

Understanding Attention Deficit Hyperactivity Disorder

Attention Deficit Hyperactivity Disorder (AD/HD) refers to a cluster of learning and behaviour problems that cause a child to under-function for intellect and under-behave for the quality of parenting they receive. These behaviour and learning problems are caused by a subtle difference in the fine-tuning of the normal brain. This difference seems to be related to a slight imbalance in the brain's message transmitting chemicals, the neurotransmitters. This mostly affects those parts of the brain which control reflective thought and putting the brakes on ill-considered behavior (the frontal lobes and their close connections).

AD/HD affects at least two percent of the school-age population, and some quote figures as high as five percent. Boys are more affected than girls. The first behaviours of AD/HD are usually apparent before three years of age, but few of these children require treatment before they start school. AD/HD is a chronic condition and it is now believed that approximately 60% will take some of their symptoms with them into adulthood. The successful treatment of adults with AD/HD has been an exciting new development.

A MODERN VIEW OF AD/HD

When parents describe their AD/HD child, they refer to a blend of four separate parts, only two of which correctly fit the AD/HD diagnosis. The two parts of true AD/HD are *AD/HD-Hyperactive-Impulsive behaviours*, and *AD/HD-Attention Deficit-learning weakness*. These two AD/HD parts are then affected by the presence or absence of a third part, the *comorbid conditions*. Comorbid refers to associated problems which are not caused by AD/HD but coexist in over half of the children who have true AD/HD e.g. dyslexia, Oppositional Defiant Disorder and Conduct Disorder. Finally, this mix of AD/HD and comorbid conditions is greatly influenced by the fourth part, *parenting* and support in the child's environment.

AD/HD - THE FOUR PARTS

The First Part: AD/HD-Hyperactive Impulsive behaviour (poor self control of behaviour)

Impulsiveness: Speaks and acts without thinking, interrupts, calls out in class, low frustration tolerance, may appear aggressive, difficulty 'putting the brakes on behaviour', rushes carelessly through work, accident prone.

Demanding: Unaware when to let a matter drop, intrudes, generates tension, difficulty 'backing off'.

Social Clumsiness: Misreads social cues, overpowers, bosses, wants to do things their way, acts silly in a crowd, intrudes into other's space.

Overactivity: Restless, fidgety, taps, fiddles, has to touch, over-charged, has 'an overwound spring'.

The Second Part: AD/HD-Attention Deficit and learning weakness (problems of executive control)

Inattention: Works poorly without one to one supervision, difficulty regrouping after distraction, self distracts, day-dreams, flits from task to task, inconsistent work output, gets over-focused on one part and misses the big

picture.

Poor short term memory: Forgets instructions, loses focus, reads but does not remember, difficulty with mental arithmetic.

Disorganisation: Forgets homework books, misjudges time, procrastinates, poor prioritisation, variable performance, poor planning.

NOTE: - Most AD/HD children have a mix of both the first (behaviour) and the second (inattention-learning) parts. Some have one of these in isolation (e.g. AD/HD-predominantly inattentive). This is probably more common than we realise and is often not picked up as these children underachieve, but do not 'under-behave'. A small group has an even purer presentation (AD/HD-inattentive only) which leaves them dreamy, drifty 'space men'. This dreamy form of AD/HD is made much worse by its strong association with specific learning disabilities, particularly dyslexia.

The Third Part - Comorbid Conditions

Over half those with AD/HD have at least one associated comorbid condition. Between 40% and 60% have Oppositional Defiant Disorder where they say 'no' on principle. Approximately 50% have a Specific Learning Disability (e.g. dyslexia,

language delay-disorder, weakness in mathematics etc). Other comorbidities are, Conduct Disorder, Tic Disorder, Poor Coordination, Depression, Obsessive Compulsive Disorder and Bipolar Disorder.

The Fourth Part - The Child's Living Environment

Supportive, nurturing parenting, versus hostile critical parenting. Supportive schooling, versus un-accepting, punitive education. An extended stable family, versus an isolated, unstable rejecting family.

THE TYPICAL PRESENTATION

When the Hyperactive-Impulsive behaviours predominate these children are 'out of step' with brothers, sisters and other children. On history most of these were easy babies though once they started to walk many were active and into everything. At preschool some were more restless and found it hard to sit at story-time, others had low frustration tolerance and caused great trouble through their unthinking aggression to other children.

