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**Attention deficit with or without hyperactivity.**

Attention deficit and hyperactivity are symptoms not diseases. When hyperactivity and attention deficit disorder are spoken of as diagnoses rather than symptoms there is no interest in the cause. The symptom is treated as if all the causes were the same. Certainly, the Naturopathic approach is to treat the cause not just the symptom. Consequently, finding the cause of attention deficit and hyperactivity must be of primary importance.

Sydney Walker, a pediatric psychiatrist, in his book *The Hyperactive Hoax* believes the DSM (American Psychiatric Association) Guidebook to what psychiatry considers mental illness is partly to blame. This provides a list of symptoms to describe ADHD, which results in a label being given in lieu of a diagnosis. Doctors simply choose from a menu list of symptoms (6 from column A or six from column B). In fact virtually all children have enough symptoms to get a DSM label and a drug, and of course DSM labeling is a danger to ill children whose true diagnosis remains undiagnosed and untreated.

“A few decades ago boisterous boys and girls were affectionately called scamps, rascals and class pests. Now these children are labeled as sick, and Drs are putting them on powerful medications for years or even decades. In effect we are coming ever closer to chemically designing children who will be obedient, docile and compliant. It’s chilling that on the Revised Conner’s Questionnaire, a form often used to “diagnose” hyperactivity, two symptoms include being “sassy” and “wanting to run things”, characteristics that would be called independence and assertiveness in adults. The education system is by necessity a mass enterprise geared to the abilities of the majority. Many smart children act up at school because they are simply bored with waiting for others to catch up.” Sydney Walker: *The Hyperactivity Hoax*

Comparison of criteria for ADHD with criteria for giftedness

ADHD (Barkley, 1990)	Giftedness (Webb, 1993)
<ul style="list-style-type: none"><li>• Poorly sustained attention in almost all situations</li></ul>	<ul style="list-style-type: none"><li>• Poor attention, boredom, daydreaming in specific situations</li></ul>
<ul style="list-style-type: none"><li>• Diminished persistence on tasks not having immediate consequences</li></ul>	<ul style="list-style-type: none"><li>• Low tolerance for persistence on tasks that do not seem relevant</li></ul>
<ul style="list-style-type: none"><li>• Impulsively, poor delay of gratification</li></ul>	<ul style="list-style-type: none"><li>• Judgement lags behind development of intellect</li></ul>
<ul style="list-style-type: none"><li>• Impaired adherence to commands to regulate or</li></ul>	<ul style="list-style-type: none"><li>• Intensity may lead to power struggles with</li></ul>

inhibit behaviour in a social context	authorities
<ul style="list-style-type: none"> <li>• More active, restless than normal children</li> </ul>	<ul style="list-style-type: none"> <li>• High activity level, may need less sleep</li> </ul>
<ul style="list-style-type: none"> <li>• Difficulty adhering to rules and regulations</li> </ul>	<ul style="list-style-type: none"> <li>• Questions rules, customs and traditions</li> </ul>

If your child scores above average on IQ tests, acs exams, has no trouble with homework, has no apparent learning disabilities and primarily exhibits behaviour problems at school, consider that he or she may need a more challenging classroom. If your child is gifted in a specific area such as music, art or acting consider special programs to nurture that talent. In addition, some children are just eccentric. Does this mean that they should be drugged into normality? An ever-increasing number of children labelled hyperactive are merely under disciplined children who need firm discipline and strict rules.

If a child is hyperactive and struggling at school it is necessary to obtain a thorough medical examination. Could indicate a wide range of medical problems from hearing and vision problems to toxic exposure to mixed dominance (treatable condition in which neither side of the brain establishes clear dominance). Is there an obvious reason for change in your child's behaviour or is it sudden and unexplainable? Are there accompanying declines in motor skills? Is your child being bullied at school? There are so many different reasons why a child might have behavioural problems at school and home.

