The Horizon

A Newsletter for Alumni, Family and Friends of The Shelton School

Volume 15, Number 1 February 2004

From the Director's Desk

Current Knowledge on ADHD

Research continues to shed light on Learning Differences (LD), including Attention Deficit Hyperactivity Disorder (ADHD). In *ADHD, a Booklet for Parents* by Larry B. Silver, M.D., he states, "Between 10 and 20 percent of all school-aged children have learning disabilities. Of those with LD, about 20 to 25 percent will also have ADHD. LD and ADHD are two separate problems; however, they occur together so frequently that it is useful to consider them related. In addition, most children and adolescents with LD and/or ADHD develop emotional social, and family difficulties. These are the result of frustrations and failures experienced with family and peers and at school."

The following are questions about ADHD that are posed to Shelton staff about ADHD. I have included quotes from several professionals to help provide the answers.

Does ADHD really exist?

Yes. There are individuals who are unable to sustain attention, focus, and concentration. Without sustained attention, information given cannot be stored consistently in memory. This, of course, causes difficulty in making academic progress. Technically, the "prevalence estimates for ADHD vary widely...Nationwide estimates of prevalence suggest that between 3% and 9% of children are affected (e.g. American Psychiatric Association, 1987, 1994)...The core clinical features of ADHD, many of which can be detected early as three years of age (Campbell, et al., 1986; Palfrey et al., 1985) and persist through the school years, include developmentally inappropriate activity levels, low frustration tolerance, impulsivity, poor organization of behavior, distractibility, and an inability to sustain attention and concentration (Pelham, 1982)...Unfortunately, the core clinical symptoms of ADHD (inattention, impulsiveness, and hyperactivity) reflect impairment in precisely the domains of functioning that are central to mastery of the major developmental tasks of childhood." (*Journal of American Academy of Child and Adolescent Psychiatry*, 34.8, August 1995)

The *Developmental Statistical Manual* of the American Psychiatric Association indicates three types of ADHD:

1. ADHD Inattentive Type
2. ADHD Hyperactive Type
3. Combined Type

The areas of academic difficulty most frequently seen in students with ADHD are math, comprehension, and written expression. Social skills are frequently an area of weakness.

What causes it? Is it genetic?

ADHD can be hereditary or the result of insult or injury. In many families there is a history of ADHD. According to Dr. Gerald J. LaHoste and his colleagues at The University of California at Irvine, and the University of Toronto, "hyperactivity has long been known to run in families; but Dr. LaHoste's work is the first to purport to show why. His group focused on the dopamine D4 receptor, one of five types of dopamine receptors in the brain. . . Dopamine is a hormone used by

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brain cells to transmit messages among themselves . . .Researchers found that about half of the ADHD children had a D4 gene containing a unique segment that repeats itself seven times. This aberrant form of the gene was found in only 21 percent of children in the control group. . . The new findings shed light on the activity of Ritalin, which is known to stimulate dopamine release in the brain." (Gene linked to hyperactivity disorder in children, *The Dallas Morning News*, May 1, 1996)

What are the academic challenges?

Abstractions are the challenge for many with ADHD. Math and inferential comprehension require reasoning in the abstract. Many ADHD individuals, though intelligent, are very concrete and literal in their thinking. Abstraction in math can be made more understandable if manipulatives are consistently used. Reading comprehension requires literal comprehension (Who discovered America?) and inferential comprehension (As the result of the Industrial Revolution, how did life change in America?). Implied messages, innuendo, even sarcasm, require higher-level skills for abstraction. Many, but by no means all, individuals with ADHD have difficulty with abstractions.

What are co-existing conditions?

Individuals with ADHD may also have depression, anxiety, oppositional defiant disorder, obsessive-compulsive disorder. These disorders can occur alone or in any combination.

Depression or anxiety may be mistaken for ADHD. Bipolar Disorder is sometimes missed, and a diagnosis of ADHD is given. The Excite.Health with WebMD describes conditions with similar symptoms of ADHD.

Oppositional Defiant Disorder (ODD)

About half the children diagnosed with ADHD also have ODD. The most common symptom for this disorder is the child's refusal to follow any or all instructions or directives. In addition to displaying inattentive and impulsive behavior, these children demonstrate aggression, have frequent temper tantrums, and display antisocial behavior. Up to 25% of children with ODD have phobias and other anxiety disorders, which should be treated separately.

Pervasive Developmental Disorder (PDD)

PDD is rare and usually marked by autistic-type behavior – hand-flapping, repetitive statements, slow social development, and speech and motor problems. If a child who has been diagnosed with ADHD does not respond to treatment, the parents might inquire about PDD, which often respond to antidepressants.

