section 504 and the Individuals with Disabilities Education Act (IDEA). I am concerned that [INSERT: child's name] is having difficulty and may need special help in order to learn.

For the last [INSERT: number of years] years [his/her] classroom teachers have noted that [he/she] has difficulty completing assignments, is experiencing problems with excessive impulsivity and/or is unable to sit still and stay focused. Please note that [INSERT: name of health care professional] has recently diagnosed my [son/daughter] as having Attention-Deficit/Hyperactivity Disorder

(AD/HD). [INSERT: name of health care professional] is concerned that [INSERT: child's name]'s AD/HD is resulting in decreased alertness in the classroom and may be significantly impacting [her/his] school performance, learning, and behavior. [NOTE: if your child does not have a diagnosis from a health care professional, you may still request an evaluation from the school. Simply skip this section or state that you, the parent, have concerns that your child is having attentional difficulties that you believe are impacting school performance, learning and/or behavior.]

I would like to meet with the people who will be doing the evaluation before my child is tested so that I may share information about [INSERT: child's name] with them. I understand that the evaluation is provided at no cost to me. I also understand that I must provide written permission for these tests to be administered and I will be happy to do so once I have received all the appropriate forms and an explanation of the process. I will also expect a copy of the written report generated by each evaluator so that I may review them before the IEP or 504 planning meeting.

I look forward to hearing from you at your earliest convenience so that we may begin preparations for the evaluation.

Sincerely,

[INSERT: your name, address and phone number]

MORE INFORMATION

IDEA Partnership www.ideapartnership.org

Parent Training and Information Centers www.taalliance.org/centers/index.htm

The Office of Special Education Programs www.ed.gov/about/offices/list/osers/osep/index.html

REFERENCES

1 Public Law 108-446, the Individuals with Disabilities Education Improvement Act 2004, was signed into law on December 3, 2004 as an amendment to the existing Individuals with Disabilities Act previously amended in 1997.

2 Students with AD/HD may also qualify under the Emotional Disturbance (ED) category of IDEA.

This What We Know sheet, designed to summarize various legal issues affecting the education of children with AD/HD, should not be construed as legal advice or a legal opinion on specific facts. Readers with particular questions should seek the assistance of their own legal counsel. Section 504 procedures may be different from state to state or district to district. To find out about district or state procedures, parents should contact their state department of education. For issues relating to Section 504, contact the Office of Civil Rights (OCR) by visiting www.ed.gov/about/offices/list/ocr/index.html.

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www.help4adhd.org

Please also visit the CHADD Web site at **www.chadd.org**.

Finding a Provider for Behavior Management with ADHD

What is a "behavioral" approach to working with ADHD?

Behavioral approaches to managing ADHD are one of the two methods of treatment that are currently considered "Well Established" treatments based on scientific research (The other is stimulant medication)[1]. Behavioral approaches may be implemented in the home environment and/or in the school environment. In general, behavioral approaches identify specific problem behaviors (e.g., bringing home assignments, noncompliance) that impact a child's functioning in school and/or at home. Once these behaviors are identified, specific strategies are developed to promote positive changes in these behaviors. In general, these strategies will involve changing aspects of the environment (e.g., sitting closer to the teacher, reducing distractions) and/or modifying the consequences of behavior (e.g., rewarding positive behaviors, time-out or loss of privileges for undesirable behaviors).

How does a behavioral approach differ from other approaches?

Because behavioral approaches emphasize changing aspects of the environment or consequences for behavior, they generally require active involvement of the parents and, ideally, the school. Although a provider will likely work directly with your child, you can also expect that a significant portion of the treatment will involve working with parents and other caregivers. A therapist may only spend an hour a week with your child, but parents and teachers will spend nearly 100 hours in a given week with the child. Therefore, to maximize the impact of treatment, behavioral approaches focus on helping parents and teachers develop the skills to work effectively with the child. In some sense, the therapist may serve as a coach to parents –a person to help guide them through the challenges of addressing their child's behavior.

