



ADHD: FACT, FICTION AND BEYOND

A Comprehensive Study of Attention Deficit Hyperactivity Disorder, Oppositional Defiant Disorder and Conduct Disorder

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ADHD has got to be the most misunderstood, but at the same time, most researched disorder known to man. Some folks still believe that it is just an excuse for being lazy and forgetful. Also, there are plenty of urban myths about ADHD being over-diagnosed, and stimulant medications being over-prescribed. We are going to spend some time explaining exactly what ADHD is; and how it effects all areas of someone's life. We'll dig into the history and genetics of ADHD, and it's etiology, or the various theories on what causes the disorder. I'll explain the diagnostic criteria, the evaluation process, and which mode of treatment works best with ADHD. We have a lot of material to cover and I think you'll find it interesting. If nothing else, you'll learn some new acronyms (just what our culture lives for), like PET, SPECT, MRI, SUD, ODD, CD, NIMH, and more!

I. What Is ADHD?

"I was trying to daydream, but my mind kept wandering."

- Steven Wright, comedian

ADHD is more than a list of symptoms, brain scans, psychopharmacology and neurobiology. It's real people with real issues. For a moment let's forget about graphs, pharmacology and scientific hoop-la. Let me describe what ADHD really means to those afflicted with this debilitating disorder.

ADHD IS A KID...

- FORGETTING HIS BACKPACK
- BEING GRUMPY IN THE MORNING
- HAVING A FIT WHEN PLANS CHANGE OR SOMETHING UNEXPECTED HAPPENS.
- GETTING IN TROUBLE FOR:

1. TALKING
 2. HUMMING
 3. PULLING THE PIGTAIL HANGING N FRONT OF HIM
 4. SLIDING OFF HIS CHAIR AND CHASING THE PENCIL
 5. ROLLING AROUND ON THE FLOOR
 6. THROWING SPIT WADS
 7. ARGUING WITH THE TEACHER
- HAVING NO FRIENDS OR BELONGING TO A FRINGE GROUP
 - FORGETTING AN ASSIGNMENT OR FORGETTING TO TURN IT IN OR CHOOSING NOT TO DO IT AT ALL
 - MAKING FAILING GRADES
 - PULLING AWAY FROM MOM AND RUNNING INTO THE PARKING LOT
 - RIDING A BIKE INTO THE STREET WITHOUT LOOKING
 - STICKING A FINGER INTO AN ELECTRICAL OUTLET
 - FALLING OUT OF A TREE
 - HANGING HIMSELF ACCIDENTALLY ON THE GYMSET

ADHD IS AN ADULT ...

- FLUNKING OUT OF COLLEGE
- SPENDING 10 YEARS GOING TO COLLEGE
- GOING TO EIGHT DIFFERENT COLLEGES
- CHANGING MAJORS FIVE TIMES
- NOT GOING TO COLLEGE
- FLUNKING OUT OF HIGH SCHOOL
- FEELING STUPID
- FEELING INADEQUATE
- FEELING LIKE A FAILURE
- BEING FIRED FROM JOBS
- GOING FROM JOB TO JOB

- GETTING JOBS BELOW HIS INTELLECTUAL ABILITY
- FEELING FRUSTRATED AT BEING “PASSED OVER”
- HAVING MARITAL PROBLEMS
- HAVING FINANCIAL PROBLEMS
- HAVING SOCIAL PROBLEMS AND NO FRIENDS
- GETTING DIVORCED
- HAVING MVA ACCIDENTS
- GETTING INVOLVED IN SUBSTANCE ABUSE
- DYING FROM MVA, DRUGS, ALCOHOL, ROAD RAGE

II. IMPAIRMENT

"I'm sorry, I wasn't paying attention to what I was thinking."
- Shelley Curtiss

A. ACADEMICS:

The single most common cause for referral for evaluation for children and adolescents is academic failure.

Weiss and Hechtman¹ in follow-up studies at 5, 10 and 15-year intervals demonstrated ADHD children performed poorly on achievement tests and failed grades/courses significantly more often than children of similar ability who did not have ADHD.

