What is ADHD?

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Introduction

Attention Deficit-Hyperactivity Disorder (ADHD) is one of the most common psychiatric disorders of children. Approximately 3-5% of children around the world have this disorder. About 50% have another psychiatric disorder with ADHD. In the past, it has been thought that this was only present in boys. You are probably reading this because a family member, pupil, or friend has the disorder.

- ## Clinical Description

Criteria for Diagnosis

All four main areas must be present (A. through D.)

A. Signs and Symptoms

Six or more of the following symptoms of inattention must persist for at least 6 months to a degree that is maladaptive and inconsistent with the developmental level.

Some of the signs of ADHD are present in a lot of kids. Others are rarely present unless people have really disabling ADHD. The signs that are usually only present in disabling ADHD are written in Red below (28)

Inattention

1. often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities
2. often has difficulty sustaining attention in tasks or play activities
3. often does not seem to listen when spoken to directly
4. often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to failure to understand instructions)
5. often has difficulty organizing tasks and activities
6. often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)
7. often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)
8. is often easily distracted by extraneous stimuli

9. is often forgetful in daily activities

Hyperactivity-impulsiveness

Six or more of the following symptoms must persist for at least 6 months to a degree that is maladaptive and inconsistent with the developmental level

1. often fidgets with hands or feet or squirms in seat
2. often leaves seat in classroom or in other situations in which remaining seated is expected
3. often runs about or climbs excessively in situations in which it is inappropriate (in adolescents, this may be limited to subjective feelings of restlessness)
4. often has difficulty playing or engaging in leisure activities quietly
5. is often "on the go" or often acts as if "driven by a motor"
6. often talks excessively
7. often blurts out answers before questions have been completed
8. often has difficulty awaiting turn
9. often interrupts or intrudes on others (e.g., butts into conversations or games)

B. Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before age 7 years.

C. Some impairment from the symptoms is present in two or more settings (e.g., at school and at home)

But half the children I know have those signs!

That is why the last criteria is in here-

D. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.

There are three kinds of ADHD:

Combined type- symptoms and signs of both attention deficit and hyperactivity-impulsiveness.

ADHD without hyperactivity - symptoms and signs of attention deficit only.

ADHD, hyperactive-impulse type - symptoms and signs of hyperactivity-impulsiveness only.

ADHD isn't just about being impulsive, Hyperactive and Inattentive….

Recent studies have shown that people with ADHD have some other interesting problems. These include:

Clumsiness

Children with ADHD tend to fall down more, tip over more things accidentally, and have worse fine motor skills than other children. While some of this is related to their hyperactivity, a good part of it is not. This is partly the reason that people with ADHD have more accidents, have poorer handwriting, and always seem to be spilling things. This poor coordination predicts a poor outcome as adults. Those children who have marked coordination problems and ADHD are much more likely to have trouble with the law, reading problems, work difficulties and substance abuse problems as adults. (54)

Time perception

To be coordinated and get things done, we need to have a stable internal clock. People with ADHD have much more difficulty figuring out how much time has really passed either in the short term (while trying to coordinate a movement) or in the long term (trying to decide how fast to work to get something done in a certain time frame). (53) This inability to judge time does improve with medication.(52)

Planning things out

For a discussion of this, click here

- ADHD at each stage of development

The examples below are for the combined type of ADHD. Persons with either the inattentive type or impulsive hyperactive type will only have some of these signs and symptoms.

Infant

It is not uncommon that parents can see signs of ADHD even before children can walk. When compared to other babies they are often more squirmy and are a less able to cuddle. Infants who will go on to develop ADHD often have a more difficult temperament. They are more impatient, easily frustrated, and require more attention than the average baby. They have more colic. On the other hand, many children that will grow up to have ADHD show no abnormalities at this stage. I have never seen or heard of an infant referred for ADHD.

Toddler (1-3)

For many children, the first point at which signs of ADHD become apparent is as a toddler. Here are the findings.

Attention

Toddlers naturally have a short attention span. They usually can entertain themselves for a few minutes and often can work on an activity with their parents for a little bit longer. Toddlers with ADHD can not even sustain their attention that long. What this means is that conversations are interrupted by any distracting sound or sight. Eye contact during conversations is poor. The toddler with ADHD will often automatically develop responses to requests like, "huh?" or "What?". Most toddlers with ADHD will be able to sustain their attention for a few favorite activities - certain videos, wrestling, and playing at a playground. If you are the caregiver for a child like this, you are spending more time than usual in direct one to one contact with the child to keep her occupied and to keep her out of trouble. I have never seen a toddler with ADHD in which the chief concern was attention span. At its most severe end, Children with ADHD can only concentrate on things like running or wrestling. Toys, books and games are played with for a few minutes only and then either ignored or destroyed.

Impulsiveness-Hyperactivity

Toddlers are known for their high activity levels. They also spend a lot of time doing things without thinking. Since they are naturally very hyperactive and impulsive, one would assume that it would be impossible to be more hyperactive than the norm. Unfortunately, this is not the case. Children with ADHD at this stage can be incredibly hyperactive. They are often so squirmy they can not really cuddle. They want to be running or in motion at all times. Their lives can consist of climbing, destroying or messing up wherever they are. Often they are too busy to sit still and eat. They can be too hyperactive to sit still to use the toilet. They are constantly breaking things up. If someone winds them up, it can take hours before they are relatively calm. When there is a lot of stimulation, they can be absolutely wild, hitting everyone, screaming uncontrollably, and looking as if they are only distantly related to human beings.

For most children, impulsiveness goes with hyperactivity. Just as the normal hyperactivity of toddlers is magnified in ADHD, normal impulsiveness is also. Toddlers with ADHD jump off of decks, jump out windows, take more than their share of cleaning product overdoses, have more accidental falls, and tend to do other normal impulsive things more frequently. They break toys more often, write on walls more frequently and run into the roads more frequently.

This hyperactivity and impulsiveness can be absolutely exhausting. It means that every minute of the child's day must be supervised or else the child gets hurt or things get wrecked. What is even more exhausting is that toddlers with ADHD often have sleep problems. They can be incredibly difficult to settle, do not sleep soundly through the night, and can be up around 5 a.m. Sometimes a toddler with ADHD will wake up in the middle of the night and be ready to play, go to the playground, or just run around. This leads to a horrible cycle. First there is not enough sleep in the ADHD child or the parent. This leads to a more inattentive, irritable, and hyperactive child. It also leads to a more irritable, frustrated, exhausted, and impatient parent. This usually leads to worse sleep for the ADHD child and so on. When I have had to see toddlers with ADHD it is often because they were very hyperactive and did not sleep.

