Is Ritalin Overprescribed?

Instructions:
1. Read both the pro and con side of this article.

2. Type out the answers to the questions below. Your answers should take approximately one to two pages, double-spaced. Turn it in to me ASAP, but no later than the last day of scheduled classes.

Questions:
1. According to Breggin, what are the reasons that teachers report witnessing improvement in the behavior of students taking stimulants?

2. Both authors discuss academic functioning, growth suppression, and side effects. Briefly summarize what each author says about these three issues.

3. Which author’s arguments did you find most compelling and why?
ISSUE 10

Is Ritalin Overprescribed?


NO: Russell A. Barkley, from Taking Charge of ADHD: The Complete, Authoritative Guide for Parents (Gullford, 2000)

ISSUE SUMMARY

YES: Physician Peter R. Breggin asserts that Ritalin and similar stimulants are dangerous addictive medications that should not be prescribed to children because they suppress growth and lead to a number of worrisome physical and psychological symptoms.

NO: Psychologist and prominent ADHD researcher Russell A. Barkley objects to criticisms of Ritalin and similar stimulants, maintaining that these medications serve as important parts of interventions aimed at helping children increase their attention and concentration.

Fifteen years ago it would have been unfathomable to imagine a school-aged child entering a school and running down classmates; yet such images have become indelibly marked in the minds of Americans. Such alarming events have caused educators, parents, and mental health professionals to increasingly focus their attention on the behavior of young people, look for ways to help underachievers reach their potential, and make sure troubled youth get the help they need. Children with attention deficit hyperactivity disorder (ADHD) have been of particular concern because of the psychological problems they experience and also because of the disruption they cause at school, at home, and in the community.

ADHD is a disorder involving inattentiveness and hyperactivity-impulsivity, and it is a condition that is usually evident early in life. Even during the toddler years, children with this condition show a range of problematic behaviors, including defiance, resistance, and hostility. Many of them are incessant in their hyperactivity, incapable of paying attention even briefly. Their lives usually involve impaired relationships and serious inner distress.

The most common interventions for ADHD involve behavioral techniques and medication, particularly stimulants such as Ritalin (methylphenidate). Proponents of medication express relief about the fact that such an effective intervention is available to help young people who need it; opponents are distressed by the increasing tendency to rely on a chemical for controlling active children rather than on methods that have been used for generations.

Peter Breggin, who is widely known and respected for his critical analysis of trends in psychiatry, is appalled by the extensive use of Ritalin-like medications. Breggin raises serious concerns about the physical dangers and psychological risks associated with these medications, and argues that the literature supporting their effectiveness is limited and biased.

Russell Barkley, who has established an international reputation as a researcher and expert on ADHD, views behavior disorders such as ADHD as serious conditions of brain dysfunction that warrant medical intervention; he asserts that stimulant medication helps ADHD children improve their attention and concentration, and therefore succeed academically.

POINT

• Like amphetamines, stimulants have a high potential for abuse and can cause potentially serious withdrawal symptoms.

• The growth of many children is suppressed or even stunted by stimulants.

• Drug-company propaganda has led the public to believe that psychiatric drugs correct biochemical imbalances; in fact, these drugs disrupt normal brain function.

• There is no evidence that stimulant drugs actually improve academic performance. Drug-induced impairments cannot make children wiser; they can only make children sit down, shut up, and do what they are told.

• There are hundreds of cases documenting Ritalin-induced psychiatric reactions including agitation, hostility, depression, psychosis and other troubling conditions.

COUNTERPOINT

• There are no reported cases of addiction or serious drug dependence on these medications; nor does research support the notion that children taking these drugs are at greater risk of abusing other substances during their teenage years.

• It is a myth to suggest that stimulant medications stunt children’s growth; recent studies have shown that this is not as much of a problem as once thought.

• ADHD is largely a genetic disorder associated with deficiencies in brain functioning; stimulant medication helps normalize functioning in most cases.

• Stimulant medication’s ability to improve children’s attention span, resistance to distraction, and concentration is beneficial to their academic performance.

• Although stimulant medications can produce temporary symptoms of psychosis at very high doses, such reactions are very rare at low doses; such reactions occur in fewer than 1% of cases and last only until the dose wears off.
The Ritalin Fact Book: What Your Doctor Won’t Tell You about ADHD and Stimulant Drugs

Of Cages and Creativity—How Stimulants Work

If you are considering the use of stimulant drugs for yourself or your children, you probably want answers to the following questions:

Do stimulants really help children?
How do they work?
Are they dangerous?

In response to these questions, too many doctors tell parents and patients that stimulants work well and have few if any serious risks. They may also explain that the drugs work by “correcting biochemical imbalances” or “improving focus and attention.” . . .

Observing Children in the Classroom

The effectiveness of stimulant drugs is often “proven” by asking teachers to rate the behavior of children in a classroom setting. The teachers will be given checklists to fill out for the children containing items that are used in the official diagnostic manual to determine if a child has ADHD. This Diagnostic and Statistical Manual of Mental Disorders, IV is published by the American Psychiatric Association (1994). It contains items such as “often fidgets with hands or feet or squirms in seat,” “often leaves seat in classroom,” “often blurts out answers,” “has difficulty waiting turn,” and “often does not seem to listen.”

