

Non-Drug Approaches for Children With Attention Deficit/Hyperactivity Disorder

What is Attention Deficit/Hyperactivity Disorder (ADHD)?

Attention Deficit/Hyperactivity Disorder (ADHD) is a condition in which a person finds it difficult to sit still, pay attention, and control behavior. ADHD begins in childhood, usually before age seven. However, the symptoms may not be noticed until the child is older. The condition lasts at least six months. It can continue throughout the teen years and into adulthood.

How common is ADHD?

More and more children are being diagnosed with ADHD. The percentage of children ages 4-17 diagnosed with ADHD increased from 7.8 percent in 2003 to 9.5 percent in 2007. That is almost one out of every 10 children.

How serious is ADHD?

Children with ADHD can grow up to live happy, productive lives. It is very important, though, to identify and treat the condition early. Without this early intervention, a person is at risk for problems and failure in school, relationships, and on the job.

What are the symptoms of ADHD?

There are three types of ADHD: 1) Inattentive (not paying attention), 2) Hyperactive-Impulsive (overactive, difficulty controlling one's behavior), and 3) a combination of these two sets of symptoms.

Inattentive ADHD (6 of 9 present)

- Fails to give close attention to details
- Difficulty sustaining attention
- Does not appear to listen
- Has difficulty following instructions
- Difficulty with organization
- Avoids tasks requiring sustained attention
- Often loses things
- Easily distracted
- Forgetful in daily activities

Hyperactive, Impulsive ADHD (6 of 9 present)

- Fidgets or squirms
- Difficulty staying seated
- Runs or climbs inappropriately
- Difficulty engaging in activities quietly
- Always "on the go," "driven by a motor"
- Talks excessively
- Blurts out answers
- Difficulty in waiting their turn
- Interrupts or intrudes upon others

How is ADHD diagnosed in children?

All children have some of these symptoms when young; this is normal. As they grow older, children with ADHD may lose interest in things sooner than other children, have trouble following rules, or constantly act "out-of-control." Parents and teachers are usually the first to notice these concerns. ADHD is not easy to diagnose. Children mature at different rates and have different personalities. Also, symptoms are different for different children with ADHD.



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There is no specific test for ADHD. A doctor and/or mental health professional will gather information about a child suspected of having ADHD. They will investigate if something else might be causing the symptoms. They will ask how long symptoms have lasted and if the child acts the same in different settings. For example, is the child's behavior the same at home as it is in school? It is important to work with a professional experienced in diagnosing ADHD. This might include: a developmental pediatrician, psychiatrist, psychologist, or clinical social worker. If needed, check with the child's physician and your school system for names of professionals experienced with ADHD. Parents of children with ADHD may also be able to suggest names of experienced clinicians. See the list of resources on page 12 for other helpful information and agencies.

See the Centers for Disease Control and Prevention website for a checklist to help determine if a child has ADHD: <http://www.cdc.gov/NCBDDD/adhd/widget/checklist/index.html>.

Do specialists have differing thoughts on ADHD?

Some clinicians question if the ADHD symptoms of some children are truly a disorder. They suggest that the children's brains may be developing at a slower rate. Researchers have used magnetic resonance imaging (MRI) to study the brain development of children with ADHD. (MRI uses a magnet and radio waves to create signals from the body.) They found that certain areas of the brain seemed to develop three years slower compared to other children. These areas control functions such as actions, thoughts, attention, and memory. At the same time, another part of the brain that controls movement seemed to develop faster than other children. These findings may explain a child's inability to sit still along with her/his difficulty in paying attention. Over time, the differences seen on MRIs were reduced as the children's symptoms often improved.

What other conditions could be causing ADHD type symptoms?

Any of the following conditions could cause similar symptoms:

- primary developmental delay (caused by an abnormality in the genes a child inherits or a serious injury or shock when young)
- sensory processing disorder (when the brain has difficulty interpreting information from the five senses) To learn more about SPD, see: <http://www.sensory-processing-disorder.com/> and Carol Stock-Kranowitz's book, *The-Out-Of-Sync Child: Recognizing and Coping With Sensory Processing Disorder, Revised*, Penguin Group, 2005.)
- learning disability
- depression
- anxiety
- sleep disorders
- abuse—verbal, emotional, physical, sexual
- neglect
- other family stress

A child may have one or more of these conditions rather than ADHD. Or a child may have ADHD in addition to one or more of these conditions. Children who feel that they are continually failing to meet expectations may become anxious or depressed. Caring for a child with challenging behaviors is stressful and can result in increased tension in the home. Research has shown that children who have ADHD along with one or more of these conditions will not respond as well to medications used to treat ADHD. They will do best if they and their families receive additional treatment and support.