On the other hand, there are many children who will develop ADHD who do not show signs of it in the toddler age. This is because you have to have pretty severe ADHD to stand out from an age group in which inattentiveness, impulsiveness, and hyperactivity are the norm.

Daily routine

Here is an example of a typical toddler's day with ADHD.

Robert wakes up at 6 a.m. most mornings and his parents don't even know he is awake until about 6:01 when he jumps down the steps and turns the TV on loud enough to hear in the back yard. Robert watches TV for about 2 minutes, since it is not one of his favorite shows, and is trying to undo the latch to the backyard when his mom comes down to begin her day. While she fixes a cup of coffee, he empties out the cupboards of pots and pans, something she doesn't mind. But when she goes to get some cream for her coffee, he manages to throw most of them down the basement stairs at the dog which brings Robert his first Time Out of the day. Mercifully, Robert's brothers are fairly well behaved in the morning until Robert throws one of the backpacks, complete with assignments, in the toilet while mom is making breakfast for one of the brothers. Robert has had breakfast, too. He ate ¼ piece of toast (the rest is somewhere to be found later in the day) ½ cup of milk (he spilled the rest when he had to run and see a power company truck go by) and a whole bowl of cereal, which he ate only under the threat of more Time Out.

After the big kids have gone to school, Robert is like a big dog, aching to go outside. Robert's mom, Yvonne, does not like to go out to the playground at 7:30 am. However, the alternative is worse. If he isn't run down a little, life will be impossible all morning. So Yvonne throws on her coat and chases Robert down the street to the playground. He loves it. He is of course the only child there and climbs up everything, jumps off anything and screams for quite a while. Every few minutes Yvonne has to chase him around or else he gets bored and wants to go home. Eventually Robert is worn down enough to go home. He

actually sits long enough for Yvonne to get some housework done and call a friend.

After lunch, which doesn't really exist for Robert, many children lay down. Yvonne would like to. Robert has not had a nap in a year. Yvonne calls her mom and tells her they are coming. Her mom watches Robert in the afternoon so, as Yvonne puts it, " mommy doesn't go out of her mind". After the big kids come home they go and get Robert who has scared Grandma a little by jumping from the landing to the basement without using the stairs. He loved it.

Yvonne is counting the minutes until her husband Matt comes home. So is Matt, but not for the same reason. Matt comes in the door, Robert runs to him and they wrestle for a half hour while Yvonne takes care of the big kids and makes supper. Then Matt takes Robert out for another walk\run to the playground and then it is time for dinner that Robert will sometimes eat as he walks back and forth past the table. After that, it is time for a story and bed.

This is when Matt and Yvonne want to kill Robert. For the next two hours he is calling out, jumping on the bed, kicking the wall, needing to urinate and much more. Eventually, it is 9 p.m. Robert is asleep. Yvonne should go to sleep now but the fact that Robert is asleep gives her a burst of energy. She lies down at 11 p.m. just as Robert awakes for a brief 15 minute trip to the bathroom and a few kicks to the wall.

Preschool (3-5)

Attention

In this stage children usually are still relatively inattentive. However, there are a few new things they are expected to do. They should be able to sit and do some activity on their own for a few minutes. They should be able to do some pre-school work like sitting at a table. They should be able to listen to a story. They should be able to listen a little to other children and a fair amount to their parents. When pre-schoolers have ADHD, they are usually unable to consistently manage these sorts of things. This is the age when a difference usually appears between how attentive the child is to things he is interested in versus those that he is not. A child with ADHD at this age may be able to play cars and trucks on his own without problems but would be unable to concentrate on coloring or being read to. The biggest problem at this stage is that some children are so inattentive to their surroundings that they are falling a lot, spilling more than usual, and have a hard time playing with other children. The pre-schooler with ADHD is ready to change activities every few minutes, but a normal child will want to keep with something for 10-15 minutes at least. If a ADHD child is playing with another child, this need to constantly do something new usually leads to the normal child feeling frustrated. All

things considered, the problems of attention in pre-schoolers are fairly mild. I have never seen a child of this age in which attention was a serious issue.

Hyperactivity-Impulsiveness

With every increase in development, the hyperactivity-impulsiveness part of ADHD gets them into bigger and bigger trouble. Pre-schoolers with ADHD are often starting to get into fights. They are running into streets without looking. They are falling out of windows, starting cars, falling out of trees, and getting bit by dogs they have bothered. Pre-school sometimes is a problem in that many "school" oriented programs require too much sitting time. Some ADHD kids at this age will be thrown out of pre-school. ADHD kids at this stage are in a big hurry and sometimes are unable to sit for a meal, to use the toilet, or to speak clearly. Some children with ADHD will become very, very talkative at this point. Their best friends, if they have them, are other very active children. It is usually unsafe behavior plus being thrown out of multiple day care or pre-school programs which brings children with ADHD to my attention at this stage. However, there are many children who will get ADHD who show no sign of the disorder at this stage.

Daily Routine

Sara is 4 and a half. She wakes up at about 6:30 and used to play by herself alone for about a half hour until her mom got up. Ever since she turned all the burners on and put empty pots over them, her mom gets up with her. As her mom comes to the kitchen, Sara starts talking with her. At least that is what Sara thinks. Her mother Lisa would say Sara is talking at her. Sara usually tells her mom three or four things she wants for breakfast, but by the time her mom gets one of those to the table, Sara is out playing in another room. By 8:00 am it looks as if no one has cleaned this place in a week. Sara has taken out all the toys and played with each for a few minutes. Now she is ready to have Lisa entertain her the rest of the day. Sara will beg, demand, cry and do everything she can to get her mother to take her somewhere. It changes every day. If Lisa gives in and takes her there, she is ready to go home in a few moments. When Lisa's boyfriend comes to visit at lunch, he can't talk with Lisa and Sara is talking all the time.