#### RITALIN®

We've all heard of Ritalin. Ritalin® is a stimulant amphetamine, much like "speed" that also chemically resembles cocaine. It is thought to inhibit reuptake of a dopamine, a chemical neurotransmitter in the brain. Cocaine, morphine and methylphenidate (Ritalin®) are all classified at Schedule II drugs on the addictiveness scale. By creating an artificial chemical high, like cocaine, Ritalin® make users feel smarter and more alert and focussed. Academic improvement is however usually short lived and students simply become more compliant and follow the rules. It used to be thought that if a child responded to Ritalin® that this was in itself a diagnosis of ADHD. It was thought that it magically affected hyperactive children differently from non-hyperactive children, calming hyperactive children while making non-hyperactive children more active. However, controlled studies have showed that children with or without hyperactivity react to Ritalin® in much the same way.

And the sad fact is that while most parents are not at all happy about putting their child on this drug, they feel pressured to do so either by the school system, or by a state of desperation because their child seems to be completely unmanageable. As I discussed earlier, perhaps the most difficult thing to accept is that the Doctor is probably prescribing the drug based on symptoms alone with no extensive search for the cause. There will be children for whom no organic cause can be found. Parents may feel that Ritalin® is the last resort. However, even in these cases alternative therapies such as homeopathy, acupuncture, craniosacral therapy, as well as relaxation techniques such as yoga, meditation and massage can be extremely beneficial.

Walker believes that Drs who cover up disease symptoms with “feel-good” drugs like Ritalin® lull parents into thinking that their children are being treated, when they are merely being pacified by a mind-altering drug are irresponsible. He also feels that it is also a good way to encourage normal boys and girls to develop drug or alcohol problems. We are not just telling them that it is okay to take drugs to mask symptoms of disease. We are actually telling them that it is okay to take drugs to treat perfectly normal moods and behaviours, such as restlessness and boredom. Many of these normal, active children are simply bored out of their minds at school.

We are also using drugs, in these instances, to solve problems that are often not biological but social. For instance, a boisterous child in a class of 15 students is easy to keep under control. A normal, boisterous child in a classroom of 34 students is a real problem. It is not surprising that as class sizes get bigger and bigger, the number of children labeled hyperactive and put on Ritalin® keeps increasing. Too many doctors find it cheaper and easier to drug children than to get to the roots of their problems.

The Physician’s Desk Reference (PDR) describes short-term adverse effects of Ritalin®. This include: *nervousness, rashes, anorexia, nausea, dizziness, headaches, cardiac arrhythmia’s, blood pressure changes, angina, abdominal pain, decreased appetite and weight loss. Sleeplessness* is also frequently observed, and 9% of Ritalin® users develop tics or dyskinesia. Children have been observed to become *robotic, spacey, listless, anxious and emotionless, even suicidal*. In addition, *depression* is often observed related to the need to be on a pill to control their lives. The long term effects are not known. It is not recommended for children under the age of 6 years, yet more than 200,000 prescriptions were issued for children under the age of 5 in 1993.

**So how many children are on Ritalin® at this time?**

No firm figures, but it is clear that the numbers are increasing dramatically. In the 1980 between 200,00 and 500,00 in the USA. In 1997, 750,000 children were believed to be on the medication. In 1999, 3.5 million were on Ritalin® with another 1.4 million taking other medications such as Dexedrine. No other country comes close to the US in the production and use of Ritalin. 90% of all Ritalin is produced and used in the USA. Canada has seen a similar rise although it is still about one-quarter per capita use as compared to the USA. Britain has a policy of intervening with social support for children with ADHD and using Ritalin® only as a last resort. Sweden prohibits use of the drug.