Teachers and parents almost always report a reduction of these kinds of behaviors in children given stimulants. The teachers and parents have not been told that this involves a suppression of spontaneous behavior with enforced submissiveness and so they fail to recognize that the drugs are suppressing or dulling the children.


Teachers are especially likely to find that the children are “improved” because they are asked to rate behaviors such as “blurs out answers” or “leaves seat” that are especially reduced when overall spontaneity is crushed. The reduction in spontaneous behavior, as well as the enforced submissiveness, makes the children less talkative, less likely to leave their seats, and less likely to socialize with their neighbors. These reductions in overall spontaneous behavior make it easier for teachers to run their classrooms without having to pay attention to the individual child.

Exactly as in the animal studies, stimulants also make children more compulsive. For the chimpanzees, this means sitting by themselves while they groom one small spot on the arm or play endlessly with a pebble. For our children, this drug-forced compulsivity makes them focus on previously unendurable boring tasks such as copying from the board or writing something down ten times. These children often become so compulsive that they bear down too hard on the paper as they write or persist at the task even when asked to stop. Studies describe them as abnormally over-focused. However, teachers and parents are likely to mistake such behavior for a genuine “buckling down” on schoolwork and homework.

Table 1 is entitled “Harmful Stimulant Drug Reactions Commonly Misidentified as ‘Therapeutic’ or ‘Beneficial,’” When children are given Ritalin, Adderall, and other stimulant drugs, they frequently develop these kinds of reactions. Unfortunately, researchers, doctors, teachers, and parents routinely misinterpret these toxic effects as improvements in the children.

Do the children learn better? Are their scholastic abilities improved? Of course not. Drug-induced impairments cannot make a child wiser, more thoughtful, or better informed. They can only make children sit down, shut up, and do what they are told. As we shall see, there is no evidence that

<table>
<thead>
<tr>
<th>Obessive Compulsive Effects</th>
<th>Social Withdrawal Effects</th>
<th>Behaviorally Suppressive Effects</th>
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<tbody>
<tr>
<td>Compulsive persistence at</td>
<td>Social withdrawal and</td>
<td>Compliant in structured environ-</td>
</tr>
<tr>
<td>meaningless activities (called</td>
<td>isolation</td>
<td>ment; socially inhibited, passive,</td>
</tr>
<tr>
<td>stereotypical or perseverative</td>
<td>General dampened social</td>
<td>and submissive</td>
</tr>
<tr>
<td>behavior)</td>
<td>behavior</td>
<td>Somber, subdued, apathetic,</td>
</tr>
<tr>
<td>Increased obsessive-compulsive</td>
<td>Reduced communication</td>
<td>Lethargic, dozy, dazed, and</td>
</tr>
<tr>
<td>behavior (e.g., repeating</td>
<td>and socialization</td>
<td>tired</td>
</tr>
</tbody>
</table>
| chores endlessly and ineffectively) | | Bland, emotionally flat, humor-
| Mental rigidity (called | Decreased responsiveness | less, not smiling, depressed, and |
| cognitive perseveration) | to parents and other children | sad with frequent crying |
| Inflexible thinking | Increased solitary play | Lacking in initiative, spontaneity, |
| Overly narrow or excessive | and diminished overall play | curiosity, surprise, or pleasure |

Modified from Breggin (1999b, 1999c). References to the 20 clinical trials provided in Breggin (1999a, 1999b).
stimulant drugs actually improve academic performance. But they do sometimes lead to improved grades because many teachers will reward more submissive, unobtrusive behavior with better grades.

Some of the staunchest advocates of stimulants for children have in effect admitted that the drugs work by enforcing blind obedience. Russell Barkley, one of the most widely published Ritalin/ADHD advocates, uses the term “compliance” to describe this improved behavior. Stimulant drugs do indeed tend to make children more compliant, that is, more manageable and obedient. They do so at the expense of their imaginations, their creativity, their capacity to generate activity, and their overall enthusiasm for life.

“Correcting Biochemical Imbalances”

Recently I gave a lecture to students and professionals at a medical center. Initially, some of them were surprised when I explained that all psychoactive drugs disrupt normal brain function. They, too, had been misled by drug-company propaganda to believe that psychiatric drugs correct biochemical imbalances. However, several were immediately able to see the truth once I reminded them about the facts.

Research on psychoactive drugs almost always begins with animal studies. As a first step, a series of animal brains will be examined to measure the normal activity of a specific function, such as the rate of firing of a particular type of brain cell (neuron). Tiny electrodes may be inserted into the brains to measure the activity of the cells. Or the animal brain may be removed in order to determine the normal amount of a specific chemical in the region.

Next, a new series of animals will be given the stimulant drug, such as Ritalin or Adderall. Then their brains will be examined to determine how the drug changes these normal functions. For example, the brain cells may begin to fire more rapidly than normal for a while and then, later on, more slowly than normal. Or the specific chemical messenger may increase above normal in amount for a while and then decrease below normal later on.

The pharmacological action of any psychoactive drug is demonstrated by how it disrupts the normal function of an animal’s brain. That disruption is the basis of the psychoactive effect. The researchers, the drug company, the FDA, and everyone else involved in the field will then assume that the drug disrupts human brain function in exactly the same fashion. When textbooks or reviews discuss the drug’s “mode of action,” they will simply describe what has been learned from research on how the drug interferes with the functioning of the normal animal brain.