On his way out he takes Sara to the YMCA. They carefully check what Sara is wearing, so that they can look for it in the lost and found. Sara rarely finishes the running, swimming, and other activities without losing a few pieces of clothing. When Lisa goes to get her a few hours later, the other children are sitting quietly watching a video in the corner of the big room. Sara is practicing take-offs. In the late afternoon Sara is able to concentrate on bugging her older sister. Usually Lisa is able to get Sara away and draw a picture with her name for about 10 minutes. While the rest of them eat, Sara runs around, occasionally requiring a time out for tipping over garbage cans and other such

things. When bedtime comes, Sara is finally ready to eat, read books, and anything else she can think of. Eventually, at 8:30, Sara is asleep.

Toddler and Preschooler ADHD can destroy families and children

Recent studies have shown that this group has very serious deficits. They are very aggressive and have very poor social skills. They are associated with severe family stress (three times normal). They disobey twice as much as normal children. They behave inappropriately five times as much. Not surprisingly, parents felt that the stress in their lives was three times what you would see in a family without a preschool ADHD child. (31)What does this mean? Preschool ADHD leads to mom's (and occasionally dad's) becoming mentally ill. It can lead to marriage break ups. It can lead to other siblings becoming quite dysfunctional.

ADHD in other Stages

Early Elementary

Attention

To successfully complete grades primary through two requires a huge step in a child's ability to sustain attention. More importantly, the child must be able to sustain his attention on things which he or she is not really interested in. Outside of school there is an increase in the attentional demands, but not as much as in school. You need to be able to attend to other children's interests, emotions, and abilities to maintain friendships.

The biggest problems are at school. Children with ADHD will be able to start nearly any task and often be relatively enthusiastic about it. However, their attention drifts away and the work is not completed. Some will hurry in every aspect of their work and it will be messy. Others will never actually get the crayon or pencil to the paper. They are too distracted by everything that is going on in a classroom and by their own thoughts. If you think about it, if you have a hard time with extra stimulation and distractions, there is no worse place than a busy classroom. Usually children with ADHD will occasionally amaze their teachers because the task at hand is something they are very interested in for one reason or another, or it is one of their better days. A page of mathematics that the child could not do at all a week ago comes back 90% correct. The next day they can hardly recall any of it. This uneven performance

begins at this stage and starts to drive teachers and parents crazy. They know that their child is smart, but she only shows it rarely.

Besides these problems, organizational skills start to be noticeably lacking. What is supposed to go home doesn't. What is supposed to go back to school never gets there. Since work is frequently not finished at school, it has to make that trek home, and that is often a difficult one. Children lose backpacks, get distracted on the way to school and on the way home.

Some children will be lucky and have these signs but be so intelligent that they can still successfully complete these grades without ever organizing themselves and really working. Others will have teachers who do not require a lot of organization or who will mark a child based on their best effort rather than an average over time. Many parents will be told their child is lazy, uninterested, and not trying. There is difference. In ADHD children can not pay attention. In lazy children, they will not.

Impulsiveness-Hyperactivity

By the time a child is in second grade, he spends as much time sitting at his desk as the average adult. While the attentional demands make a big increase, the demands to sit still increase even more. This is what usually sinks children at this stage. Children are expected to work carefully in groups and then shift to another activity with only a few breaks in the day. They are expected to listen to the teacher, take turns, and immediately calm down after a break. Children with ADHD often can not do this at this stage. They can not sit still or even sit. They are up walking around the room before they even realize it. They climb over furniture and they bug other kids. Others are just constantly talking and interrupting. Waiting in line and playing with others can be a real problem. Some kids are so wound up that they just run around by themselves. Others do many, many dumb things that get them in trouble. This is often because they are not watching the teachers to make sure no one is looking. Most children will wait until they are not being watched before they do something wrong. Children with ADHD will impulsively throw the stone even when the supervisor is looking right at them. As a result, they are caught 90% of the time, while a less impulsive child will be only caught perhaps 25% of the time. This combination of doing more impulsive activities and getting caught for more of them often leads to the child being labeled as a troublemaker. The worst thing that can happen is to have recess restricted as a result of this trouble. Then the child has even less of a chance to blow off her steam. If a child is quite hyperactive at school, the parents usually hear about it from the school all week long.

At home it can be just as much of a problem. Here it is often a safety issue. Bikes are going off big jumps, children are never looking before they do anything. Children with ADHD have more accidental poisonings, more fractures,

and more lacerations needing sutures. Many can best be described as an accident waiting to happen. Often by this time the child will have found a few activities which can sustain her attention. Video games, computers, and legos are often in this category. Many children are mostly outdoors if they can be.

Homework begins at this stage on an occasional basis for most kids but on an almost daily basis for ADHD children. They don't finish the work at school so it is sent home to be done. So the parent must change the environment and supply what the child does not have. The parent usually must sit down in a quiet dull spot and go through the work at the child's side. The parent will have to bring the child's attention back to work many, many times. What could take a normal child 5 minutes takes an hour. It usually drives parents around the bend.

To have ADHD, you must show either attention problems or impulsiveness-hyperactivity by age 7. Some children will show both and come to clinical attention. Some will be able to get by even though these problems are present and not require clinical attention. These are usually the children with primarily attention problems and little or no hyperactivity. It is unfortunate that the children with only attentional problems are rarely thought to be anything more than lazy, eccentric, or immature.

Daily Routine

Stefan gets up at 6:00 in the morning. The bus doesn't come until almost 7:45. He still misses it at least once a week. His mother Becky has to make sure he does everything. If Becky just asked Stefan to get dressed, it would be noon before it was done. So she nags him about that. At breakfast he plays with his food. So Becky is pushing him to hurry there, too. To get washed up is another battle. She feels like she is pushing a big rock uphill all morning and the rock is Stefan. Then she has to help Stefan find boots, gloves, coats, backpack, homework, and all the other things that she thought were all set out when they went to bed. As Stefan runs to the bus, she watches to see that he gets on, says a quick prayer of thanks, and sits down.

