given all the public attention, it would be difficult for an American educator to be unfamiliar with the term Attention Deficit/Hyperactivity Disorder (ADHD). But the conflicting information presented in magazines, newspapers, books, and on television is more likely to confuse than to inform. Because of all the public attention and the resulting possibility of confusion, we decided to study the subject comprehensively for ourselves.

Our first dilemma was to find a universally accepted definition of ADHD. The DSM-IV™—Diagnostic Statistical Manual of Mental Disorders, Fourth Edition—describes ADHD as "a persistent pattern of inattention and/or hyperactivity-impulsivity that is more frequent and severe than is typically observed in individuals at a comparable level of development." Professionals generally agree on a list of 18 diagnostic behavioral characteristics, any six of which are supposed to indicate that a person has ADHD. (We will address these characteristics later in the article.) But professionals do not agree on what ADHD is or is not, what causes it, or how it should be treated.

We believe that regardless of what these behaviors are called or what causes them, students who exhibit such tendencies can be helped by teachers and parents without resorting to ADHD categorical treatment. Such treatment often leads only to labeling and diluted educational programming at best or inappropriate and even dangerous medication at worst.

Having stated our position, however, we need to share the logical journey by which we arrived at it. We concluded that
there are two primary positions on ADHD:

1. ADHD is a disorder of brain functioning. The primary treatment is medication.

2. ADHD is a collection of normal behaviors exhibited in what may be viewed as inappropriate settings. The primary treatment is effective instruction by parents and teachers.

Number one is perhaps the most popular theory. It holds that ADHD is a function of neurophysiology, or brain chemistry. After reading the results of a number of research studies and analyses of such studies, we can find no conclusive evidence to support this position. For now, the evidence is equivocal. For every scientist who subscribes to the brain-based theory of ADHD, another faults the data upon which the first expert has built his or her case. For example, in The War Against Children, the authors systematically evaluate the studies that claim to support a brain-disease dysfunction explanation for ADHD and conclude that there is no clear evidence to validate this theory.

ADHD Studies

The most famous ADHD brain study to date was conducted by Alan Zametkin and his associates at the National Institute of Mental Health in Bethesda, Maryland. The results of that study, published in the New England Journal of Medicine, were almost immediately reported by both the professional and popular press. Using the data from this study, some scientists asserted that the brains of individuals afflicted with ADHD differed from those of normal people.

Although Zametkin himself does not claim that this study proved anything conclusively, ADHD advocates have used the study as a platform for their opinions. Consider these facts:

• Zametkin's experimental group was predominantly male, whereas the non-ADHD control group consisted of a more balanced number of males and females. Therefore, the results may reflect nothing more than a sex-linked difference.

• The study used professionals who believed that as children they had the characteristic symptoms of ADHD. Not only were they all self-diagnosed, but one wonders how they became professionals if they were all afflicted with a brain disease.

• The only measurable physiological difference between the two groups was in their glucose metabolism rates.

The American Association of School Administrators recently presented two of the major positions in the ADHD controversy. Advocating the theory of a neurobiological basis, Wade Horn, executive director of Children and Adults With Attention Deficit Disorder (CHADD), holds up the Zametkin study as "a landmark study . . . which documented the neurobiological underpinnings of ADD through brain imaging." On the same page, John George, of the Instructional Support System of Pennsylvania, presents evidence suggesting that the Zametkin study cannot support a neurobiological explanation of ADHD.

In reviewing the literature on ADHD, we found extensive references to the subject of neurotransmitters, chemicals that facilitate brain activity. Persons with ADHD are alleged to have faulty neurotransmitters whose function can be improved by medication. But of the hundreds of neurotransmitters in the brain, only a few have been studied. None of the research studies, many of which have been funded by pharmaceutical companies, supports the theory that ADHD is the result of abnormal brain function.

By far, the most common treatment for ADHD in children and adults is the stimulant Methylphenidate, or Ritalin. Parents are not told that Ritalin, as a stimulant, can cause the very things it is supposed to cure—distractability, hyperactivity, and aggression. When this happens, the child is likely to be given higher doses of the drug, or an even stronger agent, such as the neuroleptics Mellaril or Haldol, resulting in a vicious circle of increasing drug toxicity.

Rarely are parents informed that Ritalin can cause permanent disfiguring tics. I've recently seen the case of a young boy in whom routine dosage produced frequent, disfiguring muscle spasms and tics of the head, neck, face, eyes, and mouth. . . .

Most surely, parents will not be told about any danger of permanent brain damage from long-term exposure to Ritalin. But how then to account for the following: no consistent brain abnormalities have been found in children labeled ADHD, but one study has found brain shrinkage in adults labeled ADHD who have been taking Ritalin for years.

