

Attention-Deficit Hyperactivity Disorder: Herbal and Natural Treatments

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Introduction

Attention-Deficit Hyperactivity Disorder (ADHD), also known by its older name, Attention Deficit Disorder (ADD), is distinctly a phenomenon of the late 20th and early 21st Centuries. At no previous time in history have so many children been diagnosed with a psychiatric disorder and placed on medication on the basis of what could be characterized as unruly behavior. Increasingly, children as young as three years old are being treated with stimulant medications. ADHD is also a distinctly American phenomenon. As of 1997, 90 percent of the Ritalin produced worldwide was consumed in the United States.¹ The rates of diagnosis are still much lower in Europe.

ADHD is classified as a neurological disorder, but it could just as easily be considered a neurological variant that is simply differently ordered. People diagnosed with ADHD tend to be creative, novelty-seeking types. In the book *Delivered from Distraction*, Edward M. Hallowell, MD and John J. Ratley, MD describe ADHD as a “misleading name for an intriguing kind of mind.”² They go on to point out that it is a collection of symptoms, some positive, and some negative. When it impairs people's lives, it becomes a disorder. When people learn to manage the disorderly aspects, they can take advantage of their many unique gifts and talents.

The mainstream view of ADHD tends only to emphasize the negative aspects. However, as Hallowell and Ratley point out, “The more you emphasize the downside, the more you create an additional pathology: a nasty set of avoidable, secondary problems, like shame, fear, and a sharply diminished sense of what's possible in life.” Some of the upsides of ADHD include “originality, creativity, charisma energy, liveliness, a unusual sense of human areas of intellectual brilliance and spunk.”³

It is not clear that ADHD is always maladaptive or that, from an evolutionary standpoint, it should be considered pathological. Nevertheless, it is a set of tendencies that does have significant disadvantages in today's society, and these can cause significant difficulties for people attempting to cope in with modern life. Regardless of whether genetics or our present environment are the cause of this, this can lead to significant distress that certainly should not be considered a normal and necessary part of human existence. Herbal practitioners view health not simply as the absence of pathology, but as complete mental and physical well-being, and this is the standpoint from which I will be approaching

ADHD. As long as there is distress, then there is literally “dis-ease,” and it is the herbalist's responsibility to address this.

For the sake of simplicity, although it could be debated whether ADHD is a true pathology or disorder, I am going to refer to it throughout this paper by its conventional name, ADHD. Although this paper is geared towards herbalists and herbal students, I have attempted to make it at least somewhat accessible to medical professionals and the general public as well, so in places I elaborate a bit on things that would be obvious to someone with a basic knowledge of herbalism.

Background

ADHD is classified as a neurodevelopmental behavioral disorder (it has neurological, developmental, and behavioral aspects). ADHD becomes apparent in some children in preschool and early school years. These children may have a hard time controlling their behavior and/or paying attention. The onset of some symptoms may occur before others. The National Institute of Mental Health (NIMH) estimates 3 to 5 percent of all children in the U.S., or 2 million total, have ADHD. In a classroom of 25 to 30 children, there would likely be at least one child with ADHD.

Since doctors in the United States do not have to report their diagnosis, the actual number of cases may be much higher. Hallowell and Ratley think that in a random sample of children, 5 to 8 percent might have ADHD.⁴ Harvard ADHD researcher Joseph Biederman, puts this estimate even higher, at around 10%.⁵ There is also a wide gender gap: four out of five children with ADHD are boys.

ADHD is not only a childhood issue. Many adults also cope with the symptoms of ADHD. For 30 to 40 percent of children, their symptoms will disappear at the onset of puberty. For the other 60 percent, ADHD will continue on into adulthood. ADHD is considered a persistent, chronic condition, for which there is no cure.

In those with ADHD, learning disabilities, Tourette's syndrome, Oppositional Defiant Disorder, Conduct Disorder, Anxiety, Depression, and Bipolar Disorder are all much more common than in the general population.

Symptoms

The symptoms of ADHD are divided into three groups: inattention, hyperactivity, and impulsivity. Many normal children have these symptoms at a low level. However, in children with ADHD hyperactivity, distractability, and poor concentration have significant negative impacts on school performance, social relationships, and behavior at home.