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What laboratory tests are done when diagnosing ADHD?

A clinician may order several blood tests to see if the child has conditions other than ADHD. If so, these conditions should be treated. Then after a period of time, a specialist should assess the child again to see if the symptoms are still present or not. Lab work may include:

- Complete blood count (CBC) to assess for anemia (a low number of red blood cells)
- Serum ferritin to assess for too little iron
- Thyroid stimulating hormone (TSH) to screen for hypothyroidism (abnormality of thyroid gland)
- 25-Hydroxy Vitamin D test to see if the child has too little Vitamin D in the body.

What is the standard treatment for ADHD?

Generally, the standard treatment for ADHD is psychotropic medications. These medications affect the mind, mood, and behavior. Most medications approved by the U.S. Food and Drug Administration (FDA) for ADHD are stimulants. They stimulate the body's nervous system. They improve symptoms by increasing a person's ability to focus, helping her/him to be more alert and aware.

Many families hesitate to give their children drugs for ADHD because of side effects. They are concerned about known side effects that could occur right away as well as unexpected ones that could show up later. Also, a number of children with ADHD do not improve with medication. Whether or not medications are taken, many families are interested in other approaches. Alternative approaches are those used instead of standard drugs. Complementary approaches are ones used along with standard medication. The goal of treatment is to help children participate comfortably at school, home, and other settings.

What are some non-drug ways to reduce ADHD symptoms?

Some non-drug ways to reduce ADHD symptoms include: keeping chemicals to a minimum, limiting television time, paying attention to good nutrition and sleep, taking nutritional and herbal supplements, behavioral therapy, meditation, and neurofeedback.

Are there any ways to prevent ADHD?

There are no proven ways to prevent the development of ADHD. However, it may help to limit the chemicals to which a child is exposed and the amount of television watched. This can have other health benefits as well. As you read the following information, take care not to blame yourself or someone else for what has occurred in the past. Use the information to help promote your child's health now.

- **Chemicals**

The following information is from the book, *Mental Health, Naturally: The Family Guide to Holistic Care for a Healthy Mind and Body* by Kathi J. Kemper, MD.

- Children whose mothers smoked while they were pregnant have a higher rate of ADHD. Tobacco smoke, alcohol, narcotics and illegal drugs slow thinking and decrease the ability to pay attention.
- High levels of lead, arsenic and manganese can contribute to learning disabilities and ADHD symptoms.
- Polychlorinated biphenyls (PCBs) and polybrominated biphenyls and diphenyl ethers can interfere with brain development. PCBs are now banned in the U.S. However, they remain in the environment. Polybrominated biphenyls and diphenyl ethers are used in plastics, electronics and flame retardants.



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- Formaldehyde can cause irritability and difficulty with sleep and memory. It is used in many building materials.
- Avoid pollutants such as dioxin (a byproduct of bleaching paper products), dieldrin (pesticide), atrazine (herbicide) and BPA (used in plastics and liners of food containers). This may help prevent some learning disabilities and hyperactivity. It is a good idea to use green (healthy) cleaning products and eat organic food when possible.
- **Television**

A 2004 study looked at 1,200 one-year-olds and 1,300 three-year-olds. By age seven, 10% of them had difficulty paying attention. Their symptoms were related to the number of hours of television watched when they were young. A study of 1,000 children in New Zealand looked at television viewing time at ages 5, 7, 9 and 11 years. The more television that was watched in these earlier years, the more likely the children were to have attention problems at ages 13 and 15 years. This was unrelated to the amount of television they watched when they were older.

Current recommendations from the American Academy of Pediatrics

- No television for children younger than two
- Limit all screen time (television, movies, computers, video games, etc.) for children two or older to 1-2 hours per day

Can good nutrition help with symptoms?