Primary Disorder of Vigilance

Primary disorder of vigilance is a term for a syndrome that includes poor attention and concentration as well as difficulties staying awake. People with vigilance disorder tend to fidget, yawn and stretch, and appear to be hyperactive in order to stay alert; they typically have kind and affectionate temperaments. The condition is inherited and gets worse with age, but is treatable with stimulants.

Bipolar Disorder (Manic Depression)

A recent study found that as many as 25% of children diagnosed with ADD may also have bipolar disorder, commonly called manic depression. Indications of this problem include episodes of depression and mania (with symptoms of irritability, rapid speech, and disconnected thoughts), sometimes occurring at the same time.

What about medication?

"There are billions of nerve cells in the brain; most inter-connect with the others. Electric impulses pass from nerve to nerve throughout the brain. The impulse goes from one nerve to another across microscopic space called a synapse. Chemical substances called neurotransmitters are present in the synapse. The medications used for psychiatric disorders alter the quantity of neurotransmitters in the synapses. This alters the electrical flow, which may then affect the way a person thinks, feels, and/or reacts. When psychoactive medication is given, it affects the neurotransmitters in all the brain's synapses. Some medications have partial

selectivity for specific areas of the brain. For example, stimulants seem to have the greatest effect in the area of the brain controlling motor activity and attention span. However, stimulants will also affect the mood, appetite and sleep centers of the brain. Researchers are continually trying to develop drugs that are so specific they affect only the area of the brain that is malfunctioning." (Psychoactive medications used for children, Dan A. Myers, M.D, F.A.P.A, November 2003)

Is medication the only treatment?

"It's an important aspect of treatment. We find that most parents and children with ADHD (adults and their spouses as well) benefit for attention and behavior management counseling. There are also a number of important school (or on the job) interventions that help. New forms of treatment (like Biofeedback) are also proving to be helpful. Of course, any additional problems need to be addressed as well. However, in many cases, medication is needed." (All you ever wanted to know about Attention Deficits but didn't know whom to ask, Corman, Clifford L. M.D., et al., Universal Attention Disorders, Inc., 1997)

The American Academy of Pediatrics estimates that nearly 9% of school-age children are handicapped by ADD, which can be diagnosed to 95% confidence using the Conners scales. More than 200 controlled studies, involving more than 6,000 subjects, clearly indicate the safety and effectiveness of stimulants as a primary treatment modality for ADD. A vast clinical experience over more than 40 years supports this research. Stimulants do not "dope" kids, they enable certain young people to overcome serious handicaps and perform up to their potential both academically and socially. The National Institute of Mental Health (NIMH) recently published its Multimodel Treatment Study of ADD, showing that stimulants alone are a better treatment for ADD than the best behavioral management programs that have yet been developed." (John M. Rathbun, M.D., Aboite Behavioral Health Services, Fort Wayne, Indiana, *The Wall Street Journal*, February 8, 2001)

Do children "outgrow" ADHD?

"Most do not. Clinicians used to believe that ADHD was 'outgrown' in the early teen years because the hyperactivity component generally 'drops out' or lessens considerably by then. Since the incidence studies relied on behavior ratings that stressed the hyperactivity component, it's easy to see why we used to think that ADHD just disappeared. In reality, we now know that less than half of the children with ADHD will 'outgrow' it." (All you ever wanted to know about Attention Deficits but didn't know whom to ask, Corman, Clifford L. M.D., et al., Universal Attention Disorders, Inc., 1997)

Dr. Edward Hallowell in his books *Driven to Distraction* and *Answers to Distraction* discusses five factors which are important in managing ADHD. These include:

- Adequate sleep
- Nutritionally balanced diet
- Regular exercise
- Prayer or meditation
- Medication, if necessary

"The treatment of ADD varies considerably from person to person. Depending on the severity and complexity of the situation, the treatment may last from a few sessions to several years. Sometimes the treatment consists just in making the diagnosis and providing some education. Sometimes the treatment becomes very involved, requiring years of individual and family therapy, various medications, and much persistence and patience. Sometimes there is spectacular improvement; sometimes the change is so slow that it is difficult to recognize. There is no one recipe for the treatment of ADD." (*Driven to Distraction*, Hallowell, M. Edward, M.D., Simon & Schuster, 1995, p. 262)

Parents and teachers must keep abreast of the current body of knowledge about ADHD, so that together we can provide the best individualized educational programs for today's students.