However, when the drug company and its experts get ready to present this information to the medical profession and the public, they will perform remarkable verbal sleights of hand. The known fact that the drug disrupts normal brain function will be ignored and instead the drug will be falsely promoted as correcting biochemical imbalances. The claim about correcting biochemical imbalances is a deliberate deception to make the drugs look positive. Similarly, the known fact that the drug suppresses behavior will be ignored, and in the case of the stimulants, nothing at all will be said about it. How the drug actually works will remain shrouded in mystery.

How Stimulants Cause Psychiatric Disorders

Stimulants are powerful psychoactive substances that impact the brain and mind. We have already seen that their primary or therapeutic impact involves flattening all spontaneous behavior, enforcing submissiveness, and causing obsessive focus on rote activities. Therefore, it should be no surprise that they can cause a variety of other mental abnormalities.

In reviewing adverse drug reaction reports made to the FDA concerning Ritalin, I found hundreds of cases of Ritalin-induced psychiatric reactions. Children taking Ritalin were most commonly reported to develop—in the following order—agitation, hostility, depression and psychotic depression, abnormal thinking, hallucinations, psychosis, and emotional instability (called “lability”). There were many reports of overdose, intentional overdose, and suicide attempts, confirming the risk of depression and potential suicide. . . .

I have taken several approaches to summarizing the overall adverse effects of stimulants. Table 1 . . . uses data from twenty clinical trials to describe adverse psychiatric effects such as apathy, depression, and overfocusing that are commonly mistaken for improvements in children’s behavior.

Table 2, “Toxic Reactions to Stimulants: Usually in Overdose and Occasionally at Low Doses,” is drawn entirely from the “Overdose” sections of

| Toxic Reactions to Stimulants: Usually in Overdose and Occasionally at Low Doses |
|----------------------------------|------------------|
| Agitation                        | Elevated heart rate |
| Tremors                          | Palpitations      |
| Increased neurologic reflexes    | Cardiac arrhythmias |
| Muscle twitching                 | Hypertension      |
| Convulsions                      | Enlarged pupils   |
| Coma                             | Dry mouth, nose, and eyes |
| Euphoria                         | Increased respiration* |
| Confusion                        | Nausea, vomiting, diarrhea, and cramps* |
| Hallucinations                   | Muscle breakdown* |
| Delirium                         | Hypotension, shock, and circulatory collapse* |
| Sweating                         | Panic states*     |
| Flushing                         | Assaultiveness*   |
| Headache                         |                   |
| High fever                       |                   |

*Indicates the item was taken from the FDA-approved overdose section of the labels for Dexedrine, Adderall, and Adderall XR, but not Ritalin. The remainder was taken from the Ritalin label with some overlap. The Dexedrine and Adderall labels both state that “individual patient response to amphetamines varies widely.” The Adderall XR label also states that patient responses “vary widely,” and “toxic symptoms occasionally occur as an idiosyncrasy at doses as low as 2 mg.” All of the symptoms can occur with any of the stimulants at routine clinical doses.
the official FDA-approved labels for Ritalin, Dexedrine, Adderall, and Adderall XR. Almost any adverse reaction that occurs in overdose can also occur at lower doses.

For an overview of stimulant effects taken from a broader variety of medical sources other than the drug labels, see Table 3, “Overview of Harmful Reactions to Stimulant Drugs: Ritalin, Dexedrine, Adderall, Concerta, and Metadate.”

Tables 1, 2, and 3 cover most of the adverse effects of stimulants that are likely to show up in routine clinical use. They are compiled from standard or mainstream sources that tend to approve or advocate the use of stimulant drugs. There is a great tendency in the medical literature to minimize adverse drug effects in order to support or promote the use of medications in general. Therefore, the individual sources are not as comprehensive as the data that I have compiled in this book from all of the sources. In addition, few if any sources fully address the brain damage and dysfunction produced by these drugs, including strong evidence for stimulant-induced brain shrinkage, cell death, and persistent biochemical changes.

### Stimulants Commonly Cause Mental Disorders

Stimulants commonly cause a variety of serious emotional disturbances. I am not alone in drawing this conclusion. A handbook frequently used by physicians lists the ... rates of adverse mental effects caused by stimulants [in Table 4].

The rates in [Table 4] are drawn from clinical studies. Not many parents would expose their children to these drugs if they were aware of the frequency with which the drugs can impair a child's mental life.

The studies are usually conducted by advocates for drugs and tend to minimize adverse drug reactions. Therefore, most of the rates are actually higher than reported in [Table 4]. While the rates for these adverse effects vary widely from study to study, the main point is inescapable: Stimulants frequently harm the brain and mind.

As a part of my scientific presentation at the NIH Consensus Development Conference on the Diagnosis and Treatment of Attention Deficit Hyperactivity Disorder in 1998, I reviewed eight representative controlled clinical trials to estimate the frequency of adverse effects. All of the studies were conducted by advocates of stimulants and aimed at proving that the drugs are safe and effective. I have reviewed them in the scientific literature and in Talking Back to Ritalin (rev. ed., 2001a). Based on these studies, I estimate that the reported rate of serious adverse reactions in children was as high as 10–20 percent or more. The real rate in clinical practice would be even higher.