Number of Methylphenidate Prescriptions Dispensed Throughout Canadian Pharmacies

	1990	1997
Canada	138,000	652,000
Ontario	62,000	235,000

Quebec	36,000	183,000
Prairies	14,000	120,000
Maritimes	14,000	60,000
BC	12,000	54,000

Estimated number of patients prescribed or recommended Drug Therapy for ADHD in Canada

YEAR	# patients
1993	100,000
1995	282,000
1997	322,000

### **The Cortical Atrophy Question**

Repeatedly researchers have used the observation that children with ADHD have a certain amount of cortical atrophy to argue that ADHD is in itself a clinical disease of the brain., recently it has been pointed out that since all the patients had been treated with stimulants, the cortical atrophy (brain deterioration) may be a long-term adverse effect of treatment.

Stimulants are no cure. Perhaps its use could be excused if stimulant treatment somehow worked. But it doesn't, at least not for the children themselves. Parents have been encouraged to believe that pharmacological control will boost their child's learning and social skills, but this rarely happens.

We have replaced specialists with pills. Ritalin® does not solve anything. Once a child is taken off the pill, he or she is still faced with the same problems whatever the cause.

Many 100's of diseases result in symptoms of hyperactivity, which often increase as the child becomes an adult. This demonstrates the importance of giving the child a complete medical/ dietary/ lifestyle work-up, with due care and attention to all possible differential diagnoses. However, this is rarely performed by the family doctor.

### **Causes of hyperactivity:**

**Parasites and Poisons:** Chronic fatigue can be caused by pinworm infections. Pinworm, roundworms tapeworms and hookworms can all result in sleep disturbances, abdominal pain, headache, behavioural disturbances. Children can be sluggish and "depressed", or chronically fatigued if the infestation is big enough. Viruses, bacteria and fungi can also alter a child's behaviour. Toxicity from environmental and household pollutants, such as solvents, pesticides, heavy metals (lead, manganese, cadmium and mercury), carbon monoxide. High lead levels: school failure and delinquency. For example, high mercury levels cause agitation and cognitive problems, while manganese toxicity is linked to aggression and criminality.

**Genetic, metabolic and endocrine diseases:** that can make children hyperactive include Turner's syndrome, sickle cell anemia, diabetes. Increased hormone production from the liver thyroid and adrenal glands. Asthma where blood oxygen level might be low. Tourette's syndrome can produce hyperactivity, and even antisocial and criminal behaviour. Interestingly, it can also be unmasked by Ritalin®.

Almost any genetic disorder could lead to hyperactivity or behaviour problems.

Structural defects in the brain such as cortical atrophy and lead toxicity can cause hyperactive behaviour. So too can carbon monoxide (CO) toxicity, head injury and post-concussion syndrome, steroids, solvents (chronic), parasites, decreased oxygen to the brain, even Ritalin® itself (amphetamine brain). Temporal lobe seizures (often too subtle to be detected by the eye) can result in violent outbursts, unexplained acts and mental "absence". Tumours and cysts can lead to significant behavioural changes.

**Congenital Defects (occurring in the womb):** Fetal Alcohol Syndrome, and effects, Cigarette smoking.

**Other Structural Damage** About 1 in 100 children are born with Ht defect (# appears to be on increase): pallor, irritability, AD, lack of appetite, sweating, slightly bluish fingers, lips and toes. Other cardiac conditions can decrease the blood supply to the brain resulting in impaired thinking, irritation and aberrant behaviour. Almost any organ could be affected. Hyperthyroidism for example can produce fear, hostility and demanding hypercritical behaviour.