Inattention may manifest as follows: Children with symptoms of inattention may have a hard time keeping their mind on a task and may get bored after only a few minutes. Adults may have trouble focusing on task without becoming distracted as well. This can also manifest as disorganization and forgetfulness. However, this is not a complete deficit of attention: People with ADHD do have great ability to focus on things of interest to them. It is a popular misconception that, if you can pay attention to things when you are interested in them, then you must not have ADHD. It is paying attention to things that one does not find interesting that is much harder for those with ADHD.

Hyperactivity and impulsivity may manifest as follows: Children with symptoms of

hyperactivity may be constantly in motion. Teenagers or adults may feel internally restless. Children with symptoms of impulsivity may be unable to curb their immediate reactions and to think before acting. Even teenagers and adults may do things with small but immediate payoffs, rather than engaging in activities that take more effort, but have greater, delayed rewards.

Diagnosis

There is no definitive, objective, physical test for ADHD. Instead, the diagnosis is made by a professional, based on a number of criteria. The DSM-IV defines eighteen symptoms, of which six must be present in order to qualify for a diagnosis of ADHD. It defines three different patterns of behavior that indicate ADHD: predominantly hyperactive type, predominantly inattentive type, and combined type. Those of the predominantly hyperactive type have predominantly symptoms of hyperactivity and impulsivity. Those of the predominantly inattentive type have predominantly symptoms of inattention. Those of the combined type have significant symptoms of hyperactivity and impulsivity, as well as inattention.

Not everyone who has these symptoms would qualify for a diagnosis of ADHD. These behaviors must be demonstrated to degree inappropriate for the person's age. They must appear early in life, before age seven, and continue for at least six months. They must also create a real handicap in at least two areas of a person's life.

The diagnosis of ADHD may be made by a psychiatrist, psychologist, pediatrician, family physician, neurologist, or clinical social worker. In making the diagnosis, the professional first attempts to rule out any other potential causes the symptoms. The professional then interviews a child's teachers and parents, and other people who know the child well. For adults this can be a little more difficult, as it is necessary to go back through a person's childhood history in order to establish patterns of behavior.

Physiology

There are significant anatomical and developmental differences in the brains of children with ADHD. ADHD children have 3 to 4 percent smaller mass in the frontal lobes, temporal gray matter, caudate nucleus, and cerebellum than those without ADHD. Those treated with medication have a similar amount of white matter to those without ADHD. However, those not on medication have a smaller amount of white matter. In children with ADHD, there is lag in development of the prefrontal cortex of three to five years.

It is theorized that differences in the functioning of neurotransmitters plays a role in ADHD. Either those with ADHD do not produce as many of certain neurotransmitters, or else they do not respond to as strongly.

The main neurotransmitter implicated is dopamine, and several possible genes have been identified that may play a role in dopamine differences in ADHD. Dopamine affects feelings of happiness and satisfaction. When you have enough dopamine, you feel satisfied. ADHD may amount in part to a "reward deficiency syndrome," in which lower levels of dopamine create the constant need for stimulation.⁶ Dopamine is most strongly connected to hyperactivity-impulsivity symptoms.

Another neurotransmitter implicated is norepinephrine. Norepinephrine makes you feel alert,

motivated, and energetic. Norepinephrine is most strongly connected to inattention symptoms.

GABA may be another neurotransmitter that may be involved. GABA is the brain's main inhibitory neurotransmitter, and has calming effects. A deficiency causes anxiety, restlessness, and obsessive behavior, all symptoms sometimes seen in ADHD.

It is not clear whether these neurotransmitter differences have causes on the molecular level or are merely the result of higher-level differences in neurological functioning.

Causes

ADHD cannot be neatly categorized as either a genetic disorder or an environmentally induced disorder. Although genetics do seem to be the single most significant determining factor, genetics are not the only cause of ADHD. There are probably several different causes, and many of these could be characterized as an interaction of both genetic and environmental factors.

Genetics

ADHD is a highly heritable disorder. According to mainstream sources, genetic variation accounts for approximately 80 percent of the causes of ADHD, with environmental factors, such as trauma or toxic exposure accounting for 20 percent. According to The National Institute of Mental Health (NIMH), 25 percent of close relatives in families of ADHD children also have ADHD, as opposed to 5 percent of the general population.

Nutrition

Nutritional issues may play a huge role in ADHD. After genetics, diet may be the second most important factor. Nutritional deficiencies and excesses, as well as food sensitivities can have a huge impact on ADHD symptoms.