Children with ADHD completed on average 3 fewer years of education than matched controls and were more likely not to graduate high school in spite of having more than adequate ability.² When ADHD is combined with significant learning disabilities as occurs in more than 30% of cases, the academic impairment is often profound.

B. SOCIAL FUNCTIONING AND SELF ESTEEM:

ADHD people just don't "get it." They fail to respond appropriately to social cues, are chronically unobservant of body language and are often intrusive with others. They interrupt, talk too loudly and tactlessly blurt things out without thinking. They ramble on and on rarely completing one thought before jumping to the next. They don't listen and are often considered to be "insensitive."

Research on adolescents with ADHD indicates that the social problems of children with ADHD persist into adolescence and usually get worse. Even when the data was controlled for the features of conduct disorder, which can be significantly alienating, by themselves, children and adolescents with ADHD were found to have fewer

friends, poorer social skills, and have lower scores on assessments of self-esteem.³ ADHD kids are the “last picked and the first picked on.”

This intuitive sense of how to navigate within a culture develops between 12 and 17 years of age and is one of the major developmental tasks to be mastered. During this time period individuals become aware that words alone no longer carry the meaning in interactions. The real meaning is often conveyed through non-verbal cues such as a look in the eye or a tone of voice. People who are inattentive or speeding from one stimulus to the next often miss these important non-verbal messages. If the development of this intuitive understanding is missed at this crucial stage it is commonly missed forever.

C. HEALTH AND INJURY:

Accidents are the leading cause of death until 44 years of age. Without treatment adolescents with ADHD have 400% more injury producing accidents and 300% more motor vehicle violations than do adolescents without ADHD or adolescents with ADHD who consistently take medication.⁴ A 9-year study of medical utilization (beyond just the direct costs of treating the ADHD) demonstrated that persons with ADHD have more than double the cost of care as compared to controls.⁵

D. SUBSTANCE USE:

Left untreated, persons with ADHD have more than three times the incidence of a substance use disorder diagnosis than does the population at large. Biederman and his colleagues⁶ demonstrated in a prospective, longitudinal study that the risk of substance abuse by ADHD individuals remains equal to that of controls until 15 years of age. Between the ages of 15 and 27, however, the rate of substance abuse severe enough to be diagnosed as a substance use disorder triples (47% vs. 15%). Far from predisposing to later drug abuse, treatment of ADHD with stimulant class medications actually protects against the development of substance use disorders (SUD's). If the person with ADHD is consistently treated with stimulant class medication, the risk of developing SUD is the same as the general population.

E. PSYCHOSEXUAL FUNCTIONING:

In one of the longest longitudinal outcome studies done thus far, Barkley⁷ has followed a cohort of ADHD children into their mid-twenties. Their sexual lives give a grim look at the impact of untreated ADHD. At the most recent follow-up more than half of the ADHD group had been tested for HIV disease. No one in the matched control group had been tested. Of the 43 children born to participants in the study 42 had been born to the ADHD group. Perhaps the most disturbing finding was that 54 percent of these parents had already lost custody of their children.

F. CRIMINALITY:

ADHD has a high comorbidity with Oppositional Defiant Disorder (ODD) and Conduct Disorder (CD).⁸ this comorbidity coupled with an impulsive, high-risk lifestyle puts ADHD individuals at risk for legal problems of all sorts. A long-term study in New York found that people with ADHD were more likely to be arrested (39% vs. 20%), and when they are arrested they are more likely to be convicted (28% vs. 11%) and much more likely to be jailed (9% vs. 1%) than were their non- ADHD peers.⁹

G. BELIEF VS EVIDENCE

There are a number of beliefs (or myths) held by many clinicians and laypersons and perpetuated by the lay media.

See if you can figure out which of the following statements are true:

- ADHD DOESN'T REALLY EXIST BUT IS JUST AN EXCUSE FOR BAD BEHAVIOR
- ONLY MALES ARE AFFECTED
- THIS IS JUST "NORMAL BOY" BEHAVIOR
- THESE KIDS ARE JUST SPOILED AND NEED DISCIPLINE
- ADHD IS OUTGROWN BY ADOLESCENCE IN MOST INDIVIDUALS¹⁰
- ADHD IS OVER-DIAGNOSED AND OVER TREATED
- TEACHERS AND PARENTS WANT THE CHILD MEDICATED SO HE WON'T BE A PROBLEM
- THE MEDICATIONS ARE POWERFUL, DANGEROUS AND ADDICTIVE DRUGS WHICH CAN STUNT GROWTH

Not one of these assumptions or beliefs is true and there is an abundance of evidence to the contrary.

