

# Attention Deficit Hyperactivity Disorder and Medical Treatment Options

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**Disclaimer:** None of this information, provided below, should be considered a replacement for the necessity of obtaining a consultation with a physician, who specializes in the treatment of this disorder. This information could be used to aid you in your discussions with your physician.

## ADHD Defined

ADHD is often an inherited disorder, comprising some combination of distractibility, hyperactivity, or impulsivity. Although it begins in childhood, some individuals improve as they reach adolescence, while others do not. There are many adults, who suffer from ADHD but are not aware that they have this condition. Treatment of ADHD

There is no cure for ADHD. However there are medications that can help control the symptoms, as well as a variety of educational and therapeutic measures that can also help.

## Medical Treatment of ADHD

There are two main classes of medication that can help control the symptoms of ADHD. Stimulants help with problems of short attention span, distractibility, poor memory, and hyperactivity. Antidepressants help control emotional problems such as mood swings, irritability, outbursts, low frustration tolerance, depression, etc. Various other medications can be used for particular problems, such as explosive outbursts of rage. Another category of medication, which is undergoing testing, is represented by one medication only in the U.S. That medication is Modafinil, a novel wake-provoking stimulant approved for narcolepsy.

## Stimulant Medications - Ritalin and Dexedrine

Ritalin (methylphenidate) and Dexedrine (dextroamphetamine) can help improve physical hyperactivity, mental hyperactivity (restlessness, short attention span, poor concentration), absent-mindedness and poor short-term memory, disorganization, and impulsivity (acting before thinking). Although

Ritalin and Dexedrine work approximately the same way, nevertheless some people do better on Ritalin while others do better on Dexedrine. Ritalin and Dexedrine are stimulants that probably work by increasing the activity of the frontal lobes of the brain, which are actually under active in people with ADHD. In most people, these drugs will have no effect or cause some mild stimulation such as you would get with a few cups of strong coffee.

Individuals with ADHD will find that these medications produce a very different effect; they might feel both “relaxed” and “focused” at the same time. They become less absent-minded, less forgetful, less easily distracted, and less easily bored. They become better organized, are able to accomplish much more and become able to complete tasks. Side Effects of Ritalin and Dexedrine:

When a medication gives you a symptom that you did not want, we call that symptom a side effect. Many individuals take stimulants with few side effects. Others experience mild problems. Some are simply unable to tolerate stimulants. Often we can treat annoying side effects so the individual can continue to take the stimulant. Too many people stop their medication instead of working with their physician to find a way to decrease side effects.

Ritalin and Dexedrine have been the target of a long, intensive campaign of distortion and vilification by the “Church” of Scientology. This has led to media reports, and news releases claiming adverse results from use of Ritalin. As a result of these scare tactics, many individuals are uninformed about the benefits of these medications. Ritalin is a reliable medication that has been in use for over 40 years. When used carefully and as prescribed, stimulants are very effective and safe

### **Various side effects may be experienced**

These are uncommon, and generally of little consequence. These drugs are very short acting (about 4 hours); so if they are not well tolerated any side effects soon disappear. Sometimes a change in dose is all that is required. Sometimes it is necessary to switch from Ritalin to Dexedrine, or vice versa, or try one of the newer drugs such as Wellbutrin (bupropion). Provigil (modafinil) is a different type of stimulant unrelated to Dexedrine or Ritalin and in some studies has been shown to be useful for ADDHD. Also essential fatty acids from various cold-water fish have been shown in some studies to benefit this condition.

**Reduced appetite:** This effect may be worse in the very young. It may

improve after several weeks or months. If it continues to be problematic, one may reduce the dose or time a short-acting stimulant to wear off before mealtimes. In some cases we resign ourselves to eating a large breakfast and supper followed by a very small lunch. A late evening snack can also help. The appetite often decreases soon after taking these medications, so this effect can be avoided by taking the medication just before eating.

**Insomnia:** This is usually the result of taking stimulants too late in the day.

People are remarkably different in this respect - some have no disturbance of sleep with an evening dose, or even sleep better, while others find they cannot take a dose after mid-afternoon. Remember to look at the amount of coffee you drink. Sleep difficulty is more frequent with the longer-acting stimulants such as Dexedrine Spansules. However, the sleep problem is sometimes due to the ADDHD not the medication. If the sleep problem is truly due to medication effect, give the last dose earlier in the day. Sometimes clonidine or guanfacine help one settle down for sleep. We also counsel the individual on establishing good sleep habits.

**Irritability:** Sometimes irritability may be due to the ADDHD or another psychiatric disorder. If the irritability is truly due to the stimulant, there are several options. Reduce the stimulant dose, switch to a different stimulant, add clonidine/guanfacine, or use another class of medications to treat the ADDHD.