Blood sugar issues are one of the most important of these nutritional factors. Studies have shown that children with hyperactivity problems eat more sugar than other children.⁷ The problems that these children have with sugar do not seem to be a form of food sensitivity. Rather, they are related to blood sugar regulation. Hypoglycemia, which is normally unusual in children, is usual in children with ADHD.⁸ A study of 265 hyperactive children found more than three-quarters displayed abnormal glucose tolerance.⁹ Hyperinsulinemia has also been linked to ADHD,¹⁰ and to the extent that it is influenced by diet at least, ADHD could arguably be considered an offshoot of Metabolic Syndrome/Syndrome X.

What happens when the body is overloaded with simple sugars is a blood sugar peak, followed by a subsequent crash. Since glucose is the main fuel for the brain, when blood sugar levels fluctuate widely, so will concentration, focus, and behavior. Blood sugar peaks may cause hyperactivity; the crashes may cause attention problems.

It is also important to point out that it is not just simple sugars as such that are the problem. Rather, it is high glycemic load. A high-carbohydrate diet, whether it is based on sugary treats or whole grains, still has a high glycemic load. This is arguably not very good for anyone, and may pose particular problems for those with a tendency attention problems and hyperactivity.

Similarly, a low-protein diet can cause ADHD symptoms. This may also relate to blood sugar issues, since protein helps reduce the glycemic load of a meal, leading to better blood sugar regulation. In addition, it could be because deficiencies in specific amino acids, for which ADHD sufferers may have a greater need (based on variations in their genetics).

Other nutritional deficiencies can also cause of ADHD symptoms or contribute to them. One of the most important of these is a deficiency in essential fatty acids, including the omega-3 fatty acids DHA and EPA, and the arachidonic acid (an omega-6 fatty acid), which are precursors to prostaglandins used for communication by the brain. ADHD sufferers may have a greater need for these fatty acids. This could be because their absorption is poor. It may also be because they simply do not convert them into prostaglandins as well. Part of this could be genetic. Other dietary factors could also come into play. Nutrient deficiencies that hinder conversion of essential fatty acids into prostaglandins include Vitamin B₃, Vitamin B₆, Vitamin C, biotin, zinc (a common deficiency in ADHD sufferers), and magnesium.

Research at Purdue University confirmed that children with ADHD had inadequate intake of nutrients required for the conversion of essential fatty acids to prostaglandins. They had lower levels of had lower levels of EPA, DHA, and arachidonic acid. Supplementation with these three fatty acids and GLA (an omega-6 fatty acid) reduced their symptoms.¹¹

Some people with ADHD are sensitive to salicylates, from both natural sources (such as foods and herbs) and from drugs. A study at the University of Sydney, Australia found that 75 percent of children with ADHD reacted negatively in double-blind challenge to foods with salicylates.¹² Salicylates block the conversion of essential fatty acids into prostaglandins, which may be the mechanism of this sensitivity.

Deficiencies in nutrients involved in the production of norepinephrine can also present symptoms like those of ADHD. Some of these nutrients include magnesium, manganese, iron, copper, zinc, Vitamin C, and Vitamin B₆.¹³ Magnesium may be especially important. Magnesium deficiency symptoms include excessive fidgeting, anxious restlessness, coordination problems, and learning difficulties, despite having a normal IQ. Polish researchers examining the magnesium status of 116 children with ADHD found a deficiency occurred more frequently than in healthy children (95% of those with ADHD were deficient). They also found a correlation between magnesium levels and severity of symptoms. Supplementation of with 200 mg of magnesium for six months, improved the children's magnesium status and significantly reduced their hyperactivity symptoms, which worsened in the control group.¹⁴

One way in which children may become deficient in important nutrients involves repeated courses of antibiotics in early childhood. In a study of 350 hyperactive children at the University of Surrey in England, a significantly higher percentage of children with ADHD were found to have taken several courses of antibiotics in early childhood than those without ADHD. Further investigations found that children who had taken three or more courses of antibiotics before the age of three had significantly lower levels of zinc, calcium, chromium, and selenium.¹⁵

Food allergies and sensitivities can also be an important factor in ADHD, a fact which has for the most part been accepted in the mainstream medical community. Reactions to foods can cause both hyperactivity and difficulties with attention. 70 percent of children with ADHD react to food additives,¹⁶ and a study by Dr. Joseph Bellanti at Georgetown University found that 56 percent of children with ADHD tested positive for food allergies compared to 8 percent of controls.¹⁷ Another study by the Hyperactive Children's Support Group found that 89 percent of children with ADHD

reacted to food colorings, 72 percent to flavorings, 60 percent to MSG, 45 percent to all synthetic additives, 50 percent to cow's milk, 60 percent to chocolate, and 40 percent to oranges.¹⁸