In reviewing Table 4, it is important to realize that symptoms such as “irritability,” “agitation,” and “confused” are related to each other. They reflect gross underlying brain dysfunctions that then become manifested in varying ways. When brain function is disrupted in such a global or generalized way, almost any mental abnormality or mixture of abnormalities can result. . . .

### Table 3

Overview of Harmful Reactions to Stimulant Drugs: Ritalin, Dexedrine, Adderall, Concerta, and Metadate

<table>
<thead>
<tr>
<th>Brain and Mind Function</th>
<th>Gastrointestinal Function</th>
<th>Endocrine and Metabolic Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obsessive-compulsive behavior</td>
<td>Anorexia</td>
<td>Pituitary dysfunction, including growth hormone and prolactin disruption</td>
</tr>
<tr>
<td>Zombie-like (robotic) behavior with loss of emotional spontaneity</td>
<td>Nausea, vomiting, bad taste</td>
<td>Weight loss</td>
</tr>
<tr>
<td>Drowsiness, “dopey,” reduced alertness</td>
<td>Stomachache</td>
<td>Growth suppression</td>
</tr>
<tr>
<td>Abnormal movements, tics, Tourette's</td>
<td>Cramps</td>
<td>Disturbed sexual function</td>
</tr>
<tr>
<td>Nervous habits (picking at skin, pulling hair)</td>
<td>Dry mouth</td>
<td></td>
</tr>
<tr>
<td>Convulsions</td>
<td>Constipation, diarrhea</td>
<td></td>
</tr>
<tr>
<td>Headache</td>
<td>Liver dysfunction</td>
<td></td>
</tr>
<tr>
<td>Stroke</td>
<td>Withdrawal and Rebound Reactions</td>
<td></td>
</tr>
<tr>
<td>Mania, psychosis</td>
<td>Insomnia</td>
<td>Cardiovascular Function</td>
</tr>
<tr>
<td>Visual and tactile hallucinations</td>
<td>Excessive sleep</td>
<td>Hypertension</td>
</tr>
<tr>
<td>Agitation, anxiety, nervousness</td>
<td>Evening crash</td>
<td>Abnormal heartbeat</td>
</tr>
<tr>
<td>Insomnia</td>
<td>Depression</td>
<td>Heart disease</td>
</tr>
<tr>
<td>Irritability, hostility, aggression</td>
<td>Rebound worsening of ADHD-like symptoms</td>
<td>Cardiac arrest</td>
</tr>
<tr>
<td>Depression</td>
<td>Overactivity and irritability</td>
<td>Other Functions</td>
</tr>
<tr>
<td>Depression, suicide, easy crying, social withdrawal</td>
<td>Rebound worse</td>
<td></td>
</tr>
<tr>
<td>Confusion, memory impairments (decreased cognition and learning)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stimulant addiction and abuse</td>
<td></td>
<td></td>
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</tbody>
</table>

Modified from Breggin (1999a, 1999c).

### Table 1

Rates of Adverse Mental Effects Reported in Stimulant Clinical Trials

<table>
<thead>
<tr>
<th>Adverse Stimulant Effect</th>
<th>Amphetamines (Dexedrine, Adderall)</th>
<th>Methylphenidate (Ritalin, Concerta, Metadate ER)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drowsiness, less alert</td>
<td>5.5%</td>
<td>5.7%</td>
</tr>
<tr>
<td>Confused, “dopey”</td>
<td>10.3% (8-12%)</td>
<td>3.9% (2-10%)</td>
</tr>
<tr>
<td>Depression</td>
<td>39%</td>
<td>8.7%</td>
</tr>
<tr>
<td>Agitation, restlessness</td>
<td>More than 10%</td>
<td>6.7% (3.3% to more than 10%)</td>
</tr>
<tr>
<td>Irritability, stimulation</td>
<td>25% (17-29%)</td>
<td>17.3% (11-19%)</td>
</tr>
</tbody>
</table>

The data are from Maxmen and Ward (1995, p. 366). The numbers are percentages of patients reported in studies to suffer from the adverse effects. Numbers in parentheses represent the range reported in studies.
My clinical experience confirms the data in Table 4: Children taking stimulants frequently become very depressed and even suicidal. Their doctors often fail to recognize the source of the depression. Instead of stopping the stimulant medication, they add an antidepressant, causing even greater emotional disturbances in the child.

How common is stimulant-induced depression? Very common! ...

How Stimulants Harm the Child’s Body
... From the heart to the skin, stimulants can also harm a variety of other organs of the body. By interfering with normal growth-hormone production, stimulants impair and even stunt the growth of the entire body.

Some harmful effects on the body result indirectly from the disruption of brain function, some result more directly from toxic effects on the organs themselves, and some result from both.

Stunting Growth
In many cases, the growth of children is obviously suppressed or even stunted by stimulants. Some of the children look skinny and unhealthy as if starving, while others seem normal. Most will rebound with an unbelievably rapid growth in height and weight—if the drugs are stopped while the child is still growing. In one study, Ritalin reduced the expected monthly weight gain by 25 percent. When the drug was stopped, weight gain accelerated far above the normally expected rate.

