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Ritalin Gone Wrong

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THREE million children in this country take drugs for problems in focusing. Toward the end of last year, many of their parents were deeply alarmed because there was a shortage of drugs like Ritalin and Adderall that they considered absolutely essential to their children's functioning.

But are these drugs really helping children? Should we really keep expanding the number of prescriptions filled?

In 30 years there has been a twentyfold increase in the consumption of drugs for attention-deficit disorder.

As a psychologist who has been studying the development of troubled children for more than 40 years, I believe we should be asking why we rely so heavily on these drugs.

Attention-deficit drugs increase concentration in the short term, which is why they work so well for college students cramming for exams. But when given to children over long periods of time, they neither improve school achievement nor reduce behavior problems. The drugs can also have serious side effects, including stunting growth.

Sadly, few physicians and parents seem to be aware of what we have been learning about the lack of effectiveness of these drugs.

What gets publicized are short-term results and studies on brain differences among children. Indeed, there are a number of incontrovertible facts that seem at first glance to support medication. It is because of this partial foundation in reality that the problem with the current approach to treating children has been so difficult to see.

Back in the 1960s I, like most psychologists, believed that children with difficulty concentrating were suffering from a brain problem of genetic or otherwise inborn origin. Just as Type I diabetics need insulin to correct problems with their inborn biochemistry, these children were believed to require attention-deficit drugs to correct theirs. It turns out, however, that there is little to no evidence to support this theory.

In 1973, I reviewed the literature on drug treatment of children for *The New England Journal of Medicine*. Dozens of well-controlled studies showed that these drugs immediately improved children's performance on repetitive tasks requiring concentration and diligence. I had conducted one of these studies myself. Teachers and parents also reported improved behavior in almost every short-term study. This spurred an increase in drug treatment and led many to conclude that the "brain deficit" hypothesis had been confirmed.

But questions continued to be raised, especially concerning the drugs' mechanism of action and the durability of effects. Ritalin and Adderall, a combination of dextroamphetamine and amphetamine, are stimulants. So why do they appear to calm children down? Some experts argued that because the brains of children with attention problems were different, the drugs had a mysterious paradoxical effect on them.

However, there really was no paradox. Versions of these drugs had been given to World War II radar operators to help them stay awake and focus on boring, repetitive tasks. And when we reviewed the literature on attention-deficit drugs again in 1990 we found that all children, whether they had attention problems or not, responded to stimulant drugs the same way. Moreover, while the drugs helped children settle down in class, they actually increased activity in the playground. Stimulants generally have the same effects for all children and adults. They enhance the ability to concentrate, especially on tasks that are not inherently interesting or when one is fatigued or bored, but they don't improve broader learning abilities.

And just as in the many dieters who have used and abandoned similar drugs to lose weight, the effects of stimulants on children with attention problems fade after prolonged use. Some experts have argued that children with A.D.D. wouldn't develop such tolerance because their brains were somehow different. But in fact, the loss of appetite and sleeplessness in children first prescribed attention-deficit drugs do fade, and, as we now know, so do the effects on behavior. They apparently develop a tolerance to the drug, and thus its efficacy disappears. Many parents who take their children off the drugs find that behavior worsens, which most likely confirms their belief that the drugs work. But the behavior worsens because the children's bodies have become adapted to the drug. Adults may have similar reactions if they suddenly cut back on coffee, or stop smoking.

TO date, no study has found any long-term benefit of attention-deficit medication on academic performance, peer relationships or behavior problems, the very things we would most want to improve. Until recently, most studies of these drugs had not been properly randomized, and some of them had other methodological flaws.

But in 2009, findings were published from a well-controlled study that had been going on for more than a decade, and the results were very clear. The study randomly assigned almost 600 children with attention problems to four treatment conditions. Some received medication alone, some cognitive-behavior therapy alone, some medication plus therapy, and some were in a community-care control group that received no systematic treatment. At first this study suggested that medication, or medication plus therapy, produced the best results. However, after three years, these effects had faded, and by eight years there was no evidence that medication produced any academic or behavioral benefits.

Indeed, all of the treatment successes faded over time, although the study is continuing. Clearly, these children need a broader base of support than was offered in this medication study, support that begins earlier and lasts longer.