Behavioral approaches also tend to emphasize the importance of frequent feedback on a child's behavior. Getting systematic and specific information on changes in the child's behavior is a vital step in tailoring the treatment to meet the needs of an individual child. Therefore, you can expect the therapist to ask you (and a teacher) to actively monitor your child's behavior over time. This may involve keeping a log or journal of problem behaviors or completing rating scales. Behavioral approaches also emphasize the importance of home-school communication and may use specific strategies to promote better communication (e.g., Daily Report Card)

How can I tell if a provider uses a behavioral approach?

Unfortunately, it is not always easy to tell what kind of approach a particular therapist will use and sometimes the term "behavioral" is used inconsistently to refer to a wide range of strategies. Many times, a parent only has a list of approved providers and little guidance to select among them. Some characteristics are important for all no matter what approach they take. For instance, you should feel comfortable with the therapist and be sure that they have appropriate experience and credentials. However, here are some questions that may help inform you about the particular approach to treatment.

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[1] http://www.wjh.harvard.edu/%7Enock/Div53/EST/index_files/Page650.htm

- *Could you describe your general approach to working with children with ADHD?* Aside from an emphasis on collaboration between the family and school (see above), behavioral approaches also tend to emphasize focusing on positive behaviors in addition to reducing negative behaviors. By the time a child begins receiving treatment for ADHD, a large percentage of family interactions involve correcting problem behaviors. Therefore, most well established behavioral treatment programs tend to work on increasing desirable behaviors before addressing undesirable behaviors. If a provider only describes strategies for addressing problem behaviors (e.g., using time-out), ask him or her about the role of rewarding appropriate behavior.

- *Do you work primarily with the child or with the parent(s) as well?* As mentioned above, providers who work almost exclusively with the child are probably not using a behavioral approach. ADHD is not a matter of motivation or will. Working only with the child removes several important elements of the child's environment (i.e., parents and teachers). It is important to note, however, that spending more time individually with the child may be appropriate depending on the specific needs of the child (e.g., for older children or when ADHD is accompanied by depression or anxiety).

- *To what extent are you willing to work with my child's school?* In general, more involvement is desirable. The school is an extremely important environment for children with ADHD. Not only is it the setting that is likely to present the greatest challenges for the child, it is often a major target of effective interventions. Some providers may not routinely involve the school and others may communicate with the school regularly about the child's behavior and progress. In some cases, the provider may be willing to visit the school to observe behavior, consult with teachers, or facilitate communication between the parents and the school.

- *What percentage of your practice focuses on children with difficulties similar to my child's?* It is often a good idea to inquire about a therapist's level of experience. It may be helpful to ask how long he or she has been practicing. Perhaps more important, you may also want to ask about the therapists level of experience with the specific issues for which you are seeking help. Many mental health professionals will work with a wide range of presenting problems. It is generally desirable to find providers who spend more time working with children and families who are likely to share some of your concerns and challenges (e.g., ADHD, Learning Disabilities)

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5B

WHAT WE KNOW

ADHD and Coexisting Conditions: Disruptive Behavior Disorders

Attention-deficit/hyperactivity disorder (ADHD) is a common neurobiological condition affecting 5-8 percent of school age children[1,2,3,4,5,6,7] with symptoms persisting into adulthood in as many as 60 percent of cases (i.e. approximately 4% of adults).[8,9] In addition, approximately two thirds of children with ADHD have at least one other coexisting condition.[10]

As can be seen, any disorder can coexist with ADHD, but certain disorders such as the disruptive behavior disorders seem to occur more commonly.[11]

This *What We Know* Sheet deals with the common disruptive behavior disorders oppositional defiant disorder (ODD) and conduct disorder (CD). Having one of these coexisting Disruptive Behavior Disorders (ODD/CD) can not only complicate the diagnosis and treatment but also worsen the prognosis. Even though many children with ADHD ultimately adjust, some (especially those with an associated conduct or oppositional defiant disorder) are more likely to drop out of school, have fewer years of overall education, have less job satisfaction and fare less well as adults.[12] Early diagnosis and treatment of these conditions is by far the best defense against these poorer outcomes.