- **Balance**

Rapid changes in blood sugar can feel uncomfortable. Sugar “highs” and “crashes” may cause children to be fidgety or to have difficulty paying attention. Meals such as sugary cereal with skim milk or a bagel with fat-free cream cheese may not provide the nutrition to keep them going to their next meal. Including fiber, healthy fats, whole grains, and protein with meals, especially breakfast, may help prevent that discomfort. See our handout [Glycemic Index & Glycemic Load](#) to learn more about food and blood sugar levels. Some healthy breakfasts:

 - Steel cut oatmeal or millet with nuts and berries (mixed in or on the side)
 - Eggs cooked in a small amount of olive oil, buttered whole grain toast, a serving of fruit
 - Home-made, low sugar granola mixed with plain, whole fat yogurt sweetened with fruit or a bit of honey or real maple syrup.
- **Food Additives**

In the 1970’s, Dr. Benjamin Feingold claimed that 60-70% of children with ADHD could be successfully treated with a special diet. The diet avoided all artificial colors and flavors and several preservatives. It also eliminated some whole foods that contain natural salicylates. Salicylates are a group of chemicals related to aspirin. They are found in food plants such as apples, berries, cucumbers, tomatoes, and others. For more information on this diet, see: <http://www.everydiet.org/diet/feingold-diet>.

Dr. Feingold’s theory has been controversial. However, research over the last 35 years shows that at least some children with ADHD improve when preservatives and artificial food coloring and flavors are removed from their diets. The number of children who benefit is not likely as large as Dr. Feingold initially thought. It may be worthwhile for any child with ADHD to strictly avoid foods and medications (if possible) containing artificial colors, flavors and preservatives for two weeks. Watch carefully to see if the child’s behavior improves. Changes in diet may be



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difficult at first. But the new diet can have another benefit. It may help the child eat more fresh, whole foods, which can improve long-term health.

FOOD ADDITIVES TO AVOID

- U.S. Food and Drug Administration (FDA) certified dyes indicated by a number (e.g., FD&C Yellow No. 5) or a trade name (e.g., tartrazine)
- Vanillin and other artificial flavors
- BHA, BHT, TBHQ and sodium benzoate
- Ingredients in some over-the-counter and prescription medications. Consult with a pharmacist about available medications and dosages without these additives, including those for ADHD.
- Look closely at most bakery items, soft drinks (including soda, “fruit” drinks, sports drinks, etc.), condiments, snack foods, soups, salad dressings, etc. for these ingredients.
- In general, avoiding processed foods, soda and, artificially colored food products will reduce the amount of these chemicals in the child's diet.

• Food Sensitivities

Research shows that the symptoms of some children with ADHD may improve if they don't eat certain foods. The children who benefit from this may have a history of colic, eczema, reflux, antibiotic use, or a family history of conditions such as hay fever asthma, or skin conditions. Symptoms that suggest children may be sensitive to certain foods include: dark circles under the eyes along with breathing through the mouth, pain in the bones of the arms or legs, pain in the belly, irritable bowel syndrome, bad breath, foot odor, runny nose and trouble sleeping.

THE MOST COMMON FOODS TO AVOID

FOOD	AVOID	SERVE
Additives	All artificial colors, flavors and preservatives	
Milk	All dairy including milk, cheese, yogurt and ice cream	Rice milk
Chocolate	Chocolate	
Grains	Wheat, rye, barley	Oats, rice, rice crackers, rice noodles
Meats/poultry/fish/eggs	Eggs, processed meats	Unprocessed meats, poultry, fish
Fruits	Citrus	All others—including sources of vitamin C such as strawberries, blueberries, raspberries, cantaloupe, watermelon, papaya, mango and kiwi.
Vegetables	Legumes (peanuts, beans, peas, etc), soy, peanut oils, corn, corn oil, corn syrup	All others including vegetable sources of vitamin C such as broccoli, tomatoes and peppers.
Nuts	Peanuts; nuts processed with peanut or soy oil.	All others

Table adapted from Stevens LJ, Kuczek T, Burgess JR. Dietary Sensitivities and ADHD Symptoms: Thirty-five Years of Research. *Clinical Pediatrics* 2011;50(4):279-293.

PATIENT HANDOUT

University of Wisconsin Integrative Medicine
www.fammed.wisc.edu/integrative



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You can use an elimination diet to learn whether or not certain foods may be causing the child's ADHD symptoms or making them worse. If they are, the diet also can become a way to treat these symptoms. It is important not to cause a child to fear food or to unnecessarily eliminate otherwise healthy, nutritious foods. After the child avoids eating a certain food for several weeks, note carefully if her/his behavior improves. Serve the foods to the child again to see if symptoms increase. The idea is to let the child have as many foods as possible and remove only those that cause problems. See our handout [Elimination Diet](#) for more information.

