



## **Attention Deficit Hyperactivity Disorder**

### **A New Way to Understand an Old Problem**

(For Parents)

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Many people think of ADHD as a relatively newly described problem, a fad diagnosis that is causing doctors to prescribe drugs in ever-increasing amounts to a population of people that use the medications to gain an advantage in school performance. It is often said that anyone's performance in school would be enhanced by use of these drugs. The evidence for the latter is sorely lacking. It turns out that ADHD is one of the oldest described disorders in medicine. In 1798, a Scottish physician named Alexander Crichton devoted a whole chapter in a book about mental disorders to describe a group of people who exhibited difficulty sustaining attention combined with significant emotional control issues. He was describing a patient population that today would fall within the diagnostic label of ADHD. The first use of stimulants in people with these symptoms was in 1937 and amphetamines became the mainstay in treatment until the early 60's when Ritalin was promoted for use in this disorder.

So, ADHD is not a fad diagnosis. It has been documented over many years. The diagnosis has been thought of in terms of observable behavior: **restlessness of body and mind, poor impulse control and difficulty with focus with distractibility**. But these characteristics do not describe the spectrum of impairment seen in ADHD—they don't address questions about the problems people with ADHD have in many other areas. Why is it that people with ADHD can't get started on a task unless the task is interesting to them? Why do people with ADHD have such difficulty prioritizing the steps needed to accomplish a goal or estimating the time necessary to achieve the goal? Why do people with ADHD have such difficulty shifting from one task to another? Why are these people commonly emotionally labile? Why is it that they forget to do what they came to do? And why do these people have difficulty recognizing the effects of their behavior and making corrections in behavior based on what they have observed? A new way of looking at ADHD offers answers to these questions.

Thomas Brown PhD is a psychologist affiliated with Yale University School of Medicine. He has for many years studied Executive Function deficits in ADHD. His conclusion is that ADHD is really a syndrome of Executive Function deficits rather than the more simplistic triad of observed behavioral symptoms. Seeing people with ADHD through the

lens of EFD (Executive Function Deficits) allows teachers, parents and clinicians to understand why the child with ADHD doesn't turn in his homework, why children with ADHD are so disorganized, why they get off task and end up doing something else, why they can be told not to do something and seconds later do the thing they were warned not to do. The lens of EFD allows us to change our tactics in order to help these children find effective ways around the problems that plague them so they can be successful.

Dr. Brown divides executive functions into 6 domains that really help explain the answers to the questions above and more. These 6 domains are:

1. **Activation:** setting goals, prioritization of tasks related to the goal, starting on a task, estimating the time necessary to finish a task
2. **Attention:** attending to the task at hand, maintenance of attention and appropriately shifting attention as necessary to complete a task
3. **Effort:** sustaining effort for long enough to complete tasks and reach a goal
4. **Emotion/Affect:** regulating emotional responses to situations and frustrations
5. **Memory:** short term or working memory—remembering what one has set out to do or even what one just read in a book, remembering what someone has just said or a rule expressed
6. **Action:** perception of one's behavior and its effect on a situation or on others. If one can perceive the effect of behavior, one has an opportunity to change behavior

Finally, deficits in executive function look to an observer like immaturity whereas a child with excellent executive function will strike the observer as very mature and responsible. Russell Barkley commonly states that children with ADHD are, on average, 30% behind in functional development. That means that a 10 year old child with ADHD functions, on average, is at the level of a 7 year old because of EF (executive function) impairment. When medication treatment works very well, this maturity deficit can completely disappear.

It is important to recognize that persons with ADHD are **often gifted** in ways that the person with perfect EF is not. When quick action is called for, don't ask the person with perfect EF to respond. I listened yesterday to an engineering student tell people about the tale of the Virginia Tech shootings. He was in the classroom where the gunman first started shooting people and it took him a long time to recognize this was not a joke and that he better get down or he would be soon dead—He survived because he was in the farthest corner of the room from the gunman. It was painful to hear him tell the story because he couldn't act either defensively or offensively immediately because he had to methodically process what was going on before he could react. A person with ADHD would react instantly to either protect himself or take out the gunman. I often make a comparison between a librarian and a policeman. Could they effectively switch roles? Not likely. Policemen, firemen, salesmen, first responders, politicians tend to be over-represented with individuals with ADHD. Librarians and bookkeepers, people who do maintenance jobs and repetitive organizing work are underrepresented with ADHD. A person with ADHD couldn't do their work, but they couldn't do the policeman/fireman/salesman roles either.

Because persons with ADHD are highly alert to their surroundings (a different way to say distractible) they collect enough data about their surroundings and their movements to construct a mental model of the world they know and they know exactly where they are in that model of the world.

People with ADHD can be very intuitive and inventive and are often entrepreneurs. If they are wise, they quickly figure out that they can start businesses but can't manage them. At that point, they should hire people who can do the day-to-day work required in running a business. They are better at seeing the big picture than managing the details.

Parents often ask when and if their children will outgrow ADHD. We have one excellent long-term study to use to answer that question. Russell Barkley ran this study that was started when he was still a graduate student and the results published as he retired. He followed several hundred children well into adulthood and found the following: 18% outgrew their ADHD completely as adults; 20% still had ADHD symptoms but were functioning very well as adults because they had jobs that worked for them and support at home and work to do the things they couldn't do. 62% had symptomatic ADHD and were either treated and functioning well or were not treated and not doing well in their lives. So when patients ask "how long will he need treatment", I quote those statistics and tell them that for the most part their child will need treatment at least through their school years and then it will probably depend on who they married and what sort of job they got as adults.

Treatment of ADHD relies principally on medications that improve brain (prefrontal cortex) function. Treatment must include good parenting techniques, good school programming, and ADHD coaching (when available). Psychotherapy (counseling) is not generally helpful unless it includes good parenting guidance. All of this is made better if the child is well treated with medications. A large study called the MTA showed that medication made all the difference in how the children did in school. Intensive behavioral intervention at home and at school also helped, but not as much as medication treatment. The results fell apart once the study was over simply because the children were no longer getting intensive medical management. They stopped getting their medications on a regular daily basis. When treatment works very well, EF deficits can improve dramatically or even disappear.

In conclusion, ADHD is a syndrome of EF deficits that manifests with restlessness of the mind and body, poor impulse control and difficulty with focus and distractibility. However, these children and adults have many strengths that others do not have. When children are managed intensively with careful and consistent follow-up, they can be quite successful in life and school.