**Emotional Flatness:** may be the result of too high a dose. It may be necessary to lower the dose.

**Sadness, Increased Sensitivity, Crying Easily:** may be a sign of too high a dose. Lowering the dose usually causes this to disappear immediately.

**Blood Pressure Changes:** Sometimes the blood pressure may be mildly elevated or even reduced. If this occurs, it may be necessary to stop stimulants, change medications, or take a blood pressure reducing medication as well.

**Rebound:** Some people who take short acting methylphenidate or amphetamine experience irritability or depression for an hour as the stimulant wears off. Sometimes this is worse than the individual's behavior before the medication was started. One can avoid rebound by spacing the doses closer together, giving a smaller dose after the final larger dose, or by switching to a longer acting stimulant. (Longer acting stimulants come in a variety of different

forms at the present time.)

**Headache:** If this does not improve with time, we may reduce the dose or switch to another stimulant. Sometimes caffeine restriction helps.

**Jittery feeling:** Eliminate caffeine or other stimulant-type medications. A small dose of a beta-blocker (a type of blood pressure medication) can block tremor or jitters.

**Gastrointestinal upset:** Take the medication with meals or eat smaller, more frequent meals.

**Depression:** This may be a delayed effect of stimulant medication. It may be more common with the long-acting stimulants. Screening for a history of depression, and treating co-existing depression can minimize this. If the depression truly is related to the medication, one may switch to another class of medications to treat the ADHD. These second-line medications would include the tricyclic antidepressants and bupropion (Wellbutrin, Provigil and/or Essential Fatty Acids.)

**Anxiety:** If an individual is anxious, the stimulants can exacerbate the symptoms. The treatment of this side effect is similar to that of depression.  
**Blood glucose changes:** Individuals with diabetes mellitus or with borderline metabolic problems may experience an abrupt rise in blood sugar. Such individuals can often take stimulants but may need closer monitoring of their diabetic control.

**Increased blood pressure:** Stimulants may cause increases in blood pressure or pulse. This is usually not significant at normal doses in most people. Individuals on very high doses of stimulants or individuals at risk for blood pressure problems should be monitored more closely. Some adults may opt to continue the stimulant and add a blood pressure medication.

**Psychosis or paranoia:** These are rare side effects. They may occur in an individual who is already predisposed to a bipolar disorder or another psychotic disorder. Psychosis may also occur when someone takes a stimulant overdose. It is important to screen for and treat certain other psychiatric disorders prior to starting a stimulant.

**Tics and stereotyped (repetitive) movements:** In the past we rarely gave stimulants to individuals with tics because we believed that the stimulant

would make the tics worse. Recent data seems to indicate that low to moderate doses of amphetamine or methylphenidate do not necessarily make tics worse. If an individual has tics, or develops them while on a stimulant, it should be discussed with the prescribing physician.

### **AVOID CERTAIN MEDICATIONS:**

If you are taking Ritalin (methylphenidate) or Dexedrine (dextroamphetamine), you should avoid over-the-counter cough and cold preparations containing phenylephrine, pseudoephedrine, and phenylpropanolamine (Sudafed, Actifed, Dimetapp, Dexatrim and others) and also any health food store preparations containing ephedra (Ma Huang). These can cause a dangerous increase in blood pressure.

**Addiction:** There is no evidence that these medications are addictive, if used the way they are intended. People with ADHD are the last people who would abuse their medications, since the medications produce no “high” for them, and if taken at greater frequency or dosage produces an unpleasant jitteriness. There is much more of a problem with adolescents (and some adults) insisting they do not need the medications then there is with people taking these meds. for inappropriate reasons.

Adolescents and adults with ADHD who have not been treated frequently often begin to self-medicate their behavior, moods, and ADHD problems with drugs or alcohol. Often, their addiction is difficult to treat until they receive appropriate treatment for their ADHD.

**Drug Interactions:** Antihistamines may interact with stimulants, causing mild confusion. Alcohol does not interact directly with Ritalin or Dexedrine. However some people find that drinking alcohol while on stimulants leads to a “hangover” the next day. Many people on stimulants lose interest in alcohol, finding they are happier without it.

Whenever you are in doubt about a possible interaction, call your physician and, stop the stimulants until you get a reading as to whether to continue the medication. Stimulants are short acting - they leave the body quickly. If you are in doubt about the interaction of stimulants and other medications, you can always stop the stimulants while you get medical advice.