When children seem to be growing well while taking stimulants, some doctors or parents will observe, “John’s very big; he’s growing fast.” Unfortunately, we don’t know how tall or large Johnny might have become without the drug, and the fact that he’s achieved an even above-average size says little about the drug’s actual effect on his unique genetic endowment for growth.

Too many doctors are misled into believing that growth suppression is a relatively harmless problem that results from a child losing his or her appetite. However, there’s more to it than the mere loss of appetite. The stimulants cause marked dysfunction in the production of growth hormone. Specifically, they cause an abnormal increase in growth hormone during the day and then an abnormal compensatory suppression of the hormone at night, when it most significantly affects growth.

The impact on growth hormone is so dramatic that researchers have observed that growth-hormone levels can be used as a marker for whether or not children are taking their medication. If the growth-hormone cycle isn’t disrupted, then the children are not taking the medication. Because stimulants always impair growth-hormone production, we should assume that there is always some impairment of growth, even if it remains grossly undetectable.

Some doctors used to tell parents not to worry about growth suppression because there is a compensatory growth spurt when the drugs are stopped. While the body does try to catch up when the stimulant is stopped, the phase of accelerated growth is abnormally rapid and not necessarily altogether healthy. In addition, there’s no guarantee that irreversible harm hasn’t been done along the way during weeks or months of stimulant treatment. Furthermore, nowadays children are kept on stimulants for months or years at a time, so the body is given no opportunity to go through a growth spurt.

The disruption of growth hormone should be viewed as an ominous finding. It means that all growth processes are being impaired, including the growth of the brain, heart, and lungs. The entire body relies on growth hormone to regulate its developmental processes. Citing many research reports, a respected research team wrote:

Research reveals that methylphenidate stimulates daytime release of growth hormone, disrupting the usual nocturnal release. This is troublesome since disturbances in the normal release of growth hormone may not only influence height velocity but may also impair other critical aspects of physical development such as sexual maturation.

The researchers should also have emphasized the threat to the growth of the brain and hence the mind.

The authors of a medical textbook suggest that the growth lag caused by stimulants is temporary “in most cases.” This assumes that the children are given regular drug vacations in order to catch up. Although these authors are staunch advocates of stimulants for children, they go on to recognize that “the effects on growth that the long-term use of stimulants has on children leads some physicians to believe that this drug should never be prescribed for children.” This observation—like many others in this book—should give strength to parents who believe, as I do, that children should never be given these drugs for “ADHD” or the control of behavior.

Despite decades of sophisticated research demonstrating that stimulants disrupt growth hormone, cause growth suppression, and lead to accelerated growth spurts when stopped, some drug advocates have tried to demonstrate that there are no significant effects on growth. In my experience, the doctors who make these claims typically go to extremes in order to convince professionals and parents that it’s safe to use these drugs. One such study was published in 1996 in an attempt to undermine a large, consistent body of research demonstrating growth suppression. However, the new study used only one measurement of height and weight for each child and attempted to draw conclusions from it. The researchers did not use consecutive measures on the same child to show the effect of the drug; they took one measure on each child and attempted to compare that measurement to a similar measure in a control group of children who were not drug treated. Using these dubious methods as well as a badly flawed control group and questionable statistics, the authors leaped from one single measurement to a conclusion about the long-term effect of stimulants on growth. By contrast, many other studies have used multiple measurements to show a definite inhibition of growth.
As a result of disrupting pituitary function, stimulants also interfere with the normal cycles of prolactin production. Prolactin can be found throughout the body, but its functions are poorly understood. It does, however, participate in the regulation of sexual development, yet another fact that should raise caution in regard to giving stimulants to children and adolescents.

**Causing Heart Problems**

As already noted, stimulants produce a combined assault on the heart, first by overstimulating heart rate and blood pressure, and then by weakening the muscles of the over-stressed organ. Palpitations are one signal that the heart is beating irregularly.

What's the result?

My review of spontaneous reports of adverse Ritalin effects made to the FDA disclosed a very large number of Ritalin-induced cases of cardiovascular disease. Many concerned the well-known problem of stimulant-induced hypertension. Most of them involved arrhythmias and conduction problems that sometimes cause sudden cardiac arrest. There were more than a dozen reports of cardiac arrest or heart failure. This was a relatively small portion of the 2,821 reports made during the period of time (1985 through early 1997) but presents an important signal of danger.

I have been consulted in several cases in which stimulant drugs have caused fatal cardiac arrhythmias in children. In one case, the child's heart on autopsy showed a pattern of deterioration that the coroner compared to changes he had observed in chronic cocaine addicts.

A number of animal studies confirm that stimulants such as Ritalin weaken heart muscle and reduce its function. Stimulants also cause high blood pressure, a special concern among African-American boys, who are especially prone to develop severe hypertension as relatively young adults. Weakened heart muscle combined with hypertension is, of course, a hazard for any human being.

**Causing Strokes**

Ritalin, Adderall, and all stimulants can cause strokes (cerebral vascular accidents). These potentially catastrophic events can result from bleeding or inflammation of the blood vessels in the brain. Hypertension probably plays a key role in many of these disasters. Physicians sometimes seem particularly unaware of stimulant-induced strokes, probably leading to underreporting of the problem.