Nevertheless, findings in neuroscience are being used to prop up the argument for drugs to treat the hypothesized "inborn defect." These studies show that children who receive an A.D.D. diagnosis have different patterns of neurotransmitters in their brains and other anomalies. While the technological sophistication of these studies may impress parents and nonprofessionals, they can be misleading. Of course the brains of children with behavior problems will show anomalies on brain scans. It could not be otherwise. Behavior and the brain are intertwined. Depression also waxes and wanes in many people, and as it does so, parallel changes in brain functioning occur, regardless of medication.

Many of the brain studies of children with A.D.D. involve examining participants while they are engaged in an attention task. If these children are not paying attention because of lack of motivation or an underdeveloped capacity to regulate their behavior, their brain scans are certain to be anomalous.

However brain functioning is measured, these studies tell us nothing about whether the observed anomalies were present at birth or whether they resulted from trauma, chronic stress or other early-childhood experiences. One of the most profound findings in behavioral neuroscience in recent years has been the clear evidence that the developing brain is shaped by experience.

It is certainly true that large numbers of children have problems with attention, self-regulation and behavior. But are these problems because of some aspect present at birth? Or are they caused by experiences in early childhood? These questions can be answered only by studying children and their surroundings from before birth through childhood and adolescence, as my colleagues at the University of Minnesota and I have been doing for decades.

Since 1975, we have followed 200 children who were born into poverty and were therefore more vulnerable to behavior problems. We enrolled their mothers during pregnancy, and over the course of their lives, we studied their relationships with their caregivers, teachers and peers. We followed their progress through school and their experiences in early adult-

hood. At regular intervals we measured their health, behavior, performance on intelligence tests and other characteristics. By late adolescence, 50 percent of our sample qualified for some psychiatric diagnosis. Almost half displayed behavior problems at school on at least one occasion, and 24 percent dropped out by 12th grade; 14 percent met criteria for A.D.D. in either first or sixth grade.

Other large-scale epidemiological studies confirm such trends in the general population of disadvantaged children. Among all children, including all socioeconomic groups, the incidence of A.D.D. is estimated at 8 percent. What we found was that the environment of the child predicted development of A.D.D. problems. In stark contrast, measures of neurological anomalies at birth, I.Q. and infant temperament — including infant activity level — did not predict A.D.D.

Plenty of affluent children are also diagnosed with A.D.D. Behavior problems in children have many possible sources. Among them are family stresses like domestic violence, lack of social support from friends or relatives, chaotic living situations, including frequent moves, and, especially, patterns of parental intrusiveness that involve stimulation for which the baby is not prepared. For example, a 6-month-old baby is playing, and the parent picks it up quickly from behind and plunges it in the bath. Or a 3-year-old is becoming frustrated in solving a problem, and a parent taunts or ridicules. Such practices excessively stimulate and also compromise the child's developing capacity for self-regulation.

Putting children on drugs does nothing to change the conditions that derail their development in the first place. Yet those conditions are receiving scant attention. Policy makers are so convinced that children with attention deficits have an organic disease that they have all but called off the search for a comprehensive understanding of the condition. The National Institute of Mental Health finances research aimed largely at physiological and brain components of A.D.D. While there is some research on other treatment approaches, very little is studied regarding the role of experience. Scientists, aware of this orientation, tend to submit only grants aimed at elucidating the biochemistry.

Thus, only one question is asked: are there aspects of brain functioning associated with childhood attention problems? The answer is always yes. Overlooked is the very real possibility that both the brain anomalies and the A.D.D. result from experience.

Our present course poses numerous risks. First, there will never be a single solution for all children with learning and behavior problems. While some smaller number may benefit from short-term drug treatment, large-scale, long-term treatment for millions of children is not the answer.

Second, the large-scale medication of children feeds into a societal view that all of life's problems can be solved with a pill and gives millions of children the impression that there is something inherently defective in them.

Finally, the illusion that children's behavior problems can be cured with drugs prevents us as a society from seeking the more complex solutions that will be necessary. Drugs get everyone — politicians, scientists, teachers and parents — off the hook. Everyone except the children, that is.

If drugs, which studies show work for four to eight weeks, are not the answer, what is? Many of these children have anxiety or depression; others are showing family stresses. We need to treat them as individuals.

As for shortages, they will continue to wax and wane. Because these drugs are habit forming, Congress decides how much can be produced. The number approved doesn't keep pace with the tidal wave of prescriptions. By the end of this year, there will in all likelihood be another shortage, as we continue to rely on drugs that are not doing what so many well-meaning parents, therapists and teachers believe they are doing.