- **Omega 3 Fatty Acids and the Anti-Inflammatory Diet**

Inflammation is one of the body's natural ways of protecting itself. It includes many chemical reactions that help to fight off infections, to increase blood flow to places that need healing, and to cause pain as a signal that something is wrong with the body. Unfortunately, it is possible to have too much of a good thing. A number of medical conditions are linked to too much inflammation in the body. ADHD may be one of these conditions.

There are two groups of fats that our bodies can't make, omega-6's and omega-3's. Most omega-6 fats promote inflammation. Omega-3's decrease it. Therefore, taking more omega-3's might help prevent or treat health problems that are associated with inflammation.

Higher levels of omega-3's in red blood cells seem to lower anxiety and result in better word reading. Higher omega-6 levels appear to result in poorer reading, vocabulary, spelling and attention. This may be especially true for children who have both ADHD and learning difficulties. The results of 10 studies involving 699 children were analyzed. They found that ADHD symptoms improved somewhat when children were given omega-3 fat supplements. Two types of acid, DHA and EPA, are in the supplements. EPA seems to help the most for ADHD.

Fast foods, partially hydrogenated fats, most meats, and dairy products can all increase the inflammation in our bodies. See our handout [The Anti-Inflammatory Diet](#) for more information on foods that can decrease inflammation. Eating two to three servings per week of cold water fish is an excellent way to get more omega-3s. Search the website of the [Environmental Defense Fund](#) for "seafood" to locate a pocket guide of environmentally sensitive, healthy seafood choices.

Our handout [Omega-3 Fatty Acids](#) has more information on fish oil supplements. Seven hundred (700) milligrams (mg) per day is a common dose of fish oil for children ages 7-12. To obtain the dose, add up the amount of EPA + DHA on the label. Divide this number by the serving size listed on the label. This will tell you how many milligrams are in each capsule. Supplements with a higher EPA may be more helpful.

Do children with ADHD have difficulty sleeping?

Specialists estimate that 30% of children with ADHD have a problem with sleep. This could include: feeling sleepy during the daytime; difficulty falling asleep, staying asleep or both; restless legs syndrome; and sleep-disordered breathing (an abnormal pattern of breathing during sleep). It is very important to note if the child has difficulty with sleep. If so, seek the help of the child's clinician. The following suggestions can help children sleep better as well:

- Keep a regular bedtime schedule
- Avoid viewing computers, television, etc. for a few hours before bed



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- Use shades to darken the bedroom
- Avoid caffeine
- Find more information in our handout [*Improving and Maintaining a Health Sleep-Wake Cycle*](#).

Are any nutritional supplements helpful for children with ADHD?

- **Iron**

A recent study using MRI showed that children with ADHD have lower levels of iron in the thalamus, a part of the brain. Other studies have found that children with ADHD have lower levels of ferritin in their blood. Ferritin is a protein found inside cells that stores iron so the body can use it later. Most children in the studies were *not* anemic. They had a normal number of healthy, red blood cells. Giving the children iron supplements improved many of their ADHD symptoms. Work with the child's health care practitioner to determine if iron supplements may be helpful. Doses used in the studies were either 5 mg per kilogram of body weight per day for 30 days or 80 mg of ferrous sulfate daily. To help the child get more iron from food, serve: tofu, lentils, kidney and garbanzo beans, spinach, dried apricots, blackstrap molasses, and prune juice. The body can use the iron best, if foods containing Vitamin C are eaten at the same time. These include: citrus fruits; tomatoes; broccoli, cauliflower, cabbage and similar vegetables; and vegetable greens, such as beet greens, Swiss chard, kale, and spinach.