At home, parents describe a child who demands, intrudes into their space and generates tension. These children stir, wind-up their siblings and don't know when to let a matter drop. Many have a short fuse, act without thinking, interrupt and are accident prone. Some are messy, disorganised, forgetful, restless and constantly fiddling. In the playground some are socially out of tune, come on too strong and annoy other children. Many do not get asked to birthday parties.

Most come for treatment at the start of school where they are said to be distractible and disruptive. These children do best when stood over or they don't complete work. Teachers are confused that such an apparently intelligent child is so erratic and underachieving. Some have been tested by the school psychologist, who often finds a surprisingly good concentration in the 1:1 of the quiet test room. In children who have the predominantly inattentive type of AD/HD, problems of learning, memory and underachievement at school are the main complaints.

WHEN IS THIS NORMAL - WHEN IS IT AD/HD?

There is no clear cut off between those who have a normally active, impulsive and inattentive temperament and those who suffer AD/HD. If these behaviours are not causing anyone any trouble, they can be ignored. If these behaviours are causing a child to significantly underfunction

at school and under-behave at home, they must be taken seriously.

If we use the American Psychiatric Association's criteria for the diagnosis of AD/HD (DSM-IV), six out of a list of nine difficult behaviours must be present, but life is not as simple as this. If one child has these six behaviours, yet has a saint for a mother and the best teacher in the country, we may not consider diagnosing or treating. If there are only five behaviours but home and school are hanging by a thread, this child may be diagnosed and treated for AD/HD. If a child has only four of the listed behaviours, they are not called AD/HD, but they will still be difficult for parents and teachers. Academics deal in pure black and white situations; realists see life in much more flexible terms.

THE CAUSE

Until relatively recent times, professionals blamed the parents' attachment or relationships for causing these children's behaviour. Others said that AD/HD was due to additives in the food. Now we know that neither of these are the cause of AD/HD, though of course, the standard of parenting and some food substances may influence already existing AD/HD. Two things are for certain. Firstly AD/HD is strongly hereditary, and secondly it is a biological condition.

Heredity is obvious, as so many families have a parent or close relative who has similar problems. If one identical twin has AD/HD, there is about a 90% chance the other will also have the condition. If one sibling has AD/HD there is about a 30% chance another child will also be affected. The majority of children in my care have a parent or close relative who has experienced many of the same difficulties. For years it has been presumed, but not proven, that AD/HD was caused by a minor difference in brain function. Now this can be shown by the most modern research scans (PET, SPECT and special MRI). In AD/HD these scans show a slight difference of function and anatomy in the behaviour inhibition areas of the brain (the frontal lobes and their close connections). The mechanism of this under-function seems due to an imbalance of the brain chemicals which transmit impulses between certain nerves (the neurotransmitters - noradrenaline and dopamine). The effect of the stimulant medications, which are used to treat AD/HD, is to normalise the imbalance of these natural chemicals. One researcher has shown a normalisation of the PET scan in AD/HD after administration of stimulant medication.

DIAGNOSIS

It is confusing for parents as many professionals claim that their method is the only way to diagnose

AD/HD. There is no one conclusive test, and such is the greyness of the cut-off point that no two professionals will have exactly the same limits regarding diagnosis. Diagnosis can be approached in four steps:

- 1. Be alerted to the possibility of AD/HD:** The child under-functions at school for intellect and under-behaves at home for the quality of parenting, i.e. they are significantly out of step with brothers, sisters and peers who have the same background and level of development
- 2. Exclude AD/HD lookalikes:** Exclude major developmental delay, the normal 'spirited' preschooler, problems which are primarily of management and family dysfunction.
- 3. Pointers towards diagnosis:** Parent/teacher questionnaires, test profiles, brain tests, a continuous performance test (CPT). The CPT (e.g. Connors or TOVA) is of particular help when the presentation is predominantly one of a learning problem or the picture is clouded by comorbid conditions.
- 4. A careful history, and observe the child:** "When she walked she was into everything." "At the start of school he was disruptive and distractible." "She only works well when stood over." "He goes on and on, intrudes and causes tension." "He's impulsive, short fused, and socially out of tune." "Discipline and management is many times more difficult." "She's disorganised and has a poor short-term memory." "School reports say he could do better if he could attend."