On the bus Stefan gets to sit right behind the driver as that seems to keep him out of trouble. That way the driver can make sure that when Stefan gets off he doesn't trip into a puddle, knock someone over, or get into other trouble. She hands Stefan off to the teacher, Mr. Rose. Stefan is lucky, he gets to sit in the front row right next to Mr. Rose at the first table. All the children sit down after "Oh, Canada" and so does Stefan. Mr. Rose tells them to take out some work and automatically adds," Stefan, come back to your seat and take out your blue scribbler. " Without even looking, Mr. Rose knows that Stefan is already up. Later they are to sit in a circle while he reads to them. Stefan listens to as he walks around the back of the circle. Stefan says he listens best when he is walking. When they do the worksheets, Mr. Rose makes a familiar

pattern. He helps a child with a problem, then circles around to try to get Stefan to get back to work, then out to help another child then back to get Stefan on task. If the other children need only minimal help, Mr. Rose can help Stefan get half of the worksheet done. Left to his own, the sheets are usually empty or full of wrong answers. When it is science time, Stefan shines. He knows all the answers. He tells Mr. Rose all the answers even when Mr. Rose is not asking any questions. At recess, Stefan is out like a bullet and captured by a playground supervisor who makes sure that Stefan is involved in something which will not get him in trouble and use up the most energy. Races are the usual choice for the short recess and field hockey or soccer for the long recess after lunch.

At 1:00 p.m. the phone rings and Becky swallows, praying that it will not be Mr. Rose saying Stefan is in trouble. Her prayers are answered! For the first time this week, neither the principal or the teacher calls! Becky almost kisses Stefan when he comes home except for the fact that he watches him pick up a big stick and just barely misses hitting the neighbor girl. He wasn't looking at anything, just swinging it. Stefan comes home, eats like a horse (he is too excited to eat at school) and he is back outside for an hour or so until his father comes home. Stefan is building a fort in the woods behind the house, but you can't really tell, as he is still just planning it and hauling old things around.

When his father comes home, it is time for homework. Becky tried to do homework with Stefan, but she screamed so loud once at Stefan that the neighbors came over to see what the problem was. And the problem? How do you spell "boat". Stefan had spelled it ten times. But that was before a bird ran into the window. Now he can't remember. So, Joel helps with the homework upstairs. An hour later, they both come out, homework often done, sometimes not. Joel looks like he has just had a rough work out. So does Stefan. From that point on, things go fairly smoothly. A little hitting, a few broken toys, and a lot of lego later, it is time for bed. Stefan usually goes to bed pretty well now.

Later Elementary School

Attention

There is a fairly big gap in Canada between second and third grade. Work begins in earnest in third grade. There is more work in class and more homework. The work is often the type that requires multiple steps and planning. This includes things like book reports and other projects. Outside of school, most children are spending an hour or so on an activity and often there will be almost as much organization required for play as at school.

It is the organizational demands that tend to sink children at this stage. Children with ADHD often have great ideas and either don't get started or quit

part way through. Left to their own, everything is late. However, they will still mystify their teachers and family by occasionally doing brilliant work on something that they are especially interested in. At this point the amount of work is great enough that most parents can not help the child to keep up unless they spend over an hour a day in homework. This is usually just as frustrating to all parties as when they were younger. It is at this stage that children with ADHD without hyperactivity will start to come to clinical attention. Those are the lucky ones. Since they are often quiet, and not a behavior problem, some of these kids will just drift through these years using only a fraction of their capabilities. Most are thought to be lazy or uninterested.

Impulsiveness-Hyperactivity

Most children with ADHD will settle down a little by this stage. Most can sit in a chair, but are quite squirmy. They are less likely to walk around and more likely to talk out of turn, bug other kids, or become class clowns. Outside of class they still have a hard time staying still and spend a lot of time doing things outside. The big problem is impulsiveness. If you have ADHD, the older you get, the more trouble impulsiveness can get you into. Shoplifting muffins, taking apart vacuum cleaners, starting fires, getting into fights, nearly drowning, nearly getting killed on their bikes, climbing on roofs, and saying very stupid things to people in authority are some typical ones. Evil children will also do these things, but are less likely to get caught. They are "pre-meditated" crimes. ADHD kids do these things for no real reason and are almost always caught. I see many extremely impulsive children at this stage because their parents can see where things are headed and they don't want their child to go down that road. Very impulsive and hyperactive kids at this stage are often labeled as criminals of the future because they are doing dumb things and getting caught. But anyone who spends a lot of time with the child will realize that this is not an evil and cruel person.

Daily Routine

Megan is now in grade 5. Life is a lot different this year than last year. At the end of the year, there was a big meeting at school regarding Megan. Some wanted her suspended, others wanted her held back. In the end, it was agreed to graduate her into grade 5 but there would be zero tolerance of any misbehavior and if she was behind after two months, back to grade 4 she would go. In grade 4 Megan was always late, missing things, forgetting everything and was months behind in everything. Amazingly, she was too busy to do this work. No one ever did figure out what Megan was so busy doing. She spent most of her time daydreaming, screwing around, and saying things to her teacher and principal that got her lots of punishment. Hitting anyone who teased her didn't help. So when grade 5 started, Megan's Dad decided that they should run Megan's life like boot camp. There was a schedule for everything. There were lists to be checked off in the morning to make sure everything was organized

for Megan. All projects and homework were written on a big chart. Megan helped the janitors at recess. She went to resource for as much time as possible to get more one on one help. In the early evening, Megan's parent's took turns helping Megan with her work by taking her through each step of each task. Megan did her tests in a room by herself to cut down on distraction. At home, Megan was watched all the time and was in Girl guides, 4-H, church groups, Karate, and swimming. She went out with her Uncle and snared rabbits on the weekends.

After the Christmas report cards, Megan's parent's were ecstatic. Megan was actually passing. Or was it Megan's parents who were passing? It became obvious who was passing when Megan's mom had the flu for most of January and could hardly help around the house, much less work with Megan. Everything started to crumble again - Megan was in trouble. She was behind and the teacher's were calling for a parent conference. Luckily, Megan's aunt was laid off and helped out. Aunt Julie was about to give up herself but luckily Megan's mom was able to get back on her feet in time.

The most amazing thing is that even though Megan's life was extremely regimented and structured, she didn't seem to mind. In fact she thrived. While her parents were proud of her, they were counting the days left of school. When school ended and there was no more homework, it was hard to tell who was happier, Megan or her parents. What kept them going? Sadly, it was Megan's grandmother. She always said Megan was the laziest child she had ever seen. Not a week went by when she did not predict that nothing good would come of Megan. Along with these unhelpful predictions, she also had some suggestions. The most frequent was that they were spoiling that child and actually had caused Megan's problems. Who can argue with a grandmother? They intend to prove she is wrong.