- **Zinc**

Because zinc helps the brain develop, it has been studied for use in ADHD. Zinc levels tend to be lower in individuals with ADHD. Taking zinc supplements can reduce hyperactive and impulsive behaviors. Too much zinc, however, can cause stomach upset and headaches. Also over time it can lower the levels of copper and HDL ("good") cholesterol in the body and lower the body's ability to fight disease. The safe daily upper limits of zinc for children aged 4-8 is 12 mg. For children age 9-13, it is 23 mg. (This is for children not taking it for medical reasons under the care of a physician.) Researchers report that zinc improved the mental performance of children in seventh grade. Discuss the use of zinc with the child's health care practitioner. For children age 9 and older consider 20 mg per day, 5 days a week, for three months. (15-20 mg for children under age 9.) Research on zinc has often been done in countries where it is common not to get enough in one's diet. Therefore, zinc supplements may not be as helpful in the United States. However, poor nutrition is common in the U.S. too. So, we cannot assume that children will get enough zinc from the foods they eat. To help the child get more zinc from food, serve: oysters, red meat, poultry, crab, lobsters, and fortified breakfast cereals. Other foods have lower levels of zinc per serving but are healthier overall. These include: beans (e.g., green and garbanzo), nuts, dark chocolate, spinach, broccoli, whole grains, dairy products.

- **Acetyl-L-Carnitine**

Acetyl-L-carnitine helps the body use omega-3 and omega-6 fatty acids, removes substances that could be harmful, and likely has an effect on chemical pathways that affect how the brain works. Several small studies have investigated this supplement for individuals with ADHD. The results have been mixed. Doses used in the studies varied from 500 to 1500 mg twice daily of Acetyl-L-carnitine. Other studies used L-carnitine at 100 mg per kilogram of body weight, up to a maximum of 4000 mg daily. There are few side effects, but it may cause stomach upset, restlessness or a fishy odor to body fluids. Again, check with the child's health care practitioner about trying this supplement. The body gets acetyl-L-carnitine from eating meat. A child who eats little or no meat may benefit most.



Are any herbal supplements helpful for ADHD?

- **Pycnogenol**

Pycnogenol is the trademark name for a product made from the bark of a French pine tree (*Pinus pinaster*). Pycnogenol is believed to increase the amount of nitric oxide in the body. Nitric oxide helps regulate signals that affect the way the body's nervous system works. In a study, 61 children were given either pycnogenol or a placebo (fake pill) for four weeks. Teachers rated the behavior of the children. Children who received the pycnogenol had fewer problems with hyperactivity and inattention. The symptoms returned when the pycnogenol was stopped. The dose used in the study was 1 mg per kilogram of the child's weight.



"Children are living beings—more living than grown-up people who have built shells of habit around themselves. Therefore it is absolutely necessary for their mental health and development that they should not have mere schools for their lessons, but a world whose guiding spirit is personal love." Rabindranath Tagore

What are behavioral therapies, and how helpful are they?

Behavioral therapy (also known as behavioral modification) is a non-medical approach proven helpful for ADHD. Using this therapy, parents, teachers, and a child with ADHD all learn ways to help the child improve behavior and to feel good about her/himself.

The National Institute for Health and Clinical Excellence (NICE) in the United Kingdom is highly regarded. Its 2008 guideline on ADHD stresses how important behavioral interventions are for children with ADHD. It does not recommend drug treatment for pre-school children. For school-aged children, it reserves drug treatment for: 1) those who have severe problems, 2) those with moderate problems who choose not to do nondrug treatment, or 3) those whose symptoms remain the same after parent education or group psychological treatment. The guideline recommends careful, clear coordination of care between families, health care practitioners, schools, and specialists providing behavioral training. For best results, parent, teacher, and child trainings should be done at the same time. Parent training has also improved the emotional and social health of mothers of children with ADHD.



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There are four major types of behavioral therapies:

- **Parent training.** Children with ADHD need more guidance and oversight than other children. They do best with the same routine every day; a well-organized household; simple brief directions; quiet surroundings; and realistic goals and rewards. This lifestyle can be overwhelming for parents to create on their own. Training helps parents learn what drives a child's behavior and the most effective ways to guide the child into better behavior. Good programs include education about ADHD, diaries and checklists, how to ignore minor undesired behavior, how to reward positive behavior, plans for discipline, and assistance with problem-solving. It can be a great source of support.
- **Family therapy.** One child's behavior can affect an entire family. It then becomes a family issue. Parents can become depressed or have marital problems. Other children in the family can develop behavior problems. A family therapist can help an entire family cope.
- **School programs.** Most children with ADHD are not enrolled in special education classes. Their teachers may not know the best ways to support a child with ADHD. Students and teachers can benefit from a school behavioral program developed by an experienced therapist. It is important for parents to work closely with teachers. A well-designed plan will be consistent at home and at school. It can help a child be successful with schoolwork, less disruptive, and more appropriate socially.
- **Child training.** Children with ADHD often have trouble interacting with others. They may also have low self-esteem. Social skill training is designed to address these concerns. This type of training can be quite complex. It involves combining careful instruction in social and problem-solving skills with supervised practice when other children are present. The children with ADHD receive rewards and consequences for the ways they interact with their peers.