NOTE: There is no black and white dividing line that pinpoints the 2% that we believe have a major degree of AD/HD. The cut-off is blurred by other factors such as, the calmness and consistency of home; the tolerance of the parents and the skills of the class teacher. Diagnosis sometimes remains a matter of trial and error. I believe that a robust response to treatment confirms the correct diagnosis, though the suggestion that diagnosis should be made by means of treatment is seen as 'politically incorrect'.

TREATMENT

Managing AD/HD involves:

- Helping school and the classroom teacher
- Structuring home for peace
- Boosting self esteem and developing outside interests
- Considering other therapies
- Medication.

School:

- Accept this is not naughtiness - it is part of the child's makeup - they can't help it

- They need a quiet class run by a teacher who will be there every school day, all year.
- A firm but encouraging teacher who knows when it is best to back off.
- Seating near the front, away from distracting influences.
- Clear, stepwise instructions and constant feedback.
- Special supervision at times of change, e.g. coming in from break or on a school excursion.

Home:

- Accept that this is the way your child has been made and no amount of force will beat it out of him. Be patient, have realistic expectations.
- Normal behaviour techniques work poorly in the AD/HD child, because they have a biological difference in their ability to inhibit behaviour (they act before they have thought of the consequences). For this reason, disregard any expert who believes that a standard behavioural program or parent effectiveness course will easily change your AD/HD child.
- It is known that poor parenting can cause bad behaviour, but with AD/HD, the child's bad behaviour causes good parents to appear poor.
- Parents must think before they act and learn to ignore all but the important misbehaviours.
- Routine is essential. Change behaviours using small, well-planned steps,
- Rewards should be frequent and constantly repeated.
- Don't lock horns with an AD/HD child, then increase the pressure. This produces a battle of wills, two angry parties, opposition, resentment and damage to relationships.
- Don't argue. Don't get heated. Don't escalate. Use a matter of fact, unemotional, controlled voice.
- Give yourself room to manoeuvre. State the rule - Count to three - Use time out - Give choices - Don't force into a cul-de-sac.
- Remember, even the worst behaved child is good 95% of the time. Reward this positive side, catch them being good!

Esteem:

- Children must be encouraged to try out a variety of sports, hobbies and interests in the hope they may savour success at something.
As parents, we must watch our negative words.
- Listen, value what they say and give *reasonable* responsibility.
- Swimming, bike riding, walking, fishing, cooking, judo, and computers, may be useful.
- Team sports and scouts suit some AD/HD children but not all. Success at sport, when present, gives an immense boost
- Out of school tutoring may be useful, but don't over

do it. This puts all the focus on the child's areas of failure.

- Encourage friendships and try to take a friend on outings and activities.

Other Therapies

- Diet does not cause AD/HD. Most current research suggests that less than 10% of AD/HD children *are* affected by natural or artificial preservatives, additives and colourings. Where diet is incriminated, most parents have pinpointed one or two foods which they now avoid. Irritability and overactivity appear the most diet sensitive behaviours, but these are not the main problems of the true AD/HD child.
- Occupational therapy helps the poor handwriting of AD/HD.
- Too much or too little sugar does not influence AD/HD behaviour.
- The brainwave modifying techniques of biofeedback are viewed by many researchers as controversial.
- Multi-vitamins and natural products are unproven.
- Eye exercises, tinted lenses and sensory integration are all of questionable benefit in the treatment of learning and attentional difficulties.

NOTE: I urge all parents to be sensible when it comes to treatment. Use the well researched therapies that are known to be safe and successful, ahead of those that are controversial and unlikely to bring big benefits.

MEDICATION

The main medications used in AD/HD are the stimulants dexamphetamine and methylphenidate (Ritalin). These have been shown to be effective in over 80% of AD/HD children in the short to medium term. There is still a lack of data on the long term benefits. Other non-stimulant drugs, e.g. clonidine (Catapres) and imipramine (Tofranil) are also used either alone or in combination. Clonidine is of particular use when stimulants alone are unable to adequately control a child's impulsivity and overactivity. This is also used when settling to sleep is a major problem. Tofranil is the second line drug which helps behaviour and attention when the stimulants are shown to be ineffective. The non-stimulants are not without their risks and must be used cautiously. There are particular dangers with accidental overdose, so tablets must be given correctly and stored securely.