HOW ARE COEXISTING CONDITIONS IDENTIFIED?

As the diagnosis of ADHD is being considered, the clinician or mental health professional must also determine whether there are any other psychiatric disorders affecting the child that could be responsible for presenting symptoms. Often, the symptoms of ADHD may overlap with other disorders. The challenge for the clinician is to discern whether a symptom belongs to ADHD, to a different disorder, or to both disorders at the same time. For some children, the overlap of symptoms among the various disorders makes multiple diagnoses possible at the time of initial presentation. In some cases, another condition may arise after the diagnosis of ADHD, necessitating continued monitoring by a trained professional even after the first diagnosis is made.

" Children and adolescents with ADHD and CD often have more difficult lives and poorer outcomes than children with ADHD alone."

Using a combination of symptom questionnaires and interviews with the child, the parents and significant others, the clinician determines if the child exhibits the characteristic symptoms of a disorder. In addition to listing the symptoms, the clinician will ask when the symptoms began, how long they have lasted, how severe they are, how they affect day-to-day functioning, as well as whether or not other family members have had these symptoms. As a result of this questioning, the clinician is able to determine if a child meets the criteria for diagnosis of ADHD and/or another disorder.

The diagnosis and treatment of ADHD are discussed extensively in *What We Know #1:The Disorder Named ADHD.*

ADHD AND DISRUPTIVE BEHAVIOR DISORDERS

The high co-occurrence of ADHD with disruptive behavior disorders necessitates that all children with ADHD symptoms and disruptive behaviors need to be assessed with a view to exploring the possibility that ODD or CD may be present in addition to ADHD.

Disruptive behavior disorders include two similar disorders: oppositional defiant disorder (ODD) and conduct disorder (CD). Common symptoms occurring in children with these disorders include: defiance of authority figures, angry outbursts, and other antisocial behaviors such as lying and stealing. It is felt that the difference between oppositional defiant disorder and conduct disorder is in the severity of symptoms and that they may lie on a continuum often with a developmental progression from ODD to CD with increasing age.[13]

Oppositional defiant disorder (ODD) refers to a recurrent pattern of negative, defiant, disobedient and hostile behavior toward authority figures lasting at least six months. To be diagnosed with ODD four (or more) of the following symptoms must be present:

- often loses temper
- often argues with adults
- often actively defies or refuses to comply with adults' requests or rules
- often deliberately annoys people
- often blames others for his or her mistakes or misbehavior
- is often touchy or easily annoyed by others
- is often angry and resentful
- is often spiteful or vindictive.

These behaviors must be exhibited more frequently than in other children of the same age and must cause significant impairment in social, academic or occupational functioning to warrant the diagnosis.[14]

Conduct disorder (CD) involves more serious behaviors including aggression toward people or animals, destruction of property, lying, stealing and skipping school. The behaviors associated with CD are often described as delinquency. Children exhibiting these behaviors should receive a comprehensive evaluation.[15] Children and adolescents with ADHD and CD often have more difficult lives and poorer outcomes than children with ADHD alone.[16,17]

INCIDENCE OF ADHD AND ODD OR CD

Approximately one-third to one-half of all children with ADHD may have coexisting oppositional defiant disorder (ODD). These children are often disobedient and have outbursts of temper. The rate of children

meeting full diagnostic criteria for ODD is similar across all ages. Males have a greater incidence of ADHD and ODD, as do children of divorced parents and mothers with low socioeconomic status. Children with the ADHD combined subtype seem to be more likely to have ODD.

In some cases, children with ADHD may eventually develop conduct disorder (CD), a more serious pattern of antisocial behaviors.[18] Conduct disorder may occur in 25 percent of children and 45 percent of adolescents with ADHD.[19] CD is more commonly seen in boys than girls, and increases in prevalence with age. Children with ADHD who also meet diagnostic criteria for CD are twice as likely to have difficulty reading, and are at greater risk for social and emotional problems. [20] Non-aggressive conduct problems increase with age, while aggressive symptoms become less common.