Junior and Senior High School

When ADHD persists into this age range, a whole new set of problems emerges. As a result of these, ADHD in teenagers can be devastating. Why? Often the answer has to do with Executive Functioning. click here to go to that pamphlet

Attention in teenagers

At this point, the attentional demands on adolescents are the greatest. This is because they have little choice over the courses they take and yet have to do very adult things. The distractions between classes are immense. The adolescent with ADHD at this stage is part of the group who didn't outgrow it at puberty (see Prognosis section). For the most part, they start failing in a big way. Often their attention span is still that of a fourth grader or less, but the

demands for sustained attention to boring things is very great. So, they don't do any work. Or they just fail because they are not trying. Or they become the clown to keep from working. At this point, even the most dedicated parents can not keep a child going (see above example of Megan). There is too much work. At this point it is sink or swim, and most start to sink. Many will drop out, skip classes, get in trouble, or only do a few things that actually interest them. It is common to see a child who has failed three times in Junior High be able to teach other kids how to do something which they have not learned themselves. At this point, the schools have basically written off the child as trouble or not able to do academic work. I will see kids in this age group for the first time when the parents have found that they could not do what they did in grade school (see Megan example above) and are seeing their child fail.

Impulsiveness-Hyperactivity

Children are usually fidgeting and restless at this age with ADHD, but unless you spend a fair amount of time with them, they don't seem that hyperactive. However, there is usually a clear preference for activities that don't involve sitting quietly. It is the impulsiveness that is sinking them. At this point, children are suspended for skipping school, disrespectful remarks, fighting and other stupid mistakes. The most impulsive will be involved with drugs, alcohol, smoking, and minor vandalism. Others will do something really stupid like crash a car and be paralyzed, hit a RCMP officer, or accidentally shoot a gun and kill someone. These are all examples I have seen. There are a lot of adolescents with ADHD who are only minimally impulsive and hyperactive, and they are less likely to get in quite so much trouble. They are more likely to just be frustrated, depressed, and drink. By late adolescence, severe ADHD is a horrible problem and can be life threatening.

Daily Routine

The horn honks and Shawn's mother calls to tell him Tara is here. Amazingly, Shawn appears dressed and his mother hands him his books as he goes out the door. As they drive away, she still can not believe how lucky they all were to have Tara appear. Tara and Shawn are both 17. If only Tara's parents had moved here two years ago! Before she can reminisce about the past, the car is back. Shawn races into the house, "I forgot my medicine!" She hands him the pills and out he races. She knows it wasn't Shawn who remembered the medicine, it was Tara. By the time Shawn was in 10th grade, he was frustrating everyone, even himself. He had great ideas, but couldn't follow through with them. It seemed they were always nagging him about work and homework, even though they had promised that once he was 15 they would not watch him every minute. Shawn dropped out of school at age 16 and helped his uncles when there was work in the woods or on the boats. The rest of the time was full of great plans and half-finished projects. Like going to community college (she still has the half filled out application) or starting his own graphic arts

company (he lost interest after he designed the logo). Luckily Tara appeared that summer. They would be both going into grade 11, but it would be his second time. So now life was better. Shawn was doing great in school and everyone admires his art work. Tara adores him. She gave up wondering how much was this because of the medicine and how much is it Tara. Of course maybe, just maybe, after all these years of battling this ADHD he is growing out of it.

Attention Deficit Disorder in Adults

While some adults with ADHD will outgrow it, about 30% will continue to have it. the lucky ones are like Shawn and find a combination of the right partner, the right job, and sometimes the right medicine. The unlucky ones go on to have failed relationships, troubles with the law, drug and alcohol abuse, and occupational failure. All the adults I have ever seen with ADHD have come for help because their children had been diagnosed and successfully treated for ADHD. Either the adult with ADHD or their partners and friends suggested they check out treatment, too.

- Subtypes of ADHD

So far I have described children and adolescents who have both the inattentive symptoms and the hyperactive-impulsive symptoms. However there are some children who have only problems with hyperactivity and impulsiveness and other who have no hyperactivity or impulsiveness at all.

Hyperactive-impulsive subtype

These are children who are able to perform academically quite well, as long as someone is keeping them busy. They are children who can stand at their desk and walk all around it while still doing their work or reading. Often these children will be in fights, engage in risky behaviors, yet be able to do their work without too much difficulty. Although they might not get a failing grade for bus riding, often they are above average in school work. Little is known of this group. In my practice, only about 5% of children with ADHD have this picture.

Example: Brett

Brett is 9 and in fourth grade. He is young for his class and rather small. Until Brett gets to the bus stop. you don't notice any real problems. He gets ready for school okay, eats quickly, kicks the soccer ball very close to the table which the cereal and milk are on, and is out the door. Last month, before his mom even noticed he was out there, there was trouble with either purposeful

teasing or Brett just playing too rough for everyone else. Now Brett's mom comes out with him. She comes out to the bus stop with Brett and then enlists Brett and the other kids in picking up trash along the road while they wait for the bus. In this way, Brett stays busy, runs off some energy, and stays out of trouble. On the bus, brett stays in the front seat. He knows that going out for recess and staying up until 8:30 are determined by his school bus performance on the way to school. Some days, if Brett is particularly wound up, his teacher calls his mom and she comes and gets him, because the teacher can see that there is no way Brett can handle a bus ride. At school Brett is kept busy every second. The teacher is watching him constantly and if he gets done early (which is often the case) she puts him to work taking care of the animals in the back of the classroom or doing something on the computer. She figures she spends as much time with Brett as all the other children combined. At lunch time, it turns out that the monitor always happens to sit next to him. When he is done and on the way out for recess, they always try to get a game of floor hockey going to keep him busy. Occasionally, on rainy days, they have him go lug things around with the janitor over recess. Once he is at home, he is mostly outside. Brett's mom's greatest fear is a snow day- no activities and no way to get out!

ADHD without hyperactivity subtype

Children with ADHD without hyperactivity are different in many ways from ADHD kids. First of all, they often have lower energy than normal. Often they are less assertive than normal. As a result, they are usually quite popular in elementary school compared to ADHD kids. They are much more likely to have learning disorders (especially Math) than ADHD kids. They are much less likely to have ODD or conduct disorders. There is no difference between ADHD and ADHD-D children in the frequency of other co-morbid conditions. ADHD-D children and adolescents do not get identified early in school, which is a shame. They are more likely to quietly daydream and never accomplish much. As a result, in a busy classroom, the child is not the "squeaky wheel". These children have a tendency to just drift through school. Nevertheless, it can be a very horrible illness. About 15% of ADHD children have this type.