Chemical food additives in general seem to be problematic for many of those with ADHD. Some of the additives that can cause problems include preservatives such as BHA and BHT, flavorings such as MSG, artificial colors, and nitrates. The yellow food dye tartrazine (E102) has been particularly problematic for those with ADHD. In a double-blind, placebo-controlled study by Dr. Neil Ward, emotional and behavior changes were found in every child who consumed tartrazine. The additive also reduced blood levels of zinc by increasing the amount excreted in the urine.¹⁹

Some of the foods that have caused a high incidence of allergic reactions, contributing to ADHD symptoms include dairy, wheat, corn, chocolate, citrus, yeast, soy, peanuts, and eggs. Some of the associated symptoms linked to food allergies include nasal problems, excessive mucus, ear infections, facial swelling and discoloration around the eyes, tonsillitis, digestive problems, bad breath, eczema, asthma, headaches, and bedwetting.²⁰

Toxic Exposure

Some other factors which can cause ADHD symptoms are toxic elements and excess anti-nutrients. The biggest problem here here is lead poisoning, which produces symptoms of aggression, poor impulse control, and short attention span. Another problem is excess copper, which is found in some children with ADHD. Studies have also linked high levels of aluminum with hyperactivity as well. Many toxic elements deplete body of essential nutrients, such as zinc, and contribute to nutritional deficiencies.²¹

Environmental stress from pollutants may also play a role in ADHD.

Pregnancy Issues

Smoking and alcohol use during pregnancy can produce ADHD-like symptoms. Prenatal trauma and oxygen deprivation at birth are also possible causes.

Injury

A small percentage of cases of ADHD may be caused by injuries to the brain.

Social Environment

Growing up in impoverished or abusive families may produce symptoms like those of ADHD. Recent research also suggests that watching too much television may permanently rewire the brain, reducing attentive capacity.²²

Conventional Treatment

Conventional treatments for ADHD fall into the class of medications and behavioral therapies. According to a study at the National Institute of Mental Health (NIMH), the most effective treatment

was shown to be a combination of medication and behavioral treatments. NIMH stresses that no single treatment is the answer for everyone, and different forms of treatment will work better for different people. Despite this, in practice, large numbers of children in the United States end up being treated with stimulant medications alone, often by busy family physicians with little specialized knowledge of ADHD.

The main problem with this from a constitutional herbal perspective is that these medications stimulate the body's adrenal stress response, creating a permanent state of stress and pushing and individual out of a state of constitutional balance. These medications generally work by inhibiting the reuptake of dopamine and norepinephrine in the neural synapses; this leads to greater amounts of these neurotransmitters. One of the results of increased levels of norepinephrine is stimulation of the adrenal gland, which in turn secretes greater amounts of stress hormones. This in turn stimulates the sympathetic nervous system, which reduces the functioning of many organ systems not needed in a crisis situation (such as the digestive system).

In Michael Moore's constitutional system of herbalism, most forms of physical imbalance center around some form of adrenal stress pattern. The way we deal with this is by using adaptogenic herbs, which help reduce and modulate the effects of the body's overactive stress response. (Adaptogenic herbs will play a big role in the herbal treatment of ADHD, as I will go on to explain later.) Stimulant medications have the exact opposite effect, an effect which could be described as anti-adaptogenic. This is not a good thing by any means. The body's stress response is meant to be turned on for a short amount of time, and then to turn off. Chronic overstimulation of the body's stress response mechanism can lead to all sorts of health problems.

All of the commonly used non-stimulant medications for ADHD inhibit the reuptake of norepinephrine as well, and presumably they work similarly in terms of their effect on adrenal stress response. They have some of the same side effects as the stimulant medications, such decreased appetite and insomnia, symptoms of an overactive adrenal gland and sympathetic nervous system.

Stimulant Medications

There are several stimulant medications approved in the United States for the treatment of ADHD. These are all classified by the DEA as Schedule II Controlled Substances, indicating the highest potential for abuse of all substances with a recognized medical use. With long-term use, these medications may cause dependency. Aside from their overstimulation of the body's stress response, the potential for abuse and addiction is the biggest problem with these medications.

Some of the general side effects of this class of medications are as follows: By far the most common side effect of these medications is appetite suppression. Less frequent side effects include headache, elevated blood pressure, elevated heart rate, nausea, vomiting, insomnia, tics or twitching, feelings of jitteriness or anxiety, feelings of agitations or even mania, and feelings of depersonalization or paranoia.