Bleeding in the brain in association with oral amphetamine use has been reported in the literature since 1970. There are reports of strokes after a "single low dose exposure," but most reports have been in association with stimulant abuse.

A report in *Lancet* in 1988 described the first published case of stroke involving Ritalin in a boy receiving the drug for hyperactivity. The author observed, "Physicians who prescribe methylphenidate [Ritalin] for long-term use should be aware of this potential complication and specifically question patients regarding symptoms of cerebral ischaemia [reduced blood flow], including headache." Remember that Ritalin and amphetamine both produce gross reductions in blood flow to the brain, whereby creating the conditions for stroke.

A report in 2000 in the *Journal of Child Neurology* describes the case of an eight-year-old boy who developed vasculitis and stroke after taking Ritalin for one and one-half years for hyperactivity. These authors also issue a warning: "We draw your attention to the risk of using methylphenidate [Ritalin] for a long period of time."

Overall, stimulants pose serious cardiovascular hazards. Individuals suffering from or at risk of experiencing hypertension, heart disease, or strokes should especially avoid stimulants.

**How Stimulants Cause Withdrawal, Addiction, and Abuse**

The following remarkable warning appears in capital letters in a boxed section as the first item to be read in the Adderall and the Dexedrine labels:

**AMPHETAMINES HAVE A HIGH POTENTIAL FOR ABUSE. ADMINISTRATION OF AMPHETAMINES FOR PROLONGED PERIODS OF TIME MAY LEAD TO DRUG DEPENDENCE AND MUST BE AVOIDED.**

Although it does not appear with the same strength in the Ritalin label, this statement is equally true for Ritalin and all of the other stimulants commonly used to treat children. It should also be taken as a warning that all of these drugs cause potentially severe withdrawal reactions.

Much of the medical profession acts as if it has never been admonished that stimulant administration for prolonged periods of time "must be avoided." Instead, long-term use of stimulants is often encouraged, and parents are told to keep their children on amphetamines for months and years.

*If the medical profession were prescribing rationally, the forewarning to avoid long-term administration, and the lack of evidence for any long-term efficacy, would utterly prevent the prescription of stimulants to children or adults for more than a few weeks' duration.***

**Withdrawal Reactions and Worsening Behavior**

Symptoms of withdrawal can take place a few hours after the last dose of a stimulant, so that children commonly begin to go into withdrawal by the evening or the next morning. If a child's behavior appears to get worse or to deteriorate in any way a few hours or more after taking a stimulant drug, there's a high probability that the child is undergoing a withdrawal reaction.

Teachers often observe, "I can tell when Johnny hasn't taken his medication," meaning that they can see his behavior become more distressed or distressing. They don't realize that this is typically caused by a withdrawal reaction rather than by Johnny's own problems.
Parents and teachers sometimes believe that a child needs stimulants because the child’s behavior deteriorates when one or two doses are missed. Such abrupt changes in a child are more likely due to withdrawal symptoms than to a child’s inherent need for the drug. If we thought of alcohol or narcotics in the same way, we would think that alcoholics and narcotics addicts “needed” their drugs in order to be normal. In fact, they need to get free of their drugs in order to have a hope of becoming normal or healthy human beings.

The Ritalin label confirms, however inadequately, the danger of serious withdrawal problems. In a boxed section labeled “Drug Dependence,” it states, “Careful supervision is required during drug withdrawal, since severe depression as well as the effects of chronic overactivity can be unmasked.” The sentence is marred by spin doctoring that suggests that the symptoms are somehow being “unmasked” rather than directly caused by the Ritalin withdrawal. The label then states, “Long-term follow-up may be required because of the patient’s basic personality disturbances.” Again, this is spin doctoring of the fact that long-term exposure to these drugs, followed by withdrawal, can leave the patient with “basic personality disturbances” that the individual never had before taking stimulants.

The Stimulants

Medication is probably the most widely publicized, most hotly debated treatment for ADHD. As a whole, the hundreds of studies conducted indicate that stimulants, certain antidepressants, and clonidine (a drug used to treat high blood pressure in many adults) can be of great help to those with ADHD. The stimulants, the drugs most commonly used, have been shown to be effective in improving behavior, academic work, and social adjustment in anywhere from 50% to 95% of children with ADHD. How well your child responds may, however, depend on the presence of other problems, and the truth is that medication does not help everyone. For that reason—and because medication is no exception to the rule that misinformation about ADHD abounds—you should gather as much background knowledge as you can before agreeing to a trial of medication for your child. This article gives the most up-to-date information available on the stimulant medications. The brand names of these medications (with generic names in parentheses) include Ritalin (methylphenidate), Dexedrine (d-amphetamine), Adderall (d- and l-amphetamine combination), and Cylert ( pemoline).