Example Jeanettte

Jeanette is 11. When she was a preschooler, all of her mom's friends commented on what a wonderful child she was. Content to play with just about anything, a good sleeper, and an easy going attitude about life. As Jeanette went through school, these points were heard less and less. The fact that she was way behind in math, never seemed to apply her self, and had bad coordination were what people noticed. Jeanette still passed every year, but never with any effort on her part. At home she played with friends or just sat around and drew or watched TV. The families biggest problem was getting her to do anything. Jeanette's clothes, books, pencils, and boots just seemed to

disappear into thin air. When her parents took things away because she didn't bring home her homework, she didn't care. When 5th grade came, so did book reports and projects with deadlines. Jeanette seemed to be ignorant of all this. Most kids liked Jeanette. Finally, at a teacher parent conference, the teacher showed the mom some of Jeanette's work on drawing cross sections of a house. It was incredibly good. The teacher almost wondered if the mom had done it. The teacher also confessed to the mother that up until that point she had privately thought that Jeanette was just not very bright. Now she realized there was something else wrong, and was suggesting Jeanette get checked out to see what was the matter.

The treatment of ADHD without hyperactivity is just the same as ADHD. However, some of the behavioral interventions are not the same, since impulsiveness is not an issue.

Causes of ADHD

The two types of causes are genetic and environmental.

Genetic

About 76% of ADHD is genetic. (66) Studies of adults with ADHD have found that about 50% of their children will also have ADHD. The other problem is that more often than by chance two people with ADHD will marry each other. Another common problem is that people with ADHD marry people who have learning disabilities, which are also strongly inherited.

So what exactly is being inherited that causes ADHD?

The answer isn't totally clear yet, but researchers are a lot closer to knowing than they were five years ago. A chemical called Dopamine is involved in ADHD. Researchers think that changes in the genes that make the chemicals that transport Dopamine and bind it in the brain may be what is inherited. (25)

Alcoholism in parents is also associated with an increased risk of ADHD. If a parent has alcoholism, their child is about twice ask likely to have ADHD. If both parents have alcoholism, the risk is three times as high. It is unclear whether this is from being related to an alcoholic parent or from living with them. (19)

Environment

As far as ADHD goes, the most important part of the environment is that in the womb and the birth. About 15% of ADHD cases are related to birth trauma or problems with the pregnancy. Women who smoke during pregnancy are more

likely to have a child with ADHD. ADHD is more common in most genetic syndromes and is also common in cases of mental retardation. Severe head trauma can produce ADHD, too. About one out of five children with head trauma will develop ADHD. (6) A common question I am asked is if you can "make" a child have ADHD from things like abuse? No one is sure, but probably not. What is certain is that you can worsen ADHD by family chaos, deaths or separation of parents, poverty, abuse and neglect. Food colorings and additives may also worsen ADHD in some cases (see dietary treatment section).

Brain findings

Over the last few years, researchers have looked at the brain in people with ADHD and have found some clear abnormalities. MRI scanners take a very detailed picture of the brain in cross section. They show that parts of the base of the brain associated with attention are smaller on the right in people with ADHD. The part of the brain that connects the left and right front of the brain has also been found to be smaller in a couple of studies using MRI. When researchers look at how much work different parts of the brain are doing, they have found decreased activity in the front parts of the brain in ADHD. Special tests can show that the brain is not as efficient in ADHD when doing certain tasks and rather than being able to use a small part of the brain, a larger part must be used. (65)

Co-morbidity in ADHD

When diseases tend to occur together more often than chance would predict, it is called comorbidity. A familiar example is Diabetes and high blood pressure. Identifying comorbid conditions when ADHD is present has led to better treatments and great advances in child psychiatry. When a child is assessed for ADHD, it is absolutely essential to see if any of the other common comorbid disorders are present. The presence of these comorbid problems predicts which treatments will work and what the long-term prognosis is. About 50% of children have ADHD plus some other disorder. Here is a brief description of the common disorders comorbid with ADHD. Virtually all the child hood psychiatric disorders are more common in ADHD. GiRestless Leg Syndrome tend to have more comorbid disorders than boys.

Conduct disorder

This is an inherited disorder characterized by cruelty, violence, and disregard for the rights of others. When it is present with ADHD, it is a bad sign. Approximately 25% of ADHD children also have this. Children and adolescents with ADHD without hyperactivity do not have an increase in Conduct disorder. A third of ADHD children who also have conduct disorder will have committed multiple crimes by the time their teenage years are over compared to 3-4% of

children who have only ADHD. Children with ADHD and Conduct disorder have a higher rate of becoming criminals as adults, too.(8)

Oppositional Defiant Disorder

This is a disorder characterized by severe stubbornness, bad temper tantrums, and a desire to irritate and oppose others. About 80% of children with this also have ADHD. Children and adolescents with ADHD without hyperactivity do not have an increase in Oppositional Defiant disorder.

Tic disorders

Sudden movements of the body or sudden sounds which are not voluntary are characteristic of Tourette's and related problems. ADHD and tics often go together. Tics can certainly change the treatment of ADHD.

Anxiety Disorders

Anxiety disorders are not uncommon in children, but ADHD children are twice as likely to have them. One-third of ADHD children have anxiety disorders. They predict school failure and strongly influence the treatment of ADHD. Children with ADHD and anxiety are less hyperactive and impulsive than children with ADHD only. On the other hand, children with AHDD plus anxiety have more difficulty with difficult work and get "bogged down" more frequently.

Depression

Varying degrees of depression are present in many children with ADHD, especially after about age 10. This changes the treatment and predicts a worse outcome. About 40% of children with ADHD have marked depression. Often a child with ADHD will have relatives with depression. In some families, some relatives will have ADHD and others depression. Children with ADHD and depression are not more likely to commit suicide. (8)

Learning Disabilities

Many children with these have ADHD. It makes life even more frustrating and difficult. About one third of ADHD children have learning disabilities. Children with ADHD without hyperactivity have more learning disabilities. If a child with just learning disabilities is given stimulant medication for ADHD, it will not improve their learning. However, if a child with ADHD and learning disabilities (especially a reading problem) is given stimulant medication, their reading improves markedly. (8)

Mania

Mania is quite rare in children. It is the opposite of depression. About 90% of manic children have ADHD. This is a very, very severe problem when it occurs.