IV. HISTORY AND GENETICS

"Never do today what you can put off till tomorrow."

- *Matthew Browne*

There was a popular children's book by Heinrich Hoffman written in **1863** entitled Struwwel Peter. One verse reads:

*PHIL STOP ACTING LIKE A WORM
THE TABLE IS NO PLACE TO SQUIRM
THUS SPEAKS THE FATHER TO HIS SON
SEVERELY SAY IT, NOT IN FUN.
MOTHER FROWNS AND LOOKS AROUND
ALTHOUGH SHE DOESN'T MAKE A SOUND
BUT PHILLIP WILL NOT TAKE ADVICE
HE'LL HAVE HIS WAY AT ANY PRICE.
HE TURNS AND CHURNS
HE WRIGGLES AND JIGGLES
HERE AND THERE ON THE CHAIR.
PHIL THESE TWISTS I CANNOT BEAR.*

The first clinical description of ADHD was reported in the British journal, *Lancet*, by Dr. George Still in 1902. Dr. Still was a British physician treating children who noticed some of his patients were disinhibited and impulsive. In the 1930's in the United States, Dr. Charles Bradley made further observations on the effect of stimulant medication on children. Since that time, the descriptive terms that have been used to identify ADHD people have reflected the current scientific understanding of the day as to what this condition represented biologically.

In the 1960's the emphasis was primarily on hyperactivity and at that time a caricature of an ADHD child would have been "Dennis the Menace" – that is, a child with tremendous energy who could be seen perhaps, as intrusive. In spite of this impulsiveness, Dennis was always seen as a good child.

An important development occurred in the early 1970's when Canadian researcher Dr. Virginia Douglas began to focus on cognitive impulsivity, or the daydreaming and lack of focus in addition to the outward manifestations of motor impulsivity, such as being fidgety. The diagnostic description became more of attention deficit hyperactivity disorder, which includes cognitive impulsivity in addition to motor impulsivity and verbal impulsivity. This currently reflects our understanding of this condition.

There was a time when a rational person could have had honest misgivings about whether ADHD actually existed at all. Because ADHD was first diagnosed in children who could not articulate their experiences, virtually all of our early formulations were based on second hand information from parents and teachers who filled out scales for researchers they oftentimes never met. The diagnosis was further complicated by the inconsistent nature of the impairments that could rise and fall over time and with the level of interest and challenge experienced by the individual. There have also been "unbelievers" who have fed on these difficulties to create controversy, misgivings, and fear. Nonetheless, by 1998 the scientific response to all of this controversy had created a body of research on ADHD that led the American Medical Association to call ADHD **"one of the best-researched disorders in medicine, and the overall data on its validity is far more compelling than for many medical conditions."**¹¹

Perhaps the most compelling of this data came from the research that demonstrated the clear genetic basis of ADHD. The strongest data comes from the ten twin studies that reported heritability between 0.6 and 0.9 (1.0 means a solely genetic pattern of transmission) across various sets of diagnostic criteria.¹² Adoption and family studies (see review by Faraone and Biederman¹³) support the concept that there is little contribution from the environment. ADHD usually runs in families. Stressors and bad parenting can make the manifestations and impairments worse but they do not cause ADHD.

The evidence that ADHD is a brain-based developmental disorder has far-flung implications. Just as no other genetically based developmental disorder disappears with age, neither does ADHD. However it's manifestations and the individual's compensation to the disorder may change throughout the lifespan.¹⁴ The basic features, impairments, and treatments are very similar for both children and adults. People do not "outgrow" ADHD just as no one outgrows any other genetic disorder or any other developmental disorder. All people develop better abilities to pay attention and control impulses as they grow older. Most patients will benefit from lifelong medication even if they have "learned to cope with ADHD" because life stresses increase rather than diminish with age.