The following is a summary of the main stimulant medications used for ADHD:

Amphetamine/Dextroamphetamine

Brand Names: Adderall, Dexedrine

Mechanism of Action: norepinephrine and dopamine reuptake inhibitors

Side Effects:

- More common: anxiety; crying; depersonalization; dry mouth; dysphoria; euphoria; fast, pounding, or irregular heartbeat or pulse; hyperventilation; irritability; mental depression; nervousness; paranoia; quickness to react or overreact emotionally; rapidly changing moods; restlessness; shaking; and shortness of breath; trouble in sleeping
- Less common: chills; cold and flu-like symptoms; cough or hoarseness; difficult or labored breathing; lower back or side pain; painful or difficult urination; tightness in chest; wheezing; constipation; cramps; diarrhea; difficult, burning, or painful urination; difficulty in speaking; dizziness or lightheadedness; dryness of mouth or unpleasant taste; fast or pounding heartbeat; frequent urge to urinate; headache; heavy bleeding with menstrual period; inability to have or keep an erection; increased sensitivity of skin to sunlight; increased sweating; itching, redness or other discoloration of skin; loss of appetite; lower back or side pain; nausea or vomiting; pain; severe sunburn; sleepiness or unusual drowsiness; stomach cramps or pain; tooth disorder; twitching; weight loss

Dexmethylphenidate

Brand Name: Focalin

Mechanism of Action: norepinephrine and dopamine reuptake inhibitor

Side Effects:

- More common: fear; nervousness; acid or sour stomach; belching; dry mouth; headache; heartburn; indigestion; stomach discomfort, upset, or pain; loss of appetite; nausea; throat pain; weight loss
- Less common: fast, pounding, or irregular heartbeat or pulse, Fever; sleeplessness; trouble sleeping; twitching; inability to sleep

Methylphenidate

Brand Names: Ritalin, Concerta, Metadate ER, Metadate CD

Mechanism of Action: norepinephrine and dopamine reuptake inhibitor

Side Effects:

- More common: Fast heartbeat; increased blood pressure; loss of appetite; nervousness; trouble in sleeping
- Less common: chest pain; fever; joint pain; skin rash or hives; uncontrolled movements of the body; anger; dizziness; drowsiness; fear; headache; irritability; nausea; nervousness; scalp hair loss; stomach pain; talking, feeling, and acting with excitement; inability to sleep

Pemoline

Brand Name: Cylert

Mechanism of Action: Pemoline has pharmacological activity similar to that of other known central nervous system stimulants; however, it has minimal sympathomimetic effects. Studies indicate that pemoline may act in animals through dopaminergic mechanisms; the exact mechanism and site of action of the drug in humans is not known.

Side Effects:

- More common: Loss of appetite; trouble in sleeping; weight loss
- Less common: dizziness; drowsiness; headache; increased irritability; mental depression;

stomachache

Warnings: Pemoline can cause hepatic failure. This is a rare, but life-threatening situation, and the FDA has discouraged the use of pemoline as a first-line agent for ADHD for this reason.

Non-Stimulant Medications

The following is a summary of some of the non-stimulant medications used for ADHD:

Atomoxetine

Brand Name: Strattera

Mechanism of Action: norepinephrine reuptake inhibitor

Side Effects:

- More common: acid or sour stomach; belching; bleeding between periods; change in amount of bleeding during periods; change in pattern of monthly periods; cough ; decreased appetite; decreased interest in sexual intercourse; decrease in frequency of urination; decrease in urine volume; difficulty having a bowel movement (stool); difficulty in passing urine [dribbling]; dizziness; dry mouth; fever; headache; heartburn; heavy bleeding; inability to have or keep an erection; indigestion; irritability; loss in sexual ability, desire, drive, or performance; nausea; painful urination; pain or tenderness around eyes and cheekbones; shortness of breath or troubled breathing; sleepiness or unusual drowsiness; sleeplessness; stomach discomfort, upset, cramps, or pain; stuffy or runny nose; tightness of chest or wheezing; trouble sleeping; unable to sleep; unusual drowsiness, dullness, tiredness, weakness or feeling of sluggishness; unusual stopping of menstrual bleeding; unusual tiredness or weakness; vomiting
- Less common: hives or welts; irregular heartbeat; itching; large, hive-like swelling on face, eyelids, lips, tongue, throat, hands, legs, feet, or sex organs; redness of skin; skin rash; abnormal dreams; abnormal orgasm; back pain; blistering, crusting, irritation, itching, or reddening of skin; bloated, full feeling; burning, crawling, itching, numbness, prickling, "pins and needles" or tingling feelings; change in hearing; change or problem with discharge of semen; chills; cold sweats; confusion; cough; cracked, dry, scaly skin; crying; decreased weight; diarrhea; difficulty in moving; dizziness, faintness, or lightheadedness when getting up from lying or sitting position; ear drainage; earache or pain in ear; excess air or gas in stomach or intestines; feeling of warmth redness of the face, neck, arms and occasionally, upper chest; feeling unusually cold; frequent urination; general feeling of discomfort or illness; groin pain; increased or sudden sweating; joint pain; loss of appetite; mood swings; muscle aches, cramping, pains, or stiffness; pain or burning with urination; passing gas; shivering; sinus headache; sleep disorder; swelling of skin; swollen joints; swollen, tender prostate