**Starting Out With Stimulants:** Some experimentation is required to determine the best dosage and timing for Ritalin or Dexedrine. Keep a record of what

you take, how much you take, when you take it, and how it affects you. After a while you will be able to determine patterns that help you choose your best dosage and timing.

Avoid caffeine when beginning to take stimulant drugs. Some people find that caffeine in coffee, tea, chocolate or soft drinks will over stimulate them when they are taking Ritalin or Dexedrine. Others find that caffeine has no effect or even interferes with the benefits of these drugs.

Try to avoid changes in other medications, and big changes in lifestyle while you are experimenting with the dosage and timing of stimulant medications. If you are changing more than one thing at a time, it will be very difficult to determine what is causing what.

### **Dosing Ritalin and Dexedrine:**

Ritalin is better absorbed if taken on an empty stomach, 15 - 30 minutes before a meal, or 1 hour after. (Children usually take it with a meal, since it sometimes makes them less hungry if they take it before eating). You will probably be prescribed one 10-mg tablet before breakfast and lunch. See what effect this has on your hyperactivity, restlessness, concentration, memory, and ability to sit still or finish things, etc. Jitteriness, if it occurs, will wear off in an hour or two.

Tolerance to Ritalin (needing an increased dose as time goes on) does not occur. Once you find the right dose, you rarely need to change it, and if you do, it is only by very small amounts.

### **Timing of Regular (Short Acting) Ritalin:**

Since regular Ritalin (not the SR or Sustained Release form) lasts for about 4 hours, most people end up taking it before breakfast and before lunch. In this way, the morning dose overlaps slightly with the before-lunch dose, resulting in a sustained effect all day. Some people find a smaller dose before supper keeps them calm and focused in the evening and provides a good night's sleep. Others find that a dose before supper keeps them awake at night.

Sometimes people have an unpleasant "withdrawal" or "let-down" feeling when the Ritalin wears off at the end of the afternoon. This can often be avoided by taking a smaller dose before supper.

**Common schedules for Ritalin include:** 1. 20 mg before breakfast, 20 mg before lunch. 2. 20 mg before breakfast, 20 mg before lunch, and 10 mg before supper. 3. 10 mg before breakfast, 10 mg before lunch, and 10 mg before supper.

**Timing Of Regular (Short Acting) Dexedrine:** Since regular Dexedrine lasts for about 4 hours, most people end up taking it before breakfast and before lunch. In this way, the morning dose overlaps slightly with the before-lunch dose, so there is a sustained effect all day. Some people find a smaller dose before supper keeps them calm and focused in the evening and allows a good night's sleep.

Sometimes people have an unpleasant "withdrawal" or "let-down" feeling when the Dexedrine wears off at the end of the afternoon. This can often be avoided by taking a smaller dose before supper.

**Common schedules for Dexedrine include:** 1. 10 mg before breakfast, 10 mg before lunch. 2. 10 mg before breakfast, 10 mg before lunch, and 5 mg before supper. 3. 5 mg before breakfast, 5 mg before lunch, and 5 mg before supper.

**Long-Acting form of Ritalin:** Metadate or Concerta comes in a 18 mg. and 36 mg. dose. Most individuals eventually find that 36 mg. two times a day is the proper dose. Concerta may be given once a day and is effective for many children throughout the school day.

### **Continuous Medication?**

Some people prefer not to take stimulant medications on the weekend, if their lives are quieter and less demanding then. Others find these drugs are so helpful that they prefer to take them every day. The answer is to do what works best for you. There is no medical reason to have "medication holidays."

### **Stimulants and Sports**

Stimulants may be very helpful in "slower" sports where a lot of concentration is required, such as baseball, golf, bowling, and gymnastics. In sports where there is a lot of action and excitement, such as hockey, basketball, football, soccer, running and cycling stimulants are not necessary and may be detrimental.

### **Flexible Schedules**

After a while you will learn, which activities need stimulants, and which do not. Many people need medications in the late afternoon, and a few need them in the evening. Certain tedious, repetitive jobs require more stimulants than

others. Things that are enjoyable and interesting maybe easier to do without medication. Experiment, and keep a diary. After a while you will find what works best for you.

### **Microdoses**

A few people seem to be very sensitive to stimulants, and do well on tiny doses, such as 1 mg. to 2 mg of Ritalin or 0.5 mg. to 1 mg of Dexedrine. In these people, higher doses cause drowsiness, lethargy, and emotional “flatness.” This is more common in older people.

### **Megadoses**

A few people seem to need much higher doses, such as 30 – 120 mg of Ritalin or 20 - 60 mg of Dexedrine. This may be as a result of poor absorption from the intestinal tract or other contributing factors.

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