Our understanding of attention deficit hyperactivity disorder (ADHD) has progressed more in the past 10 years than in all the years since it was first described in 1902. We now have studies using magnetic resonance imaging (MRI), positron emission tomography (PET), and (SPECT) which provide us with some understanding of the functional anatomy of the human brain. Neuropsychiatric research has provided new insights into basic mental functions and processes. Until recently all research into ADHD was done on hyperactive boys leaving us in a complete void regarding girls, adults and those with problems with inattention. The ADHD picture has been enlarged by new studies giving us a more comprehensive understanding of the far ranging effects of this disorder.

ADHD has a strong genetic clustering (80%) but its etiology is still in question. The current requirement that all of the symptoms must be manifested by seven years of age will probably be dropped in future diagnostic criteria.¹⁵

Once it was thought that ADHD disappeared in adolescence but what we were really seeing was the transformation of the most visible feature of hyperactivity, calm into mere restlessness. The degree to which ADHD "persists" depends upon the criteria that are used to define persistence. About 35% of children who met full DSM criteria in childhood continue to meet full criteria as adults. If you lower the cut off to just five out of nine symptoms instead

of six, the persistence rates jump to 65%. If you define persistence as having met criteria in childhood and still having areas of significant impairment as an adult, the persistence rate reaches 85%.¹⁷

The disorder is manifested as a persistent pattern of inattention/easy distractibility and/or hyperactivity-impulsivity that is significantly more severe than that observed in persons of a comparable level of development. This inattention and/or impulsivity interferes significantly in all areas of function (school, work, social/family relationships, mood regulation, and self-esteem).

Historic estimates for prevalence are 3 to 5 percent of the population but only the hyperactive or “disruptive” child was identified and the “silent” or inattentive child was missed. Two recent nearly identical prospective studies give clearer estimates:

	INATTENTIVE TYPE	IMPULSIVE HYPERACTIVE SUBTYPE	COMBINED	TOTAL
TENNESSEE ¹⁸	4.9%	3.4%	4.4%	12.7%
GERMANY ¹⁹	9.0%	3.9%	4.8%	17.7%

If these current prevalence estimates are accurate, ADHD is more common than major Depression, Bipolar Disorder, Schizophrenia, Panic Disorder And Obsessive Compulsive Disorder combined. ADHD is not over-diagnosed nor is it a fad diagnosis. Three out of four people with the disorder still go undetected. Jensen²⁰ has demonstrated that a majority of children still go untreated even if accurately diagnosed as having ADHD. The recent council report of the American Medical Association spells this out in great detail.²¹

Despite having been described since the turn of the century and having a good treatment since 1937, ADHD is still a controversial concept and diagnosis for several reasons:

The condition may be “silent” or “noisy.” The majority (70%) of people with ADHD do not have hyperactivity and are, therefore, less likely to be detected and treated. ADHD is often silent in girls leading them to be undiagnosed more often than boys. The diagnostic criteria are subjective and dependent upon some measure of interpretation by evaluators. The symptoms are relatively non-specific and occur in other psychiatric illnesses as well as in ADHD. Inattention can occur in any Organic Brain Syndrome, Depression, OCD, Schizophrenia, Petit Mal Seizures, Sleep Apnea, or Dissociative states. Impulsivity is a hallmark of head injury, intoxication states, mental retardation, and psychoses. Hyperactivity is seen after encephalitis or head injury, and in mania. To complicate matters, 41% of adults with ADHD have another Axis I major psychiatric disorder and 38% have two or more additional psychiatric diagnoses.^{22,23} Comorbidity is the rule and a thorough diagnostic history must be taken in every case. The best treatment is Schedule II controlled substances.

Middle class American values dictate that if you “suck it up, buckle down and try hard enough” you can overcome any obstacle. The reality that some people are born hardwired to be inattentive, impulsive, and fidgety goes against this tenet of faith.