Stimulant medication was first used in AD/HD in 1937. The drug Ritalin has been used since 1958.

These preparations have now been extremely well researched and proven. See full details and research references in the book, 'Understanding AD/HD'.

There are still people in this country who state that stimulants are new, controversial, addictive, dangerous and unproven. In 1997 this is just not true. Be extremely suspicious of anyone who voices such out of date ideas, as the rest of what they say may be equally unreliable. There are people who still believe the earth is flat, but that's their problem.

With Stimulants:

- These drugs act by normalising the imbalance in the brain's natural neurotransmitter chemicals, i.e. they increase noradrenaline and dopamine.
- These are not sedatives, they enhance normal brain function.
- Though stimulants may work to a minute degree in the child without AD/HD, when effective in AD/HD the benefits are usually quite miraculous in both behaviour and learning.
- Stimulants help focus attention, keep the mind on task and allow the child to consider the possible repercussions before they act
- Successfully medicated children become more organised and are easier to reach.
- Stimulants are short acting, starting in about 1½ hours while the effect has largely passed in 3 to 5 hours. Though the effect is short lived, about half of the medicine is still in the blood after 4 hours and one quarter after 8 hours. For this reason we tend to give larger doses early in the day which are then topped up by subsequent doses, e.g. 1½ tablets 8.00am, 1 tablet 12 noon, ¾ tablet at 3:30pm.
- Addiction has not been described in the correctly diagnosed AD/HD child. Stimulants help the child focus and bring them into reality. You don't get addicted to reality.
- Stimulants are usually given in either 2 or 3 doses in the day.
- When there are only problems with schoolwork, medication is only given on school days.
- When there are problems with behaviour, socialisation, and stress to parent-child relationships, medication is given every day, including weekends and holidays.
- The medication Ritalin is similar but not identical to dexamphetamine. I recommend both preparations be trialed to ensure we prescribe the most effective medicine with the fewest side effects.
- The most common side effect, when starting medication, is for the child to become withdrawn, teary and irritable. This is only at

the time of commencing medication or raising the dose. If it happens this can be removed by gradual introduction or trying other medication.

- Many children report reduced appetite and some find it is more difficult to settle to sleep. These and most other problems can be avoided by careful fine tuning of the dosage.
- Though long term side effects are not a concern, the benefits of long term therapy are still to be conclusively proven.
- One study has shown that AD/HD children who are treated with stimulants are less likely to drop out of high-school or engage in substance abuse, than the untreated.
- AD/HD children become closer and relate better to their friends and families when given medication. Relationships are of vital importance for long term happiness and self-esteem.
- Side effects are remarkably rare and usually avoided when your doctor trials both

preparations and fine-tunes carefully.

- Medication will continue for as long as the parents and teachers see significant benefits. If ever in doubt, stop for a week and see what happens.
- Parents, not doctors, are in charge. Doctors can recommend these medications, but it is always the parents who have ultimate control. You must stop the medication if you think it is not working or is causing any unwanted side effect. If you are worried you must call for help.
- Remember that untreated AD/HD is not without its hazards. Many untreated children are at war with their parents and arrive in adolescence with destroyed family relationships. Some are accident prone, a number being seriously injured or even killed. There is no completely safe drug, but the dangers of medication are much less than the emotional and physical dangers untreated AD/HD.

FINAL THOUGHTS

AD/HD is a real condition whose importance has only recently become understood. When misdiagnosed and mistreated, this can cause amazing stress and long term damage to self-esteem and family relationships. At school, these clever children under-function and start to believe they are stupid.

With medication and other treatments we cannot cure AD/HD. Our aim is to keep the enthusiasm to learn, maintain self-esteem and to keep families at peace, until hopefully adolescence will bring some academic acceleration and a more reflective style of behaviour.

In the past most AD/HD children remained undiagnosed. Many arrived in adulthood with a belief they were inferior and dumb. This may have been acceptable, in the past, but we are not going to let it happen in 1997.

For references and details of the above outline - please see
"Understanding AD/HD" Dr Christopher Green and Dr Kit Chee
Vermilion - Random House, London - August 1997



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