### **Lifestyle Hyperactivity**

- a) **Bedtime** Children do much better with consistency and rules.
- b) **Illicit drugs** Many such as solvent abuse and coke can lead to permanent brain damage. Marijuana impairs attention and short term memory.
- c) **Pesticides** Levels are surprisingly high *indoors*.
- d) **Other chemicals:** Mothballs, disinfectants, furniture polish, air fresheners and of course cigarettes (1<sup>st</sup> and 2<sup>nd</sup> hand) can all exacerbate existing behavioural problems.
- e) **Medicine cabinet:** Certain drug food interactions can be detrimental. Insect repellent (DEET). Certain drugs cause brain atrophy resulting in disturbed cognition and behaviour.
- f) **Home /parent problems:** Difficulties at home can have profound and lasting affects on a child. Important not to burden the child, avoid using them as pawns in husband/wife dramas, be honest but reassuring and postpone arguments until the children are out. Divorce shakes children up severely. Joint custody can be very confusing for children. Changes in a child's mood or behaviour at this time is expected and normal, but it is wise to give them professional help.
- g) **Lack of exercise:** Extremely important for children to have exercise. It reduces moodiness and problem behaviour (increases serotonin and endorphin levels in the brain). Children should have vigorous exercise for at least 30 minutes per day (Hand exercises using computer mouse does not count!!). The amount of TV and computer games should be reduced correspondingly.
- h) **Overstimulation.** The frantic pace of life takes its toll. Fast paced TV shows and computer virtual

reality games can be very stressful, and can make real life seem phenomenally boring. In an interesting experiment, mice were exposed to a) no music, b) classical music or c) hard rock for 24 hours per day for 4 weeks. They were then allowed to find their way through a maze.

Mice exposed to the following for 24 hrs/day for 4 weeks.	Time taken to complete maze
No music	5 mins
Classical music	1.5 mins
Hard rock music	30 + minutes (mice killed eat other)

- i) **Nutrition** There may be many reasons why AD/HD has apparently struck the USA so hard. However, one very clear factor is unhealthy changes in eating habits over the last 50 years. It is well known that poor eating habits can lead to many chronic diseases such as heart disease and diabetes. What may be less obvious is that these same poor diets in young people can contribute to learning disabilities.

#### **A) Inadequate Nutrition**

Clear links have been made between inadequate nutrition specifically vitamin, mineral and amino acid deficiencies and learning disabilities. These nutrients are essential to allow the proper growth and functioning of all the major systems in the body, including the brain and peripheral nervous system. For example: iron deficient anemia can lead to poor job performance, despondency, fatigue, aggression, and irritability. B-vitamin deficiency, which is especially common in children, can cause hostile behaviour, outbursts and chronic fatigue. Blood sugar fluctuations (subclinical diabetes) can produce fatigue states, unexplained violent acts and panic attacks.

Generally, the N. American diet is far too high in fat, sugar and processed foods, and too low in whole grains, fruits and vegetables. The typical N. American dietary pattern consists of skipping breakfast, snacking on junk food and drinking cans of pop. “Bad” fats (particularly saturated fats) and simple carbohydrates dominate such a diet, deficiency of many of the vital vitamins and minerals, not to mention protein and roughage frequently results. One recent study showed that only 1% of the children (aged 2-19) surveyed consumed the recommended amounts of grains, vegetables, fruits, meats and dairy. 16% met none of the requirements, and 40% of the calories were from fats and sugars. The fact is that children who have grown up with this type of diet have no idea that “real” food is different. Not to mention that a hungry child is likely to be an angry child.

Common Nutritional Teachings	ADHD Wisdom
Count calories	Count grams of carbohydrates
Fat is the culprit	Carbohydrates are the culprit
Keep proteins low	Keep proteins high
One egg per week	Four or more eggs weekly
Observe food pyramid	Turn food pyramid upside down
Low cal, low fat is best	Low cal, low fat is often worse
Aspartame instead of sugar	Stevia instead of aspartame
Bread, pasta, potatoes daily	Avoid bread, pasta, potatoes
Fruit and fruit juices daily	Fruit and fruit juices seldom
Margarine instead of butter	Butter instead of margarine
Skim or 1% milk	Whole fortified soya, almond or rice milk

It has been hypothesized that the absence of certain foods from the diet can be responsible for a child's behaviour problems in some cases. Some examples are described below:

