



WHAT WE KNOW

Managing Medication for Children and Teenagers with AD/HD

Children or teens with attention-deficit/hyperactivity disorder (AD/HD) often have more problems than other people with paying attention, being hyperactive, or being impulsive (doing things rashly or suddenly, without thinking first). These problems may last throughout their lives.

If AD/HD is not diagnosed and treated early, it may lead to failing in school or dropping out. The symptoms might also lead to not doing well in a job, depression, and serious behavior problems. AD/HD can also cause children and adolescents problems with relationships, not living up to their ability, substance abuse, or serious antisocial or even criminal behavior.

About 3 percent to 7 percent of children – boys and girls -- have AD/HD. Research shows AD/HD tends to run in families.

AD/HD is not caused by bad parenting, or by other factors in the child's home or family life.

DIAGNOSIS OF AD/HD

There is no single test to diagnose AD/HD. Anxiety, depression, and some learning disabilities are conditions that may seem like AD/HD. Health

professionals (for example, pediatricians, psychologists or psychiatrists) must find out if the child has any of these conditions instead of—or along with—AD/HD.

To diagnose AD/HD, a health professional needs to know how the child or teenager is doing both at home and in school, socially as well as emotionally. The healthcare provider will ask questions of parents, teachers, and, of course, the child.

A physical exam by a medical professional should include hearing and vision checkups. This exam is also done to rule out other medical problems with symptoms that seem like AD/HD, but are not.

TREATMENT FOR AD/HD

Properly treating children and teens with AD/HD includes medical, educational and behavioral treatments. The term for this combination of treatments is *multimodal* treatment.

Part of the treatment is teaching the parents and the child about AD/HD. Parents will learn how to manage the child's behavior, about medications and other therapies, and how to get the school programs the child needs.

Treatment should be based on the unique needs of each child and family. Multimodal treatment is usually thought to be the best treatment plan.

THE ROLE OF MEDICATION

For most children and teens, the medication prescribed by a doctor is an important part of AD/HD treatment. Medications are not used to control behavior. Instead, they are used to make the symptoms of AD/HD better.

STARTING MEDICATION

The child, the family, and the medical professional should work together to decide on a treatment plan. If medication is used, the doctor prescribes it. If the first medication is not helpful or has unacceptable side effects, the doctor will probably change the dose or try another medication.

STIMULANT MEDICATIONS

Stimulant medications are medications that stimulate the frontal parts of the brain that are not filtering out distractions as well as they should. The three most common types of stimulants used to treat AD/HD are methylphenidate (brand names: Concerta and Ritalin) amphetamine (brand name: Adderall) and dextroamphetamine (brand name: Dexadrine).

Between 70 percent and 80 percent of children with AD/HD do well with these medications. Their symptoms lessen. But the right medication and the right dose must be found for each individual.

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.

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NONSTIMULANT MEDICATIONS

Some people do just as well or better by taking medications that are not stimulants. *Nonstimulants* are often used when people do not do well on stimulants. A new medication (called Strattera) is specifically for AD/HD. It is not a stimulant, but it also helps with inattention and with hyperactive and impulsive symptoms of AD/HD.

Antidepressant medications are sometimes used for AD/HD, but not as often, to help with hyperactivity, anxiety or serious sleeping problems. Common antidepressants are Prozac, Zoloft, and Celexa.

POSSIBLE SIDE EFFECTS OF MEDICATIONS FOR AD/HD

Most of the side effects of stimulant medication and Strattera when first using AD/HD medications are mild and may not last long. The most common side

effects are loss of appetite, headache, stomachache, and sleeping problems. The doctor usually can help manage these side effects.

FREQUENTLY ASKED QUESTIONS

Q. How long does it take to find the right individual dose of medication?

A. The effects of a stimulant medication usually can be seen in 30 to 60 minutes, but finding the right dose and schedule for taking it may take a few weeks. Nonstimulant medications often need several weeks before they fully work.

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

A. Not necessarily. Many teens and adults continue to do well on the same doses of stimulant medication. But others may need a higher dose.

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

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A. These medications can be stopped at any time. However, AD/HD is an ongoing (or *chronic*) condition. However, about one-third of people who have AD/HD as children seem to outgrow the symptoms. People will have different long-term experiences and may find they need to take medication into adulthood.

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

A. Talk to your doctor about this. Medication taken outside of school can help children get along with friends, avoid symptoms when at home, and pay attention while doing homework or at activities like sports.

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

A. No. Many studies of children with AD/HD have found that using stimulant medications under a doctor’s care does not increase the risk of later substance abuse. In fact, many studies have shown

that children and teens with AD/HD not treated with stimulant medications can have a higher risk of abusing illegal drugs.

MORE INFORMATION

If you would like detailed information about the many medications used to treat AD/HD, CHADD will send you a fact sheet with details about each, or you can visit the NRC Web site at www.help4adhd.org.

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The full version of this fact sheet, “Managing Medication for Children and Adolescents with AD/HD,” is also available online at www.help4adhd.org. This fact sheet should be read together with What We Know #7, “Behavioral Treatment for Children and Teenagers with AD/HD.”

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For further information about AD/HD or CHADD, please contact:

National Resource Center on AD/HD Children and Adults with Attention-Deficit/ Hyperactivity Disorder

8181 Professional Place, Suite 150
Landover, MD 20785
1-800-233-4050
www.help4adhd.org

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

Medications Used in the Treatment of AD/HD

Generic Name	Brand Names	Duration	Form	Dosage Range	Common Side Effects
Stimulants					
Methylphenidate <i>Immediate release</i>	Methylin Ritalin	3-4 hours	tablets	5 mg 10 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	
<i>Extended release</i>	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	
	Daytrana	10-12 hours (9 hours applied + up to three hours after removal)	transdermal patch	10 mg 20mg 30mg	
Methylphenidate SR <i>Sustained release</i>	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.
	Focalin XR	6-10 hours	capsule	5 mg 10 mg 20 mg 30 mg 40 mg	Moderate appetite suppression, mild sleep disturbances, transient weight loss, irritability, emergence of tics.

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

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Desipramine	Norpramin	8-24 hours	tablets	10 mg 50 mg 100 mg	25 mg 75 mg 150 mg	Has been associated with deaths from cardiac problems. Not recommended for children.
Nortriptyline	Aventyl Pamelor	8-24 hours	capsules	10 mg 50 mg	25 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 0.3 mg	0.2 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		
<i>Extended release</i>	Kapvay	12-24 hours	tablets	0.1 mg	0.2 mg	Fatigue, dizziness, dry mouth, increased activity, irritability, behavior problems, low blood pressure; abrupt discontinuation may lead to elevated blood pressure.
Guanfacine <i>Intermediate acting</i>	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.
<i>Extended release</i>	Intuniv	12 - 24 hours	tablets	1 mg 3 mg	2 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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