Autism and related disorders

ADHD is present in about a quarter of this group, about five times what you would expect.

Enuresis and Encopresis

Not being in control of your feces or urine is much more common in ADHD than in children without ADHD. Having ADHD can make it harder to control these problems. On the other hand, many times the treatment of ADHD will improve these problems also. About 30% of children with ADHD have enuresis.

Developmental Coordination Disorder

Being exceptionally clumsy and poorly coordinated is much more common in ADHD children. This combination can lead to very poor self-esteem, especially in boys.

Speech-Language Disorder

This is one of the most well documented connections. ADHD is much more common in this group. ADHD can make speech therapy much more difficult.

Epilepsy

About 20-30% of children with epilepsy also have Attention Deficit Hyperactivity Disorder. In a recent study, 70% responded positively to medications for Attention Deficit Hyperactivity Disorder. (11) The medications for Attention Deficit Hyperactivity Disorder are safe with most seizure medications.

Auditory Processing disorder

These persons hear all right, but they have a hard time filtering out sounds that are not important. About 50% also have ADHD or one of the sub-types of ADHD.

Substance abuse

If you go to drug and alcohol programs for teenagers, you will find many more cases of ADHD than you would expect. However, the good news is that this is

not due to ADHD, but due to Conduct Disorders. That is, ADHD alone is not associated with an increased risk of substance abuse, outside of cigarettes. Conduct disorder is associated with a marked increase in substance abuse. So if your child has conduct disorder and ADHD, there is a great risk of substance abuse. But if the child just has ADHD, he or she is not at a higher risk for drug abuse as a teenager. (22) There is some evidence to suggest that if a person still has ADHD as an adult, even without conduct disorder, they will be at a greater risk for alcoholism. (23)

Comorbidity doesn't always mean just two disorders. I frequently see two or three different disorders besides ADHD in one child.

- # Making the Diagnosis of ADHD

In medicine, there are three methods that are used to diagnosis diseases. These are the history (what the patient and his family tells you), the examination of the patient, and lab tests. Each has a role in ADHD diagnosis. The job in diagnosis is to find signs of the disorder you are looking for and make sure it is not something else.

History

A lot of the diagnosis is based on the story a family, school, and child tells me. I have to find out about all sorts of other medical problems and all these comorbid conditions. If a child has three or four psychiatric disorders, this can take a good hour. The most common mistake in the history in evaluating ADHD children is to forget about asking about comorbid conditions.

Examination

When you do an exam for ADHD, you are looking for neurologic problems, but mostly you are observing for signs of the many different psychiatric disorders, including ADHD. Checking for signs of ADHD and the many other comorbid conditions doesn't usually mean a general physical. It means watching how they relate to others, play, read, write, interact with me, and many other things. You can diagnose ADHD without an exam, but you will often be wrong, especially about comorbid problems.

Lab and X-ray

There are a few other disorders that sometimes can look like ADHD. One is Sleep apnea. In this problem children are often snoring and they stop breathing in their sleep for a few seconds. This interrupts their sleep and can cause hyperactivity, inattentiveness, and other behavior problems. It is important not

to miss this. It is not that rare. About 1-2 % of children have this, but up 18% of children who are having major problems in school have it.(10) Some children can be markedly improved when this is treated. The treatment often involves surgery.

Substance abuse can cause many signs of Attention Deficit Hyperactivity Disorder. The most likely is Pot or Cannabis. In fact 14% of teenagers who go to their family doctors test positive on a urine drug screen for street drugs. It is almost always Pot that is found in the urine. (12) In children with school problems, Some kinds of epilepsy and certain disorders of the brain and metabolism can appear like ADHD. Overall these are very rare. If children are going downhill neurologically and psychiatrically, or if nothing seems to fit, then I get much more aggressive about doing special tests. Hearing tests are different. All children who are thought to have ADHD should have their hearing tested.

In the vast majority of children, the diagnosis is clear from the history and examination without special tests.

Common Mistakes in Diagnosis

Sleep Disorders and Restless Legs (click here to go to this pamphlet)

Other Mistakes in Diagnosis

Severity

If you look at the list of symptoms for ADHD, you will probably find that at one time or another you have had all of them. One of the common problems with checklists of symptoms is that for ADHD symptoms to count, they must be severe enough to be disabling either at home, at school, or with friends.

Duration

Even if you have all the signs of ADHD and it is disabling, if it came on for the first time at age 15, it isn't ADHD. It is something else. When this is the history, it is key to look more carefully at what else might be going on. Drugs? Abuse? Mood disorder? Head injury? Epilepsy? These needed to be checked out.

Diagnosing ADD without hyperactivity

There are not too many things in pediatrics which cause hyperactivity and impulsiveness which starts before age seven and never goes away. That makes diagnosing ADHD relatively easy. The same does not hold true with ADHD without hyperactivity. Being disorganized, inattentive, distracted, and

forgetful can be caused by a number of other brain disorders that are in the family of learning disorders and language disorders. It is easy to understand these problems if you understand how something that we see or hear gets into our mind. For example, When a teacher tells a child something, a number of things must happen for it to "register".

To truly understand something a teacher says-

The child must be able to hear the sounds the teacher makes.

Hearing loss from ear infections and fluid behind the ear drum are two common causes of problems at this level. If this is the problem, children have as much trouble hearing good news as homework assignments.

Example Terry can't hear

Terry's teacher called to tell his mother that Terry was falling further and further behind because he was ignoring what she said and not listening. The teachers suspected ADD and wanted the child tested for this. The mom started watching Terry at home. She started softly talking about getting him a new bike, something he had been asking for daily all spring. Terry did not hear. She mentioned it to her husband not so softly, yet still Terry did not hear. So, She had his ears tested and sure enough, he had a lot of fluid behind his ears. Tubes cleared up this case of not listening!

All children who are not listening should be checked to make sure they are hearing.

The child must focus her attention on the teacher's voice.

ADD or ADHD is the cause of problems at this level. A child with ADD can hear what he is interested in and totally ignore a boring teacher, even if the teacher is plenty loud.

Example Erin hears what she shouldn't

Errin doesn't appear to hear anything in school that she should. However she hears everything she shouldn't. One day she came home and told her mother about how her teacher was going to get divorced. She had heard the teachers talking in the hall while the students were supposed to be working. On the other hand, she never heard instructions. This kind of selective hearing of what is interesting is classic for ADD-D and ADHD.