Stimulant Drugs Are Dangerous and Should Not Be Taken by Any Child

During the 1980s and again in the mid- to late 1990s, an inaccurate and regrettable successful media propaganda campaign against the use of stimulants, particularly Ritalin (methylphenidate), with children was waged by a fringe religious group, causing a dramatic rise in media coverage of this medication. The 1990s campaign was fueled by the release of misleading, alarmist, and biased information about stimulant medication abuse in the United States by the Drug Enforcement Administration as part of an effort to prevent Ritalin from being reclassified as a nonaddictive drug—a change that would have made prescribing this medication more convenient for physicians. As a consequence, the use of these medications for children with ADHD continues to be controversial in the public’s mind, although there is absolutely no controversy among the scientific community as to the safety and effectiveness of these medications.
Stimulants Just Cover Up the “Real Problem” and Do Not Deal Directly with the Root Causes of the Child’s ADHD

Many parents come to us with the concern that stimulants do not treat the "real problems," but it is simply untrue. Critics of these medications mistakenly assume that a child’s ADHD symptoms stem from purely social causes, such as poor discipline or lack of love at home. . . . [T]here is no scientific evidence that purely social causes are at the root of a child’s ADHD. We now know that ADHD is largely a genetic disorder associated with deficiencies in the functioning of certain regions in the brain related to inhibition, attention, and self-control. The stimulants deal directly with the part of the brain that is underactive and gives rise to the outward symptoms of ADHD, as explained later in this article. In this sense, the stimulants are no different from using insulin for a child with diabetes. Unfortunately, like insulin, stimulants have only a temporary effect, which leads some people to believe they’re masking the problem rather than helping it. Like a diabetic who needs insulin, your child may have to take stimulant medicine daily for a long time, but these drugs are a way of tackling the problem directly. Stimulation is the only treatment to date that normalizes the attention, impulsive, and restless behavior in children with ADHD. However, even though the stimulants do improve the behavior of 70-90% of all children with ADHD, the stimulants do not normalize the behavioral problems of all of these children who respond positively to medication. For approximately 30-45% of children with ADHD, their behavior will be significantly improved but not normalized by this medication.

Stimulants Make Children “High,” as Other Drugs Do, and Are Addictive

You may have heard that adults who take stimulants often have a sense of elevated mood, euphoria, or excessive well-being. While this does happen, it is not common, and in children it is rare. Some children do describe feeling “funny,” “different,” or dizzy. Others actually become a little blear in their mood, and a few even report feelings of sadness. These mood changes occur a few hours after the medicine is taken and occur more often among children treated with higher doses. In most children, these changes are very minor.

Parents are often also quite concerned about the risk of addiction to stimulants and about an increased risk of abusing other drugs when the children become teenagers. There are no reported cases of addiction or serious drug dependence to date with these medications, and the several studies that have examined whether children on these drugs are more likely than those not taking them to abuse other substances as teenagers suggest that they are not. Indeed, several recent studies conducted by Dr. Timothy E. Wilens and colleagues at Massachusetts General Hospital (Harvard Medical School), and by Drs. Howard Chilcoat and Naomi Breslau at Henry Ford Hospital in Detroit, found that taking stimulants during childhood did not predispose children with ADHD to an increased risk of substance use or abuse as teenagers. In fact, Dr. Wilens’s study found that adolescents with ADHD who had remained on their medication during the teen years had a significantly lower likelihood of substance use or abuse than did children with ADHD who were not taking medications during adolescence. Thus, the scientific literature to date should reassure parents that they are not predisposing their children to the potential for later substance use or abuse by giving stimulants to their children for the management of ADHD. Parents should know that the most important factors in determining a child’s risk for adolescent substance use or abuse are (1) early onset of conduct disorder or antisocial behavior in the child, (2) poor monitoring by parents of the child’s or teen’s whereabouts in the community, (3) the affiliation of the child or teen with other teens who are using or abusing illegal substances, and (4) the degree to which the parents may also be using alcohol or tobacco products or illegal substances.

Stimulant Medications Stunt Children’s Growth, and Their Use Is Strictly Limited by Age

Some studies in the early 1970s seemed to suggest that children taking these medicines might be stunted in their height and weight gain. More recent and better studies have shown that this is not as much of a problem as was once thought. Your child’s eventual adult height or skeletal size is not going to be affected by taking the medicine, and the effects on your child’s weight are also likely to be minimal, resulting in a loss of one or two pounds during the initial year of treatment. Any weight lost should return by the second or later years of treatment. Keep in mind that children respond very differently to these medicines, some experiencing no weight change and others losing more than just a few pounds. Your child should be followed by your physician to make sure that any weight loss is not serious.

The initial belief in the 1970s that stimulants might stunt the growth of children with ADHD led to the common practice by physicians of recommending that children take these medications only for school days and stop taking them on weekends, on school holidays, and during summer vacations. Because we now know that the risk of growth problems arising from these medications is much less than was originally believed, it is not necessary that all children taking stimulants have such drug holidays. Many can continue to take medication throughout the weekends and summers. They will derive benefits from doing so in their relations with peers; their participation in organized clubs, sports, and summer programs; and their general behavior at home. Parents whose children experience significant behavioral problems during these and
other weekend and summer activities, and whose children are not having growth problems from the medication, should discuss with the children's physicians the possible value of continuing the children's stimulant medication during these periods.

**Stimulants Do Not Result in Lasting Benefits to a Child's Academic Achievement**

The argument that stimulants have no lasting positive effects on academic achievement is a misleading one, concocted as part of broader efforts to dissuade parents from considering the use of stimulants for their children with ADHD. If one takes a simplistic view of the term academic achievement and expects stimulants to directly increase the amount of academic knowledge and skill in a subject matter that a child acquires, then of course the stimulants will disappoint. The pills do not contain any knowledge that is automatically placed in a child's brain when consumed. A child with ADHD who does not know her multiplication tables today, while not taking any medication, will not automatically know them tomorrow after taking a dose of stimulant medication. To expect this kind of change would be silly and demonstrates the flaws in this criticism of stimulants.

