TEN KEY FACTS ABOUT ADD AND ADHD

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ADD/ADHD occurs in an average of **five to twelve percent** of all children worldwide. However, rates of ADHD vary around the globe and in the United States. Within the U.S., rates above twelve percent have been reported in several states including parts of Arizona and upstate New York. Boys with ADHD outnumber girls approximately three to one. The primary difference between girls and boys with ADHD is that boys are more aggressive. The primary observable difference between children and teenagers is a reduction in hyperactivity during the teen years, which is often replaced by restlessness. In addition, girls may be react more emotionally because of their hormonal changes.

ADD and ADHD are **complex neurobiological disorders** in which neurotransmitters, the chemical messengers of the brain, do not work properly. Researchers believe the neurotransmitters, norepinephrine, dopamine, and serotonin are deficient. Through the use of PET scans, NIMH researchers have found reduced blood flow and activity levels in the brains of adults with ADHD when they were working on thinking tasks. Certain structures, the white matter that carries messages between neurons, are also smaller. But there is no indication of brain damage.

There are **two distinctly different types** of Attention Deficit Disorder: 1) AD/HD, predominately hyperactive and impulsive and 2) AD/HD, predominately inattentive, without hyperactivity. Teachers call this ADD. A third condition which is a combination of these two types of attention deficits is known as 3) AD/HD combined type.

All children with ADD or ADHD **are not alike.** Since symptoms of ADD or ADHD may be mild, moderate or severe or combined with other conditions, adults will see variability in skills and maturity levels in students with attention deficits.

ADHD often **occurs with other conditions**. According to NIMH research, two-thirds have at least one other coexisting condition such as Learning Disabilities (25-50%), Tourette Disorder (11%), Anxiety (37%), Depression (28%), Bipolar (12%), Substance Abuse (5-40%), Oppositional Defiant Disorder (59%), or Conduct Disorder (22-43%) may often accompany ADD or ADHD. Most research is done on children. However, when information is gathered on teenagers, the occurrence of these conditions tends to be higher. For example, up to 50 percent of teenagers with ADHD were diagnosed with anxiety. When symptoms are severe plus co-occurring conditions are present, the attention deficit is much more challenging to the child, family and school to diagnose and treat effectively. (Visit www.archpsyc.ama-assn.org for a copy of the research study results; at the website click "Past Issues" December 1999.

A **four to six year developmental lag** in age-appropriate skills, known as adaptive functioning, may be present. Dr Barkley's research reports developmental delays of roughly 30 percent in areas such as in motor skills, self-help abilities, personal responsibility, independence, and peer relationships. Consequently, these students may seem less mature and responsible than their peers. A sixteen-year-old may act more like a ten or eleven-year-old, but want the freedoms of a twenty-one year old.

Several **behaviors linked to deficits in neurotransmitters** often accompany ADD or ADHD causing problems at home and school. Students with attention deficits may experience problems with some but not all of these behaviors:

- **Executive functioning skills** are critical for succeeding in school, yet are often lacking in 50 percent of students with attention deficits. Simply stated, executive function refers to the brain's function as a CEO to analyze, organize, and plan. (For more information read the section on Executive Function under "School Success".) Deficits in key executive functioning skills that interfere with their ability to do well academically may include:
- **Working memory,** (holding facts in your head and manipulating them to guide a response, such as, comprehending what is read or working a math problem or writing an essay; putting events in sequence so they make sense; remembering a mental "to do" list such as steps for completing math problems or writing an essay; remembering math formulas, an assignment, homework or chores; pulling memories from the past to avoid making the same mistakes in the future;)
- **control of emotions**, (low frustration tolerance; getting upset and showing emotions more readily, emotional outbursts, arguing or talking back to teachers, or fighting;)
- **internalizing language,** (using "self-talk" to guide behavior, "I'd better get started on my school work or my teacher will get on my case" "I'd better not get into a fight or I may be sent to the principal and suspended."),

- **analysis and synthesis** (taking the whole apart and putting it back together, writing an essay in an organized sequential manner, answering questions about the overall theme of any reading material, e.g. "the big picture" of a novel or section in history).
- **Forgetfulness and disorganization** negatively impact completion of school work (forgetting to do or turn in homework and tests, forgetting due dates for projects, to stay after school, or for detention.)
- **Variability in school work** from day to day and class to class is often baffling to teachers and parents. Some days they can do the work completely and accurately and most other days they can't. Without medication, the student's ability to force himself to continually refocus on school work is impaired.
- **Not learning from punishment and rewards** as easily as other children makes teaching and disciplining them more difficult. Misbehavior may be repeated. They "don't seem to learn from their mistakes." So the student "knows what to do but doesn't always do what he knows."
- **An impaired sense of time** may result in tardiness, difficulty estimating time, not allowing adequate time for homework and school projects, and difficulty planning ahead especially for completing assignments and long-term projects.
- **Sleep disturbances,** common in students with ADHD (56%), may mean the child has trouble falling asleep and waking up. Furthermore, half are not getting restful sleep and are still tired even after eight hours of sleep. Consequently the student may be sleep deprived and sleep in class.
- **Levels of alertness.** These students have trouble regulating, not only levels of waking and sleeping, but also, level of alertness. They may have difficulty staying alert enough to listen and take class notes.
- **Transitions and changes in routine,** such as changing classes, lunch, recess, having a substitute teacher, or riding the bus home after school are often high-risk times for misbehavior.

ADD and ADHD **run in families**. Forty to fifty percent of all children with ADHD have at least one parent and 30 percent have a sibling with the condition.

Medication works effectively for most children [75-90%]. When it works properly, school work and behavior will improve significantly. The new long-acting medications like Adderall and Concerta last 8 to 12 hours and have been a godsend for teenagers. Strattera, a non-stimulant, provides 24-hour coverage. Students can make it through a whole school day without having to go to the office and take additional medicine. Unfortunately, short-acting stimulant medications like Ritalin and Dexedrine often wear off during two key transition times: lunchtime and the bus ride home after school. Plus medication doesn't seem to significantly correct problems related to disorganization, forgetfulness, and their impaired sense of time.

Teenagers don't outgrow ADD or ADHD. For twenty five (25) percent, the symptoms of ADD or ADHD do not cause major problems in adulthood: adults often find a career that is compatible with their personality so symptoms don't present problems in the workplace, symptoms become less severe with age, or the adult learns to compensate. Another 50 percent will cope pretty well but will probably struggle at times. However for other adults roughly 10-20 percent, symptoms of ADHD may present serous lifelong challenges. Continuing to take medication will be a necessity for some.

Excerpts from Chris A. Zeigler Dendy's book, ***Teaching Teenagers with ADD and ADHD.*** 2000.

Different diagnostic labels are given for this condition by various groups. The American Psychiatric Association uses AD/HD as the diagnostic term for all types of this disorder. The official criteria are contained in the ***Diagnostic and Statistical Manual, 4th revision*** *[DSM-IV]. The US Department of Education refers to it as ADD and ADHD*