In her book, *Mental Health, Naturally*, Dr. Kemper offers some general suggestions for children with ADHD and their families:

- Focus on the strengths of the child. A child with "high activity" can also be "filled with vitality." A child who is "impulsive" can also be "adaptable." Catch the child being good.
- Regular exercise and movement throughout the day can improve ability to focus. Martial arts training may be especially good as it combines movement with discipline.
- Encourage the child to spend regular time in nature. It can reduce hyperactivity and improve attention and self-discipline.
- Limit the use of computers, television, and radio.
- Keep regular routines on which a child can rely.
- Problem-solve solutions to behavior, e.g., have a child who wanders sit near a teacher or another child who behaves well.
- Break large jobs into smaller tasks. Encourage and praise the child's continued *effort*.
- Help the child practice patience. Waiting 15 seconds may feel like forever to the child. Being able to wait that long for something s/he wants is an accomplishment to celebrate.
- Encourage activities that involve physical movement, e.g., jumping jacks while reciting arithmetic tables, spelling bees combined with a relay race. In class, provide a child with a rubber ball to squeeze when he/she must be quiet. Some schools may be able to provide "standing" desks, which can be helpful for some children.

Tell your child often, "I love you, no matter what." Cindy Francis



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FOR MORE INFORMATION ON BEHAVIORAL THERAPIES

You will find more information on behavioral therapies at the following websites. They also include practical suggestions for managing the behavior of a child with ADHD:

- **What We Know: Psychosocial Treatments for Children and Adolescents with AD/HD.** <http://www.help4adhd.org/documents/WWK7.pdf>. Fact sheet from the National Resource Center on AD/HD. Provides information on parent training, school and child interventions.
- **ADD/ADHD Treatment in Children: Finding Treatments That Work For Kids And Teens.** http://www.helpguide.org/mental/adhd_add_treatments_coping.htm. Information and treatment tips from HelpGuide.org.
- **Behavior Therapy and Parent Training For ADHD.** http://www.babycenter.com/0_behavior-therapy-and-parent-training-for-adhd_67406.bc Information and tips from the BabyCenter.
- **Behavioral Techniques For Children With ADHD.** <http://children.webmd.com/adhd-and-your-child-6/behavioral-therapy?page=2>. Behavior management tips for preschoolers, children ages 6-12, and teenagers from Web MD.

RESOURCES FOR BEHAVIORAL TREATMENTS

The availability of skilled therapists and educational programs that focus on behavior will vary by community. Contact the following to identify specialists and programs in your area:

- **Health care practitioner.** Your child's doctor may know of behavioral and family therapists in your community.
- **Local school system.** Contact a professional in your school system (school guidance counselor, psychologist, social worker or special education teacher) for names of therapists and programs within the school system or community.
- **Parent to Parent: Family Training on ADHD.** This is a 14-hour course available on-line or in person (usually meeting two hours/week for seven weeks). It provides educational information and support for individuals and families. The curriculum was developed by parents of children with ADHD who had access to skilled professionals. Courses are offered in communities across the country. To learn more and to locate a class in your area, go to: http://www.chadd.org/AM/Template.cfm?Section=Parent_to_Parent_Program.
- **Additional resources.** See more resources on: page 12.

Can meditation be helpful for children with ADHD?

A 1987 study of 23 boys with ADHD in New York compared meditation training to medication. The children in the meditation group attended 30 minute sessions twice a week for four weeks. They also practiced meditation at home three times a week. At the end of four weeks, teachers found no difference in the behavior of the boys in the two groups.

Introduction of meditation or centering practices can be kept very simple with children. In the above study, participants repeated the word "one" out loud and gradually more softly until the word was repeated silently. The children began meditating for one minute at a time. The length of time was slowly increased. By the end of the four-week training period, they were meditating for eight minutes. [Kerry Lee MacLean's books](#) *Peaceful Piggy Meditation* and *Moody Cow Meditates* are lovely ways to introduce meditation to children. Many psychologists and yoga instructors have training in mindfulness meditation. They may be able to work with children individually. Local resources will vary.