Warnings: Atomoxetine is associated with increased incidence of suicidal thoughts in children and adolescents. The FDA recommends careful monitoring of any psychological symptoms.

Bupropin

Brand Name: Wellbutrin

Mechanism of Action: Bupropin is an antidepressant of the aminoketone class. It is chemically unrelated to tricyclic, tetracyclic, selective serotonin re-uptake inhibitor, or other known antidepressant

agents. Its exact mechanism of action is unknown, but it is a weak inhibitor of the neuronal uptake of norepinephrine and dopamine.

Side Effects:

- More common: agitation; anxiety; abdominal pain; constipation; decrease in appetite; dizziness; dryness of mouth; increased sweating; nausea or vomiting; trembling or shaking; trouble in sleeping; weight loss (unusual)
- Less common: buzzing or ringing in ears; headache (severe); skin rash, hives, or itching; blurred vision; change in sense of taste; drowsiness; feeling of fast or irregular heartbeat; frequent need to urinate; muscle pain; sore throat; unusual feeling of well-being

Venlafaxine

Brand Name: Effexor

Mechanism of Action: strong inhibition of reuptake of serotonin and norepinephrine, weak inhibition of dopamine

Side Effects:

- More common: changes in vision, such as blurred vision; headache; high blood pressure; abnormal dreams; anxiety or nervousness; chills; constipation; decrease in sexual desire or ability; diarrhea; dizziness; drowsiness; dryness of mouth; heartburn; increased sweating; loss of appetite; nausea; stuffy or runny nose; stomach pain or gas; tingling, burning, or prickly sensations; trembling or shaking; trouble in sleeping; unusual tiredness or weakness; vomiting; weight loss
- Less common: chest pain; fast or irregular heartbeat; mood or mental changes; ringing or buzzing in ears; change in sense of taste; muscle tension; yawning

Non-Medication Treatments

Other, non-medication treatments that are part of the conventional treatment protocol for ADHD are as follows:

- **Psychotherapy** can help people like and accept themselves despite their disorder and deal with related emotional issues.
- **Behavior therapy** can help people develop more effective ways to deal with immediate issues.
- **Social skills training** can help people learn new behaviors.
- **Parenting skills training** can help the parents of children with ADHD learn techniques for managing their child's behavior
- **Education and professional coaching** can help adults with ADHD find ways to emphasize their strengths and strategies to deal with their weaknesses.

Controversies

ADHD is a condition that had generated much controversy. Some people still insist that it does not even exist, while others question its conventional understanding. It would be impossible for me to summarize all the controversies related to ADHD here. However, here are some of what I think are the

most relevant criticisms of the mainstream view:

Criticisms of Classification and Diagnostic Criteria

The diagnostic criteria for ADHD have been widely criticized for being overly subjective and arbitrary. It is not clear why six symptoms must be present for a diagnosis, rather than five or seven. This seems to be a purely arbitrary dividing line. Rather than looking at ADHD as condition that one either has or does not have (like pregnancy), it probably makes much more sense to look at it as part of a continuous spectrum of varying neurological functioning, at which someone with no symptoms of ADHD is on one end and someone with every symptom would be on the other. There is evidence that people do in fact fall at every point along this spectrum without any particular clustering at certain points. There definitely are people with “ADHD tendencies” who would not qualify as having full-blown ADHD.