“Attention Deficit Hyperactivity Disorder” is not an appropriate name for this problem. **People with ADHD report that their attention is not deficient but instead they are drawn to all the stimuli around them equally and simultaneously.** They are like jugglers who give fleeting attention to each ball in the air. Nothing gets undivided, sustained attention unless their attention is captured by something of great interest or challenge to them. As many as 40% of adolescents and adults with ADHD can enter what appears to be an altered state of consciousness while doing activities which they consider particularly intriguing. While in a hyper focused state of consciousness the individual performs at almost 100% efficiency, does not notice the passage of time, does not become tired or hungry (or notice they need to visit the toilet) and has virtually 100% comprehension and retention of what they read. This inconsistency of performance based on interest leaves the impression that the ability to function is under the control of the ADHD person who is just being lazy or uncooperative.

Just as with many personality traits, there is a positive aspect to ADHD as well as the negative. People with ADHD often have a higher than average intelligence, they tend to be very creative and inventive and can often pull together the threads of a complex problem to develop ingenious solutions that no one else would have seen. They have a “relentless determination” when they hook into a challenge. People with ADHD tend to be intense but sensitive and may be described by friends and family as being “high maintenance but high reward” individuals.

V. ETIOLOGY

"It has been said that idleness is the parent of mischief, which is very true; but mischief itself is merely an attempt to escape from the dreary vacuum of idleness."

-George Borrow

There is much speculation about the cause of ADHD. In November, 1996, the journal of the American Academy of Child And Adolescent Psychiatry published an article by Biederman and Faraone indicating a 10% increase in ADHD children with learning disabilities and without other psychiatric comorbidity born in the month of September. This might suggest a winter infection during early pregnancy. Other suggested causes have been impaired glucose metabolism in the prefrontal cortex and pre-motor cortex causing an inability to inhibit inappropriate responses, malfunctioning in a gene controlling regulation of thyroid hormone, and deficits in the prefrontal cortex and caudate nucleus.

Over the last 10 years neuroscientists have become increasingly aware of the role of inhibitory parts of the nervous system and the importance of the regulatory functions that inhibition provides. Prior to that time we thought the cholinergic and adrenergic systems were what was important because they made things happen that we could see and measure. Now we know that only about 10% of the brain works on a cholinergic/adrenergic basis. Five percent is involved with those functions we call collectively “awareness.” The rest (85% of the brain mass) is inhibitory in function. The new theories of ADHD emphasize a relative failure of neural inhibition as the core problem. Distractibility is conceptualized as a failure to inhibit and suppress other stimuli from awareness. The impulsivity and hyperactivity components may be conceptualized as the partial failure of the frontal lobes whose job it is to inhibit and control emotion responses, inappropriate cognitive and psychic responses, and behavioral impulses. In fact the functions of the prefrontal cortex are maintaining attention, perseverance, judgment, impulse control, organization, self-monitoring and supervision, problem solving, critical thinking, forward thinking, learning from experience, ability to feel and express emotions, and empathy. In short, the same things that ADHD people have problems with!

There have been several studies using MRI's which have demonstrated smaller size of the prefrontal cortex, caudate nucleus and cerebellar vermis in individuals who have symptoms of ADHD compared to normal control groups. Jay Giedd, MD. Of the National Institute of Mental Health (NIMH), has used MRI to study ADHD and found that the right frontal lobe volume is nearly 10% smaller in children with ADHD compared to their own left frontal lobe and compared to both lobes in age-matched controls. Dr. Giedd and his team found that one part of the cerebellum was also smaller in children with ADHD. Interference with the frontal cortex-cerebellum loop may disrupt functioning in the right frontal lobe.

Tomas Paus, MD/PHD, has performed PET studies of attention functions and ADHD in Hungary and at the Montreal Neurological Institute. Dr. Paus studied boys with and without ADHD at age 9. During PET scanning, a visual task is presented repeatedly with an occasional and unexpected distracting visual intrusion. Changes in blood flow on PET imaging varied between the control group and the ADHD group. The ability to suppress visual distraction develops between ages 9 and 10 years and appears to be related to maturation of the frontal lobe. This is consistent with findings by Dr. Giedd and the NIMH team.

Rubia, et al²⁴ used MRI to investigate functional brain activation during inhibitory control in hyperactive adolescents and a comparable control group. Their findings suggest that ADHD is associated with a decrease of brain activity in frontal regions and the increase of brain activity in sub cortical regions indicating a dynamic imbalance in interconnections between right frontal cortex and basal ganglia, which may be the underlying cause for the disinhibitory pathology in ADHD.