What the stimulants do do is help the child with ADHD show what she knows during performance of school assignments by improving the child's attention span, concentration, resistance to distraction, and thoughtful, reflective behavior. They also make the child more available to learn what is being taught in school by reducing the child's off-task, disruptive, and otherwise inattentive behavior. Given these gains, several years of medication may very well leave the child with more academic knowledge than she would have had without medication, but unfortunately no studies have examined this issue beyond 14 to 18 months of medication use. We simply don't know about the long-term effects to academic knowledge or skills from continued use of medication over several years or more of schooling.

If we view the term **academic achievement** more broadly, as how well the child is behaving at school, getting along with peers, following classroom rules and teacher directions, completing assignments, and completing them accurately, the evidence is overwhelming that the stimulant medications produce significant improvements. Even if the stimulants do not increase a child's academic knowledge, the fact that they result in improvements in many other areas of school functioning is sufficient justification for parents to consider the possible use of these medications with their children. Such changes not only can boost self-confidence and self-esteem in the classroom setting, but can make the child more likeable to the peer group and therefore give him more opportunities to make or keep classmates as friends. They can also reduce the amount of censure, punishment, and rejection the child experiences at school from both peers and teachers, and may well preclude the child from needing to be retained in grade due to substandard academic achievement. For all of these reasons, the improvements in school adjustment and success that result from the stimulants are frequently the most common reasons for prescribing these medications for children with ADHD.

**The Side Effects**

There are many side effects that children can experience when taking these medicines, but the vast majority are minor. Again, keep in mind that if any of these are bothersome enough to warrant stopping the medication, they will likely go away once the medicine "washes out" of a child's body—within 24 hours. Most of these side effects are clearly related to the dose of medicine the child is taking: Higher doses produce more side effects. It has been estimated, however, that from 1% to 3% of children with ADHD cannot tolerate any dose of any stimulant medication.

It is impossible to predict whether your child will have any of the side effects discussed here, but we do have some revealing test findings. Over half of children with ADHD we tested in our clinic showed decreased appetite, insomnia, anxiety, irritability, or proneness to crying. However, many of these side effects (especially those associated with mood) were present when the children took a fake pill (called a placebo). This means that these side effects may represent problems that are associated with ADHD rather than with the medicine. In most cases the actual side effects were quite mild. Stomachaches and headaches were reported in about a third of the children, but these were also mild.

All of the stimulants seem to reduce a child's appetite to some degree—temporarily and mainly in the late morning or early afternoon, which explains why over half of all children on these drugs may eat little of their lunch while on the medicine. For many children their appetite comes back (sometimes with a vengeance!) by evening. That is why you should make sure that a child who is on this medicine has a chance to eat adequate types and amounts of food each day to grow well.

Your physician may find that your child's heart rate and blood pressure increase a little while taking these medicines. These changes are minor and do not place most children with ADHD at any risk. However, if your child is one of the rare children who has high blood pressure already, you should make sure your doctor takes this into consideration. Cylept may be less likely to produce these effects on heart rate and blood pressure.

Nearly half of all children placed on medication may notice that it is harder to fall asleep at bedtime after taking these medicines during the day. Most children fall asleep within an hour or so after their typical bedtime. If not, and this is a problem for your child, tell your physician so that the dose can be lowered.

All of the stimulant medications can produce temporary symptoms of psychosis (thought disorganization, rapid speech, skin hallucinations, extreme anxiety, supersensitivity to noises, etc.) at very high doses. In very rare cases this can happen at low doses. Such reactions occur in fewer than 1% of the cases and last only until the dose wears off.
CHALLENGE QUESTIONS

Is Ritalin Overprescribed?

1. Some people argue that parents and teachers play a prominent role in causing and maintaining problematic behaviors in children, because they fail to set limits or follow through with consequences for misbehavior. Taking this viewpoint, enumerate some dysfunctional styles that might contribute to children acting out of control.

2. Breggin contends that stimulants suppress spontaneous behavior with enforced submissiveness, thus dulling children. How would you go about differentiating spontaneous energy from disruptively annoying behaviors?

3. Some social critics have expressed alarm about the extent to which people are managing problems with medications such as Ritalin and Prozac. Discuss the extent to which medication provides a treatment for the basic problem (neurochemical dysfunction) or serves as a temporary method for alleviating symptoms of a more deeply rooted emotional nature.

4. Imagine that you are a psychiatrist being consulted by parents of a five-year-old boy who is reportedly “acting up” in kindergarten. They request a prescription of Ritalin for him. What kind of information would you want to have before making your decision about the prescription, and what kind of preliminary steps would you recommend before going along with the parents’ request?

5. Imagine that you are a researcher who has been given research support to study different methods of intervening in a class composed of 20 “hyperactive” boys. What research methods would you use to compare the effectiveness of Ritalin to behavioral methods aimed at reducing the activity level of these boys?

Suggested Readings