Another criticism is that the diagnosis is based on the severity symptoms, which is rated entirely subjectively, often by individuals like teachers, with no formal training in making a psychiatric diagnosis. Often, this is based on questionnaires that ask people to rate symptoms on a numerical scale, such as zero to three. However, there are no objective criteria given that would give any insight into how severe a behavior would have to be to qualify, for example, as a “two” rather than a “three.” Those answering the questionnaires are left to wonder where the dividing line between “very squirmy” and “somewhat squirmy” is supposed to be. As Aviva and Tracy Romm put this in their book *ADHD Alternatives*, how many squirms are too many?²³ The criteria for diagnosis would not seem to be very solid, as they are based on the subjective perceptions of teachers, parents, and other laypersons.

Yet another criticism is that this set of diagnostic criteria is merely an arbitrary collection of symptoms without much in common, which may have entirely different causes. This criticism questions whether the inattentive and hyperactive symptoms of ADHD truly have a common cause, and whether it makes sense to group them together in one disorder with three different subtypes. It may make more sense to view the inattentive and hyperactive symptoms as two different syndromes with a possible overlay, rather than the result of a single cause. Again, the way this is presently defined seems arbitrary.

Pathology or Variant?

Another criticism of the conventional understanding of ADHD is that it does not meet the criteria of a pathology or a disorder, and is better understood as simply a neuropsychological variant. From an evolutionary frame of reference, it is not at all clear that the set of tendencies described as ADHD are abnormal or maladaptive. One would expect natural selection to eliminate most of the genes responsible for a condition that lead to significant impairment and had no counterbalancing advantages. One would expect the incidence of to be somewhere around 0.5 percent of the population. ADHD, however, has an incidence of somewhere between 3 to 5 percent, by low estimates, and 10 percent, by high estimates, a figure out of line for a genetic abnormality.

One theory for the persistence of the ADHD phenotype is that these symptoms may represent biologically based traits that served people in prehistoric environment. In the dangerous, food-scarce evolutionary environment, hyperactivity would have fostered effective exploration of potential threats

and opportunities. Rapidly shifting attention and impulsive responses would have aided in locating threats and defending against them.²⁴

A more complex theory attempts to explain why ADHD-like traits only occur in a minority of the population in every geographic location where they are observed. If those with ADHD-like traits were simply better adapted to the evolutionary environment, this theory holds, natural selection would select for such traits, eventually one would expect to see them present in nearly the entire population. The simple theory that these are adaptive traits does not explain why they always occur in a minority of the population.

An alternate explanation is that although these traits are individually impairing, and would be selected against on the individual level, it nonetheless benefited groups of humans in the evolutionary environment to have individuals with a wide variation of neurological types, including those with ADHD tendencies. In this theory, such traits are the result of group selection: although within a group, individuals with such traits would be at a disadvantage, groups that had a minority of individuals with those traits would be at an advantage. Therefore, groups with ADHD-like individuals would persist.

One of the ideas behind this theory is group exploration activities, such as foraging for food, were characterized by risk-taking, in which the costs were borne mostly by individuals, and information-sharing, in which the benefits accrued to the group. In order for such activities to succeed, there needed to be some sort of motivating factor that compelled people to take individually risky actions with group payoffs. ADHD-like tendencies could be seen as such a motivating factor. The ADHD type of person is compelled to risk-taking, novelty-seeking behavior. Such individuals might have been extremely useful to groups foraging for new food sources in the prehistoric environment, even if they occasionally engaged in risks that were costly on an individual level.²⁵

Based on this theory, the difficulties that people with ADHD have coping with modern life are not simply the result of our modern environment. They are, in fact, real difficulties, based on differences in cognitive functioning. However, simply medicating away these tendencies in order to allow people to function better would be very harmful to society as a whole. It might get rid of some of our most creative and innovative thinkers. A better approach would be for society simply to provide support such individuals, not expecting them necessarily to function as highly in all areas as everyone else, while at the same time valuing their unique contributions in terms of innovation and exploration.

Natural Treatment

The natural treatment for ADHD centers around treating the person as a whole, rather than the pathology. This approach is especially suited for a nebulous neuropsychological syndrome like ADHD, where there are probably as many different underlying causes as there are individual symptom pictures. Compared to the conventional medical treatment, which centers around small handful of different medications (mostly stimulants), the natural approach is far less one-size-fits-all and offers a wide array of different options. There are nearly as many different herbs available as there individual symptom pictures, and by combining herbs in an individualized formula, it is possible for a treatment to be much more targeted to the individual.