Current thinking is that a chemical imbalance of norepinephrine and dopamine neurotransmitters, found primarily in the frontal lobe area, have been suggested to be associated with the lack of arousal in the brain of those with attention deficit hyperactivity disorder. These messengers arouse the brain, and provide an alert state of mind; thus, a deficiency of these neurochemicals produce a mode of somnolence. Varying amounts of neurotransmitters at the neuron's receptor site results in ADHD symptoms being able to change at any moment.

There is now a growing awareness that ADHD severely disturbs sleep in both children and adults. Just as ADHD does not go away with age, it also does not go away at night. Eighty percent of people with ADHD report disturbed sleep almost every night of their lives. In childhood it presents as initiation insomnia, sleepwalking and talking, enuresis, and falling asleep in class. In adults, the most common problem is an initiation insomnia of an average of almost two hours almost every night that is poorly relieved by sedative/hypnotic medications. The individual reports that his mind restlessly "jumps" from one worry or concern to another. In the morning the person has difficulty waking up and being alert. This is not sleep deprivation but rather is an intrusion of theta waves (transitional waves between the alpha/beta waves of alertness and the delta waves of sleep). This theta intrusion can also occur in 40% of people with ADHD when unchallenged or bored. Commonly this is mistaken for Narcolepsy. The mean age of onset of the adult sleep disturbance pattern is 12.4 years of age.²⁵

VI. EVALUATION AND TREATMENT

"I often regret that I have spoken; never that I have been silent."

- Publilius Syrus

A. DIAGNOSIS

The diagnosis of ADHD is best made by taking an extensive history and evaluating the level of impairment in functioning experienced by the individual in various areas of his life. The only recognized standard by which a diagnosis of ADHD can be made is by using the criteria outlined in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV). There is no "test" available that has been recognized by the AMA, APA or other governing organization for diagnosing either children or adults. It may be helpful to get information from teachers and extended family members when evaluating children and from spouses when evaluating adults. The more perspectives obtained the more accurate the diagnosis will be.

Recently there have been some computerized continuous performance tests developed for children with extensive norms which are becoming more widely understood and accepted but these tests can only indicate the presence of ADHD symptoms and cannot differentiate whether they result from true ADHD or some other disorder with overlapping symptomatology. The diagnostic interview schedule for children (DISC) has extensive data on reliability and validity available and covers all 31 DSM diagnoses known to occur in children. It takes the average parent an hour or longer to complete. The schedule for affective disorders and schizophrenia for school age children – present and lifetime version (K-SADS-PL) can generate up to 32 DSM-IV childhood diagnoses and can only be administered by clinicians. It works like an algorithm where the answers to certain questions determine the questions to follow. There is some reliance on clinical judgment in integrating parent report and child report. Test-retest reliability data on the K-SADS-PL is good, ranging from .9 for depression to .63 for ADHD.

B. COMORBIDITY

The most common comorbid disorders with ADHD are as follows:

OPPOSITION DEFIANT DISORDER AND CONDUCT DISORDER	42%-61%
DEPRESSION	15%-38%
ANXIETY	23%-30%
TOURETTE'S/TIC DISORDER WITH ADHD	49%-100%
OBSESSIVE-COMPLUSIVE DISORDER WITH ADHD	6%-33%

As the results of the five-year, multicenter, and multimodal treatment study of ADHD (MTA)²⁶ become available, it is becoming more and clearer that medications are the treatment of choice. The initial reports indicate that medication alone and medication plus intensive behavioral treatment were nearly identical and that both were significantly superior to intensive behavioral treatment alone on 18 out of 19 outcome measures. The community treatment arm of the MTA also showed that 1/3 of these children with clearly documented “screaming” ADHD received no treatment whatsoever and that those who did get treatment of some sort were almost always under-dosed on their medication. The MTA is just the most recent evidence that ADHD remains grossly under-treated.