RISKS OF HAVING ADHD AND A DISRUPTIVE BEHAVIOR DISORDER

Children with ADHD and CD are often at higher risk for contact with the police and the court system than children with ADHD alone. These children frequently lie or steal and tend to disregard the welfare of others. In addition, they risk getting into serious trouble at school or with the police. The risk for legal troubles may be mostly attributable to the symptoms of CD rather than ADHD.

Disruptive behavior disorders and untreated ADHD have been found to lead to an increased risk of substance use disorders.[21] In addition, adolescents with disruptive behaviors disorders and ADHD are more likely to be aggressive and hostile in their interactions with others, and to be arrested. It has also been suggested that the greater impulsivity associated with the ADHD may cause greater antisocial behavior and its consequences.[22] Thus, early recognition and treatment of both the ADHD and disruptive behaviors in children is essential.

TREATMENT OF ADHD AND DISRUPTIVE BEHAVIOR DISORDERS

All children with symptoms of ADHD and ODD/CD need to be assessed so that both types of problem behaviors can be treated. These children are difficult to live with and parents need to understand that they do not need to deal with their ADHD and ODD/CD child alone. Interventions such as parent training at home and behavioral support in the school can make a difference and parents should not hesitate to ask for assistance.

Home Interventions

Parent Training (PT): Parent training has been shown to be effective for treating oppositional and defiant behaviors. Standardized parent training programs are short-term interventions that teach parents specialized strategies including positive attending, ignoring, the effective use of rewards and punishments, token economies, and time out to address clinically significant behavior problems.[23] Such training programs may include periodic booster sessions.

Severe cases of CD may require multisystemic therapy, an intensive family- and community-based treatment that addresses the multiple causes of serious antisocial behavior in youth. This approach is very comprehensive and demanding. The therapist using such an approach must possess access to developmental and clinical expertise. These intervention services are delivered in a variety of settings (i.e., home, school, peer groups) as needed. Academic and school-based problems are included and some therapists work directly with an entire peer group to influence change.[24]

Parent-child interaction therapy is a treatment that teaches parents to strengthen the relationship with their child and to learn behavior management techniques. It has been found to be effective in the long term for young children with ODD and ADHD. Three to six years after treatment, the mothers of children with these disorders reported that the changes in their children's behavior and their own feelings of control had lasted. Mothers' reports of disruptive behavior decreased with time after treatment.[25]

"...early recognition and treatment of both the ADHD and disruptive behaviors in children is essential."

Collaborative Problem Solving (CPS): Another technique that seems to be promising for children with ADHD and ODD is collaborative problem-solving (CPS).[26] CPS is a treatment that teaches difficult children and adolescents how to handle frustration and learn to be more flexible and adaptable. Parents and children

learn to brainstorm for possible solutions, negotiate, make decisions, and implement solutions that are acceptable to both. They learn to resolve disagreements with less conflict.

Family Therapy: Often a child's behavior can have an effect on the whole family. Parents of children with ADHD often report marital difficulties. Mothers may be more depressed and siblings may also develop behavior problems. Family therapy is critical to helping a family address these issues and cope with the realities of having a child with ADHD and disruptive behaviors. Seeking out a counselor or family therapist in your neighborhood can help the entire family address these issues.

SCHOOL INTERVENTIONS

School-wide Positive Behavioral Supports: In addition to the environment at home, the school can have a significant impact on a child's behavior patterns. Many school systems now have programs in place to provide school-wide positive behavioral supports. The aim of these programs is to foster both successful social behavior and academic gains for all students. These programs consist of: (1) clear, consistent consequences for inappropriate behaviors; (2) positive contingencies for appropriate behaviors; and (3) team-based services for those students with the more extreme behavioral needs.