**EFA's** Certain types of fat are not only good for the body, but are essential. These essential fatty acids are often found in very small quantities in the average diet. Fries, doughnuts, potato chips contain hydrogenated or partially hydrogenated oils that not only can result in the production of reactive free radicals, but their presence leads to a decrease in essential omega 3 ( $\Omega_3$ ) fatty acids in food. Diet of hunter-gatherers had a ratio of  $\Omega_6$ :  $\Omega_3$  of 1:1 or 1:5. Today the ratio in average North American diet is completely reversed. Now there may be up to 10-12x more  $\Omega_6$  than  $\Omega_3$ . Symptoms include bumps on the backs of arms, increased allergies, increased thirst, increased urination, dry skin and hair, brittle nails and acne. Hemp oil is the closest to the 1:3 ratio that the body utilizes best. Evening primrose oil, flax, hemp safflower, sesame, sunflower and borage oils, as well as chicken and legumes are a good sources of  $\Omega_6$ , while hemp and flax seed oils, and cold water fish such as salmon, herring, mackerel and sardines are good sources of  $\Omega_3$  fatty acids.

**LCP's** Jacqueline Stordy Ph.D. (The LCP solution) suggests that it is actually a deficiency in the long chain polyunsaturated fatty acid (LCP) made from the essential fatty acids, that is common in ADHD. She believes that there is an inborn error of metabolism that affects the conversion of shorter-chain EFA's such as  $\Omega_3$  and  $\Omega_6$ , into long chain PUFA's, and the subsequent incorporation of the latter into cell membranes. This results in a decrease in the membrane concentration of PUFA's, which are required for normal effective, rapid-fire communication between neurons. These LCP's are found in abundance in breast milk of healthy well-nourished women, but are usually lacking in formula or milk of malnourished, even vegan women. Fish such as mackerel, salmon, rainbow trout, tuna, sardines and bluefish are the very best source of the LCP's DHA (docosahexanoic acid) and EPA (eicosapentenoic acid). However, to combat learning

disorders large quantities of such fish would have to be consumed. So for most people, supplementing with LCPs is the easiest, most cost-effective method of obtaining nutritional benefits. Dr. Stordy recommends 480 mg of DHA per day in fish oil for both adults and children. These LCPs are especially important in the diet of newborn babies.

**Protein:** A look at the average child's diet is quite a shocking eye opener. As part of my work up with a new patient I ask them to fill out a weekly diet diary. The thing that stands out the most in my mind is the obvious lack of protein. Amino acids are the building blocks of all hormones, enzymes and brain neurotransmitters, in addition to many other important functions. To calculate the amount of protein that a person should consume in a day: **weight in kg x 0.8 = grams of protein.**

E.g. 120lb = 54.5kg corresponding to 45gms protein.

Food	Grams protein
1 slice beef bologna	3
1 beef weiner (5" long 3/4" diameter)	5-6
1 slice ham (6" x 4" x 1/16")	5
1egg (extra large)	7
Beef (lean, ground) 3oz	20-24
Almonds (sliced) 1 cup	19

It is interesting to note that a high protein diets may have a calming effect on hyperactive children, who may need more protein than other children because they flush out protein more readily.

**Water:** The average person losses 1.5 to 3 liters of water per day, and if this is not replaced there are several unpleasant outcomes. When water loss rises to about 2% of body weight, the appetite is reduced, the circulation slows, there is a sense of emotional discomfort, agitation and a perception that things are not right. Further water loss results in a feeling of nausea and chronic tiredness. Hands and feet tingle, and headaches can occur. Anything containing caffeine, and large amounts of salt will increase the rate at which water is lost. So even insufficient water intake can contribute to mood and behaviour!

In addition, it now appears that even if we do attempt to eat a healthier balanced diet, it is hard to obtain all the nutrients that we need. Our ancestors may have been able to obtain everything from unrefined food grown in nutrient-rich soils that were not contaminated with chemicals. Now the soils are so depleted that the mineral content of food is greatly reduced. Organic food on the other hand generally has much higher concentrations of nutrients because they are grown in soils fertilized with organic fertilizer.