The results of the MTA do not mean that adjunctive behavioral management is not helpful. Because ADHD often inhibits development of social awareness and self-control at the critical times it may be important to work on these issues through therapy. The MTA clearly demonstrates that behavior management and “trying harder” do not treat the major impairment domains of inattention, impulsivity and motor restlessness.

The MTA does show that ADHD is not the result of bad parenting skills. These were good, involved parents who received even more training and assistance. It just didn't make any difference. It also proved that ADHD is not the result of a defect in character or laziness. Trying harder even with intensive support of specialists in the field was ineffective.

In children referred to clinics for learning or behavior problems, the number of ear infections correlated significantly both with a diagnosis of ADHD and with the severity of the ADHD.²⁷ Studies have not so far implicated diet, allergies or asthma as having any connection to ADHD.

C. MEDICATIONS

Although there have been more than 40 medications that have been shown to have some effect on ADHD there are really only two first line medications for the disorder:

1. METHYLPHENIDATE (RITALIN, METHYLIN, METADATE, CONCERTA)
2. AMPHETAMINE (ADDERALL, DEXEDRINE, DEXTROSTAT)

There are now over 170 controlled double blind studies showing the efficacy and safety of the psycho-stimulants even with patients with co morbid eating disorders, chemical dependency and bipolar disorder. All other medications should be reserved for the rare person who cannot be managed with stimulant class medications.

The psycho-stimulants are not addicting although they are abusable. This is why they are Schedule II drugs. It is rare for an ADHD person to abuse these medications. Well regulated medication renders people with ADHD “normal” and over-dosing produces an unpleasant “zombie effect.”

In spite of publicity to the contrary, medications used for ADHD are not addictive. Some ways to distinguish the difference are as follows:

DRUGS OF ABUSE	DRUGS FOR ADHD
PEOPLE TAKE THEM TO FEEL GOOD	FEEL NOTHING/BAD IF OVERDOSED
PEOPLE CRAVE THE DRUG	COMMONLY FORGET TO TAKE MEDS
PARENTS FIGHT TO GET THEIR KIDS NOT TO TAKE THEM	PARENTS FIGHT TO GET THEIR KIDS TO TAKE THEM

What is probably more important is the prospective longitudinal study by Biederman and his colleagues²⁸ that shows that the stimulant class of ADHD medications actually protect against the development of substance use disorders (SUD). Left untreated, persons with ADHD have three times the incidence of Substance Use Disorder diagnosis than does the population at large (47% vs. 15%). If the person with ADHD is consistently treated with stimulant class medication the risk of developing SUD is the same as the general population.

A recent review by Reeve and Garfinkel²⁹ demonstrates that “most researchers have shown no effect on expected weight or height in long term follow-up studies. Initial growth suppression appears to be corrected by rebound growth at a later date.” In addition, the same studies have shown that drug holidays produced no detectable increases in height and only mild effect upon weight gain. In contrast, the disruption to children with ADHD and their families which these medication interruptions caused is tremendous.³⁰

The psycho-stimulants can be used safely in spite of co-existing conditions. The only absolute contraindication to the use of stimulant medication is glaucoma. Otherwise minor accommodations can make stimulants the drugs of choice in virtually every patient.

SEIZURES: Amphetamine was once used as an anti-seizure medication. Stimulants only lower the seizure threshold at very high doses.

TIC DISORDER/TOURETTE’S: Recent research^{31 32} has found that properly adjusted stimulant medication usually does not worsen the familial tic disorders and many patients with Tourette’s get better on stimulant class medications.

PREGNANCY: No problems have been reported with methylphenidate. Several cases of biliary atresia and heart valve malformation have been reported with amphetamine³³ but these were not in excess of the number expected in the general population.

SECOND LINE MEDICATIONS:

- ANTIDEPRESSANTS
- MOOD STABILIZERS
- PSYCHOTROPIC MEDICATIONS

In summary, ADHD is a serious, neurobiological disorder which has far reaching implications for those who have it. It affects every area of that person’s life. There is no reason in this day and age for anyone to suffer with this disorder for it is easily treatable with the safest and most effective medications.

"ADD is like going through life carrying a one man band contraption, with a broken strap." - Julia Smith-Ruetz

"My room may be a mess, but it's an organized mess. I know right where everything is." -Brandon Curtis

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