Tutoring: Children's ADHD symptoms, as well as oppositional symptoms, have been found to be significantly lower in one-on-one tutoring sessions than in the classroom.[27]

Classroom Management: Providing appropriate instructional supports in the classroom can also lessen disruptive behavior. These include: creating an accepting and supportive classroom climate, promoting social and emotional skills, establishing clear rules and procedures, monitoring child behavior, utilizing rewards effectively, responding to mild problem behaviors consistently and effectively managing anger or aggressive behavior.

MEDICATION

Overall results from several clinical studies indicate that medications used for the treatment of ADHD (stimulants as well as non-stimulants) remain an important component in the treatment of ADHD and coexisting ODD/CD.[28,29] Children with these disorders treated with these medications were not only more attentive, but less antisocial and aggressive. ADHD medications are often effective treatments for aggressive or antisocial behavior in patients with ADHD and certainly play a role in any treatment program. (See *What We Know #3: Managing Medication in Children and Adolescents with ADHD* for more information.)

In addition to using stimulant medications alone, medication combinations to reduce behavioral and conduct symptoms associated with attention-deficit/hyperactivity disorder appear to be very effective. In several studies, this treatment combination was reported to be well tolerated and unwanted effects were transient.[30,31]

WHAT CAN A PARENT DO?

To increase the chance for a successful future and to discourage delinquent behaviors in children with ADHD, diagnosis and intervention is extremely important. It is essential for parents to provide structure and reinforce appropriate behavior. In addition, a positive behavior management plan to lessen anti-social behavior is important. Parents should discuss their child's behavioral symptoms with the pediatrician

or family practitioner and seek a referral to a mental health professional who can suggest effective parenting strategies.

In addition, parents should contact their child's school counselor or school psychologist to discuss possible interventions to improve behaviors at school. Having the counselor or psychologist support the teacher in handling classroom behaviors often results in significant behavioral changes and decreases the incidence of expulsion. Consistent behavior management at home, school and elsewhere needs to be enforced.

FOR MORE INFORMATION AND FURTHER READING

Barkley, Russell. (2000) *Taking charge of AD/HD: The complete, authoritative guide for parents (revised edition).* New York, NY: Guilford Press. This book was written for parents and others who want to know more about ADHD and its management. The book covers the disorder, the evaluation/assessment process, managing home and school and the use of medication.

Barkley, Russell. (1998). *Your defiant child: 8 steps to better behavior*. New York, NY: Guilford Press. This book is divided into two parts -- "Getting to Know Your Defiant Child" and "Getting Along with Your Defiant Child." Part two contains an eight-step parenting program built on consistency.

Clark, Lynn. (1996) *SOS! Help for parents*. Berkeley, CA: Parents Press. This book helps parents learn methods for helping children to improve their behavior and techniques for aiding a variety of child personalities, from the stubborn and willful child to time-out basics. It focuses on the basic skills of time-out and how parents can use these techniques to further a child's behavior modification.

Forgatch, Marion S. and Gerald R. Patterson. (2005) *Parents and adolescents living together: Family problem solving.* Champaign, IL: Research Press. This book shows parents how to improve their communication and problem-solving skills, hold family meetings and get the whole family involved in solving problems. It explains how parents can teach their teenaged children to be responsible about schoolwork, sexual behavior and drugs and alcohol.

Goldstein, Sam; Robert Brooks and Sharon K. Weiss. (2004) *Angry children, worried parents: Seven steps to help families manage anger*. Plantation, FL: Specialty Press. This book helps parents cope with anger in their children. It presents the following seven steps to help children learn to manage anger: (1) understand why children become angry; (2) determine when your child needs help; (3) help the child become an active participant in the process; (4) use strategies to manage and express anger; (5) develop and implement a daily management plan; (6) assess and solve problems; and (7) instill a resilient mindset in the child.

Greene, Ross W. (1998). *The explosive child: A new approach for understanding and parenting easily frustrated, chronically inflexible children*. New York, NY: HarperCollins. This book discusses explosive-inflexible behavior in children, which may be associated with ADHD, oppositional defiant disorder, obsessive-compulsive disorder, or other psychiatric disorders. The author argues that behavioral techniques do not work with a small subset of children, who simply lack the skills to improve their behavior. He advocates using positive, less adversarial interactions, and looking for ways to anticipate, prevent and re-direct explosive behavior when possible.