### **B) Too much of a bad thing**

In addition to lack of nutritionally good food, allergies and hypersensitivities to foods have also been found to have a significant affect on behaviour. Then brain actually swells after the consumption of certain

allergenic foods. Headache, weakness, anxiety, depression, visual and hallucinatory disturbances, struggle with abstract concepts, difficulty keeping focussed on a task, as well as severe affects on reading and writing have been observed following intake of a food to which a person is sensitive. (What's Food Got To do With it? Hills and Wyman).

The eight foods that are most likely to cause a hypersensitive reaction are: *wheat, dairy, corn, eggs, soy, citrus, peanuts and citrus*. Allergy testing is available, but really the best test for whether or not someone is hypersensitive is complete elimination of the food for one month followed by re-introduction accompanied by careful monitoring of symptoms. Food additives (colouring and preservatives) In the mid 70's Dr Feingold a San Francisco pediatrician found that the elimination of certain foods such as sugars, chocolate. Food additives and foods containing natural salicylates significantly improved the behaviour of hyperactive children. The food additive component is not surprising since 2,800 additives were approved by the US Food and Drug Administration in 1998, 5 million pounds of antibiotics and hormones are also used each year to make animals grow faster and cows produce more milk.

The following are foods that are most likely to abnormal learning patterns in both adults and children.

**Dairy** includes milk, cheese, pizza, milk-based soup, butter, gravies, ice cream, puddings etc

**Wheat:** Results in decreased motor skills and pupil size. Epileptic seizures, interrupted sleep, apathy, decreased co-ordination, sore muscles, diarrhea, gas and malabsorption.

**Chocolate** contains methyl xanthines and tryptophan which can lead to drowsiness and decreased concentration. While the caffeine and sugar contents of chocolate can have just the opposite effect.

**Sugar** leads to a decrease in B-vitamins. The blood sugar drops 20 minutes after eating (reactive hypoglycemia) and oxygen levels fall resulting in forgetfulness and decrease in ability to concentrate. Sugar robs vitamins and minerals from the cells. Increases adrenaline levels and leads to increased anxiety, irritability and decreased concentration.

**Nitrates:** Found in preservatives, colouring and flavouring and can leads to stomach pain, blurry eyes and brain fog.

**MSG:** Headache, swelling, decreased concentration, dizziness, aggression, anger, increased Ht beat, nausea, skin problems, hair loss, insomnia mental and nervous system problems etc.

**Caffeine:**

Amounts of caffeine per cup.

Black tea (iced or hot)	50 mg
Green tea	35-45 mg
Coffee	100 mg
Colas, Mountain Dew, Dr Pepper	40-50 mg
Cocoa mix	3-15 mg

Homemade cocoa	10-50 mg
Chocolate	15-30 mg/bar
Anacin	32 mg/tablet
Excedrin	65 mg/tablet
Midol	32 mg/cap

>300 mg serious affects observed in children. This alone can account for hyperactivity in children. In addition to caffeinism (nervous, jittery, aggressive) caffeine also causes sleep deprivation and iron deficient anemia.

#### SUMMARY

In summary then, Attention deficit and hyperactivity are symptoms not diseases. It is clear that there are many different possible causes for problem behaviour in school age children and it is important to investigate the child's case fully in order to satisfactorily diagnose the cause. Once this has been established then the child can be treated accordingly.

Ritalin® is a mind-altering stimulant drug that is successful in some cases because of its ability to focus the mind, albeit for a short time. It should only be used when all possible causes have been ruled out, otherwise there is a danger of it hiding something that could be easily altered, such as diet or lifestyle, or worse still, it could mask something more serious.

#### OTHER

In addition to diet and lifestyle changes, Alternative Medicine offers many other possible solutions. Homeopathy can help to put the child into balance. By taking a complete case history a professional trained in homeopathy can work out a constitutional homeopathic remedy that addresses the child's specific challenges. Relaxation techniques such as yoga, meditation, massage can be very helpful to the hyperactive child. Other techniques such as Reiki and craniosacral therapy can also be very beneficial.