The child must "tune out" other sounds such as other children talking, trucks going by, and the like

Central Auditory Processing disorder is the usual culprit if this is the problem. Children with this problem do basically normal work if there are no distracting sounds. Children with ADHD and ADD are distracted by sounds, but also their own thoughts, sights, and what is touching them.

Example Rob is a genius at home

Rob gets almost nothing done at school. He is off task, gets frustrated, and can't appear to follow directions. So he takes most of the work home. His mother has learned what to do. She turns off the TV and radio and shoos the other kids out of the house. Then she turns the telephone down and puts Rob in his room at his desk. It is dead quiet. He finishes his work within an hour and rarely makes a mistake. The teacher can't believe the difference between his homework and schoolwork. If a child's problems seem to lessen dramatically when he works in a dead quiet spot, he should be checked for an auditory processing problem.

The subject matter must be at a level which the child can understand.

Even if you can hear, pay attention, and tune out other sounds, it will get you nowhere if you can not understand the meaning. For example, if you are reading at a 2nd grade level and the class is reading at a 6th grade level, you will not be able to follow what is going on no matter how attentive you are. Some Learning Disabilities, language disorders, and mental retardation can cause this. The level of difficulty is just too far "over their head"

Example Jeff and reading

Jeff does well at reading but he hates to read and always has. Now he is in 6th grade. He gets some resource help, but he is still mostly in regular class. He reads slowly at a second grade level but is above average intelligence. He can already do some algebra. His teacher wonders if he has ADD. Whenever they are reading he is just looking out the window or screwing around. Why? because he can't follow what they are doing. Once he listened to the same book on an audiotape, his attention span was fine. **All children with listening problems need to be checked for learning disorders.**

Sometimes, the child must remember what was said by the teacher the next day or later.

A learning disability in memory can cause this difficulty. The child knows and understands it today, but never heard of it tomorrow unless it is repeated over and over.

Example What is going on with Martin?

Martin is 8. His first grade teacher thought he was brilliant. He worked hard, learned to read, and was able to do simple math and counting. His second grade teacher wondered. Martin read fine, but didn't remember the next day. His spelling never seemed to improve. He had a horrible time learning his math facts. Martin started to get frustrated with school and started misbehaving. He was tested and found to have a normal IQ. Unfortunately, there was not time that day to do memory testing. By third grade, his mom and dad had figured it out. Martin couldn't remember things. However, if they worked and worked every day, he was able to get by. Finally his memory was tested and found to be at the 6 year old level for visual and auditory memory. Martin is learning a lot about note taking in resource class. He is also learning to use a computer to overcome his memory. Memory problems in children are uncommon, yet can fool you if you don't check for them.

To make matters even more difficult, all of the problems above could exist along with ADD-D. For example, a child might have a learning disorder in reading and ADD-D

The bottom line is, if a child appears to have ADD-D, each of these other possibilities has to be ruled out first. Sometimes, that is easy, sometimes, it is very difficult.

- ## Prognosis of ADHD (What does the future hold?)

As children with ADHD grow older, one of three things will happen.

1. The symptoms will go away. About 15-20 % of children with ADHD will grow out of it sometime in childhood or early adolescence. If a child has had this disorder for a long time, then he or she is less likely to grow out of it. For example, if a child is diagnosed with this disorder between ages 2-4, then they have about a 50% chance of outgrowing it. By the time they are age 5 at diagnosis, only about 25% will ever out grow it.(13) Family problems are associated with pre-school children not outgrowing this disorder.(14)
2. The symptoms will partially go away. Some children will show mild signs of it throughout their life but get by without too much trouble.

3. The symptoms will stay the same or worsen. About a third will have the full syndrome their entire life. It is more likely that ADHD will continue into adulthood if there is a strong family history of ADHD, a dysfunctional home, or comorbid psychiatric disorders. If two or three of these factors are present, it is almost certain that the child will have ADHD as an adult.

The Bad news of untreated ADHD – one of the worse psychiatric disorders (40)

As children with ADHD get older, comorbid disorders become more frequent. If you watch children with ADHD for four years, they have about 20 % more likelihood of having a comorbid disorder. About 60% will end up using some psychiatric medication at one time or another. About 45% will have been in a resource class. About 40% will have repeated a grade.

Cigarette smoking is likely in children with ADHD. About 20% of 10 yr. olds with ADHD will be smoking four years later, twice as much as normal children.

Children with ADHD have more accidents. Children with ADHD are more likely to have lacerations requiring sutures. They are more likely to break bones. They are much more likely to have severe head trauma. That is, if you look at children who have severe head trauma, ADHD is four times as common as one would expect in a group of children (6).

Substance abuse is likely in children with ADHD. About 50% of children with untreated ADHD will go on to have a substance abuse problem as adults. These rates are much lower if they stay on medication.

Adolescents with ADHD are four times more likely to have sexually transmitted diseases than those without ADHD. They have many more children, but in follow up only 54% actually have custody of their biologic children.

Adolescents with ADHD have more accidents in vehicles. They have three times as many serious injuries from accidents and four times as many motor vehicle accidents. They lose their licenses more often, have more crashes, and more speeding tickets. These rates are the same as normals if they take their medication.

People with ADHD don't do well in school without treatment. They are three times more likely to be held back a grade, three times more likely to be suspended, and are much more likely to drop out (about a third drop out).

A bad outcome is more likely in children who come to clinical attention before school age, those with two or more comorbid conditions, those who are abused or come from chaotic families, and those who receive no treatment. What do I mean by bad outcome? Poverty, suicide, psychiatric disability, no stable partner, alcoholism, prison, and unemployment. ADHD is six times more common in suicide victims than in the general population.

ADHD is a very serious condition. Some children will grow out of it and have few problems. Many will not. It is in these children that treatment is essential. My view is that ADHD should be treated aggressively. Children should be treated early. A number of different interventions should be tried. Parents should learn all they can about this condition and demand the best possible treatment for their children.

The prognosis can be very bleak, but that doesn't mean that it is hopeless. I have seen children and adolescents with multiple co-morbid conditions and other bad prognostic features do well with treatment that involves a little bit of everything. Unfortunately, I have also seen many children who seemed immune to any intervention.

And the Good News?

ADHD is probably the most treatable disorder in all of neurology and psychiatry! Read on for the details! Click here to go to the treatment