In spite of claims that stimulants like Ritalin work wonders on some children, virtually no evidence exists to prove that such drugs improve academic performance. One of the definitive studies on the effects of methylphenidate on academic achievement was done by Steven Forness of UCLA. He reports no change—positive or negative—in the academic functioning of students who took the drug. A study by Thompson et al. at the University of Nevada, Reno, not only corroborated Forness's findings but also showed that ADHD students made impressive academic gains when teaching was adjusted to suit their individual instructional levels. (See the article by Tucker and Tucker in this issue for more information about assessing and teaching to a student's instructional level.)

Diagnosing ADHD

With all the claims about a neurobiological basis for ADHD, it is interesting that none of the hundreds of studies and tests has found even one neurobiological
Regardless of what these behaviors are called or what causes them, students who exhibit such tendencies can be helped by teachers and parents without resorting to ADHD categorical treatment.

tant to engage in schoolwork or homework.
- Often loses things necessary for tasks or activities.
- Often is easily distracted by extraneous stimuli.
- Often forgets during daily activities.

Characteristics described as symptoms of hyperactivity-impulsivity, which have persisted for at least six months to a degree that is maladaptive and inconsistent with developmental level:
- Often fidgets with hands or feet or squirms in seat.
- Often leaves seat without permission.
- Often runs about or climbs excessively in inappropriate situations.
- Often has difficulty playing quietly.
- Often acts as if “driven by a motor.”
- Often talks excessively.
- Often blurts out answers before questions are completed.
- Often has difficulty awaiting turn.
- Often interrupts in conversations and games.

Note that the preceding list contains not one characteristic that is primarily neurological or physiological. Each of the 18 characteristics could be exhibited for any number of reasons. One must help but be struck by the highly subjective nature of a diagnosis based on such a list. Yet we are to believe that if a student exhibits any six of these behaviors “often” over a six-month period (or longer), then that student has ADHD. One of the primary problems, of course, is that one person’s “too often” is another person’s “not often enough” or “just right.” Even Mark Stein, one of ADHD’s primary proponents, says: “We need to find more precise ways of diagnosing it than just saying you have these symptoms.”14 The nature of ADHD diagnosis reminds us of the story of Goldilocks and the three bears: What was too hard for Papa Bear and too soft for Mama Bear was just right for Baby Bear.

There has to be a better way to meet the needs of children who are said to have ADHD than to medicate them. That is not to say that there is no such
thing as a neurological disorder requiring medication, but such a diagnosis and treatment should be a last resort rather than the course of least resistance.

We are convinced that most children identified as having ADHD are really victims of a system of education that is intolerant of normal human variance. Teachers can learn to meet the needs of these children by addressing their “symptomatic” behaviors directly in an environment of supportive appreciation and love.

Several changes are needed to meet the needs of students in Seventh-day Adventist schools who have been diagnosed as having ADHD. The first is to train teachers and educational personnel to meet the individual learning needs of all students, including those who vary in the degree to which they sit still, pay attention, and exhibit other behaviors symptomatic of ADHD. We need to do the following:

- Engage the SDA educational establishment in a dialogue about the nature of a Christian education that systematically denies that education to children on the basis of such characteristics as those symptomatic of students with ADHD.
- Include informed discussion in our teacher-training classes about the values associated with categorical labels such as ADHD.
- Develop a team of Christian educators who can provide training for parents, teachers, and other church members, as well as the members of our communities, on how to value and even celebrate the natural diversity of students that exists in every church and community.
- Establish a mailing list of interested professionals who can share material and information about effective instruction of ADHD, as well as other types of learning problems.

With the active concern of caring parents, teachers, and church workers, the challenges presented in SDA schools by students diagnosed as having ADHD can be met successfully. We believe that the creativity and energy of these students represents a powerful untapped asset.

In spite of claims that stimulants like Ritalin® work wonders on some children, virtually no evidence exists to prove that such drugs improve academic performance.

NOTES AND REFERENCES

5. Wallis, p. 46.
7. Breggin and Breggin, pp. 82-84.
12. Wallis, p. 46.
13. The characteristics are somewhat abbreviated in the interest of space—for the exact detailed listing, see the DSM-IV™.

For ideas on helping ADHD students in the classroom, see Carol J. Schoun’s two-part article in the February/March and April/May 1993 issues of the Journal, or send $2 for a reprint to The Journal of Adventist Education, 12501 Old Columbia Pike, Silver Spring, MD 20904, U.S.A.

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