Patterson, Gerald Roy. (1977) *Living with children: New methods for parents and teachers*. Champaign, IL: Research Press. In short, easy-to-read chapters, this book explains how to change the way your child behaves by using behavior modification techniques. It describes how to use positive reinforcement to stop common problems such as bedwetting, whining, teasing and stealing.

Patterson, Gerald Roy and Marion S. Forgatch. (1987) *Parents and adolescents working together, Part I: The basics*. Eugene, OR: Castalia Publishing. This book offers parents behavior modification guidelines they can use with teenagers to foster a good relationship and prevent battles. It explains how to use requests that work, how to monitor and track behavior, how to set up point charts and how to discipline effectively.

Phelan, Tom. (2003) *1-2-3 Magic: Effective discipline for children 2-12* (third edition). Glen Ellyn, IL: ParentMagic Inc. The author presents three steps for disciplining children: controlling obnoxious behavior, encouraging good behavior and strengthening the relationship with the child. The author also explains how to manage the six kinds of testing and manipulation, how to handle misbehavior in public and how to avoid the talk-persuade-argue-yell-hit syndrome.

Shure, Myrna. (1996) *Raising a Thinking Child: Help your young child to resolve everyday conflicts and get along with others*. New York, NY: Pocket. This book provides steps that parents can follow in teaching young children to solve problems and resolve daily conflicts. The book includes dialogues for handling specific situations, games and activities, and communication techniques.

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For further information about ADHD or CHADD, please contact:

National Resource Center on ADHD
Children and Adults with Attention-Deficit/ Hyperactivity Disorder
8181 Professional Place, Suite 150
Landover, MD 20785
1-800-233-4050
www.help4adhd.org

Please visit the CHADD Web site a
www.chadd.org

THE CHILDREN'S HOSPITAL OF PHILADELPHIA
Center for the Management of ADHD

ADHD Bootcamp for Parents

- Was your child recently diagnosed with ADHD?
- Do you feel alone as you try to get your child the help he or she needs?
- Would you like to learn more about ADHD and the treatments that can help your child?
- Would you like to talk with other parents who are in the same situation?

If so, join us for a 4 session parent group to:

✓ Gain support from other parents

✓ Learn more about ADHD and what you can do to help your child

WHEN: Groups meet from 5:30-7:00 pm on Mon., Tues. or Wed. evenings & start on a rolling basis

WHERE:

- Outpatient Clinic, 3440 Market St., Suite 200, Philadelphia, PA 19104
- Springfield Specialty Care Ctr, 100 W Sproul Rd, Springfield, PA 19064
- Exton Speciality Care Ctr, 481 John Young Way, Exton, PA 19341

QUESTIONS OR TO PARTICIPATE IN A GROUP?

Please contact Nicole Kurtz, ADHD Coordinator, at (215) 590-6012.

THE CHILDREN'S HOSPITAL OF PHILADELPHIA
Center for the Management of ADHD

FAMILY SCHOOL SUCCESS PROGRAM

PROGRAM GOALS:

- Learn about ADHD and how it affects your family and your child's success at school
- Learn "superparenting" strategies to help your child be more successful at home and school
- Learn ways to improve your child's performance at school
- Gain support from working together with other parents

SESSION TOPICS INCLUDE:

- Strengthening family relationships to promote success at home and school
- Understanding basics of behavior management
- Introducing the token economy
- Promoting family involvement in education and establishing the homework ritual
- Managing time and goal setting
- Using punishment successfully
- Integrating skills and and planning for school next year

WHEN:

Groups meet from 5:30-7:00 pm on either Tuesday or Wednesday evenings and start on a rolling basis

WHERE:

- Outpatient Clinic, 3440 Market Street, Suite 200, Philadelphia, PA 19104
- Springfield Specialty Care Center, 100 W. Sproul Rd, Springfield, PA 19064

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