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What is neurofeedback?

Electroencephalograms (EEGs) measure the electrical activity on the surface of the brain. It has been reported that 85-90% of people with ADHD have lower signals on their EEGs than people without ADHD. A smaller group of individuals with ADHD seem to have more electrical activity on their EEGs. Stimulant medications tend not to be helpful for this latter group. Neurofeedback (also called EEG biofeedback) is a process by which individuals are trained to change these brain wave patterns to be more like those of people without ADHD. The idea is that this will decrease ADHD symptoms. Neurofeedback is done using a computer and special software. Wires positioned on the scalp measure brain waves. When children are paying attention and calm, they will see a favorite scene on the screen. When their attention wanders or they become restless, the screen will become dark or movement on the screen will stop. The child will then be encouraged to pay attention and be calm.

A German project studied 34 children ages 8-12 with ADHD. Twenty-two received neurofeedback training. Twelve children were treated with methylphenidate (a stimulant drug). Parents decided which treatment they wanted their child to have. After three months of treatment, both groups of children improved. There were no significant differences between the two groups. There has been some concern about the quality of neurofeedback studies. However, this treatment is promising, and more high quality research is needed. One drawback is that the children in the studies received 20-40 sessions of neurofeedback, lasting 30-45 minutes each. This involves a lot of time and can be costly. If a qualified therapist is available in your area and if you can afford it, neurofeedback may be very helpful.

Books for Children with ADHD

Recommended by Staff of the National Resource Center on ADHD

They use language children can understand to explain ADHD symptoms and treatments.

<http://www.help4adhd.org/en/living/parenting/ChildrenFav>

Above all, there is no substitute for unconditional love and a sense of security at home and at school. Show your child often that s/he is loved during these years of growth and development.



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ADHD RESOURCES FOR FAMILIES, INDIVIDUALS, AND PROFESSIONALS		
Organization	Content	Website
Attention Deficit Disorder Association (ADDA)	Provides information, resources and networking opportunities to help adults (including college students) with ADHD lead better lives.	http://www.add.org/
Centers for Disease Control and Prevention (CDC), U.S. Government.	<ol style="list-style-type: none"> ADHD homepage provides a variety of information for families and health care providers. A checklist to help determine if a child has ADHD. Brief ADHD Fact Sheet. In both English and Spanish 	<ol style="list-style-type: none"> http://www.cdc.gov/ncbddd/adhd/ http://www.cdc.gov/NCBDD/adhd/widget/checklist/index.html http://www.cdc.gov/ncbddd/actearly/pdf/parents_parents/ADHDFactSheet.pdf
Children and Adults with Attention Deficit/Hyperactivity Disorder (CHADD)	<ol style="list-style-type: none"> National non-profit organization providing education, advocacy and support. Printed material to keep families and professionals current on research advances, medications and treatments. The National Resource Center on ADHD is a CHADD program. <ul style="list-style-type: none"> "What We Know" sheets update families and professionals on new research, treatments and successful strategies for children and adults. Contact Health Information Specialists if you cannot find answers to your questions. 	<ol style="list-style-type: none"> http://www.chadd.org/ "What we know" sheets: http://help4adhd.org/en/about/wwk Health Information Specialists: 1-800-233-4050 or http://www.help4adhd.org/info_request.cfm
National Dissemination Center for Children with Disabilities (NICHCY)	<ol style="list-style-type: none"> Information on disabilities in infants, toddlers, children, and youth. Includes easy-to-read information on IDEA, the law requiring early intervention services and special education. Look up your state to learn where to call for Early Intervention Services (birth to age 3). 	<ol style="list-style-type: none"> http://nichcy.org/ http://nichcy.org/state-organization-search-by-state
National Institute of Mental Health (NIMH), National Institutes of Health, U.S. Dept. of Health and Human Services	A detailed booklet-- <i>Attention Deficit Hyperactivity Disorder (ADHD)</i> --that describes ADHD symptoms, causes, and treatments, with information on getting help and coping.	http://www.nimh.nih.gov/health/publications/attention-deficit-hyperactivity-disorder/complete-index.shtml



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The information in this handout is for general education. It is not meant to be used by a parent alone. Please work with your child's health care practitioner to use this information in the best way possible to promote the health of your child and family.

References for the content in this handout include the website links in this document and the publications and websites listed in our clinician version of this handout.

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