By treating the person as a whole, rather than just focusing on the pathology in a limited sense, a natural treatment for ADHD can be more effective still. A natural approach has much more to offer than the conventional treatment, in terms of supporting general health and well-being, and in helping the individual cope with stress, which can impact attention, focus, and hyperactivity in

important ways. By dealing with individual's mind-body health holistically, rather than dealing with each issue in isolation, a natural approach is able to offer a much more well-integrated and complete treatment.

The very foundation of this holistic approach is proper nourishment. Nutritional factors can play huge role in ADHD, and changes in diet alone can make much bigger difference than any other intervention. Herbs should be viewed as a secondary treatment that build on top of this foundation. Stress, lifestyle factors, and a sleep can all be important as well.

In addition to dietary changes and herbs, there are some other modalities of treatment that can be useful as well. There are many nutritional supplements that can have a positive impact on ADHD symptoms. Flower essences may help deal with emotional factors that may impact attention and hyperactivity. Some practitioners of natural medicine, like Jane Oelke, ND swear by homeopathic treatments for ADHD, as well, but this is beyond the scope of this paper, and I will not discuss it further here.²⁶

It is also important to point out that the distinction between conventional and natural treatments is not an either-or proposition. Natural treatments do not necessarily need to be used as an alternative to the conventional treatment to be effective. They will still do some good when used as a complementary therapy, in conjunction with medication.

Addressing the Root Causes

An effective natural treatment for ADHD depends on properly identifying the causes of the problem. Aside from genetic variations in neuropsychological functioning, there several other possibilities, including a wide array of nutritional issues, the possibility of toxic exposure, possible brain injuries, and factors related to the social environment. All of these possibilities need to be considered, and those issues identified need to be dealt with appropriately. Other conditions that can present symptoms similar to those of ADHD need to be ruled out as well.

As opposed to the conventional treatment approach, which is primarily concerned with a reduction in symptoms, the natural approach seeks to address these issues on the deepest level possible – preferably at the root causes. Because of this, identifying causes of the symptoms takes on additional importance in a natural approach.

While conventional treatments may amount to mere “health maintenance” that must continue for the rest of the patient's life, by addressing issues on a deeper level, the natural approach is able to create more fundamental improvements. By addressing nutritional issues, it is possible to remove some of the actual biochemical deficits that were causing ADHD symptoms, returning the body to a proper state of functioning with no side effects. In addition, through the long-term use of tonifying herbs, such as adaptogens, it is possible to create lasting improvements in ADHD symptoms that persist even when the herbal treatments are discontinued.

Dealing with nutritional issues is fairly straightforward. Any deficits or excesses in the diet need to be identified and dealt with. Food sensitivities and allergies need to be identified, and problem foods need to be removed from the diet. Toxic exposure can be identified through lab tests for things like lead, and if detected, then the environmental source of exposure needs to be dealt with. Brain injuries can usually be identified from past medical history. An approach for that would probably involve nervous system tonics, such as St. John's Wort (*Hypericum perforatum*), but is beyond the scope of this paper.

A mismatch between genetics and our present environment can be a bit of a trickier issue to deal with at the root level – there is no natural way to change somebody's genetics. Arguably, the best way to deal with this would be to change society and the way it treats people with ADHD-like tendencies, but a change of social setting may not be a realistic option on the individual level. It can be debated whether or not ADHD is pathological or maladaptive from an evolutionary standpoint, and whether the problem truly lies with people's genes or their present environment – regardless ADHD symptoms can make it difficult to cope with living in today's society, and can lead to a great deal of stress.

As holistic health practitioners, it is not our role to judge whether or not people's brains ought to be functioning the way they are – rather it is our responsibility to help people cope with the problems that they are having and help them achieve greater overall mind-body health, regardless of the causes. Herbs can help children and adults achieve greater mental focus, calm down hyperactivity, and reduce stress. Focusing on nutrition can ensure that people's diet does not negatively interact with their genetic tendencies and make their symptoms even worse than they would otherwise be.

Nutritional Treatment

The nutritional treatment of ADHD is the cornerstone of a natural treatment approach, and is by itself the single most effective intervention available. An analysis by Dr. Humphrey Osmond of a study by Dr. Bernard Rimland found that vitamin supplementation had a relative efficacy ratio approximately 18 times better than stimulant drugs. (The “relative efficacy ratio” is the number helped by a given treatment divided by the number worsened.)²⁷ In study by Abram Hoffer, a pioneer of orthomolecular medicine, large amounts of Vitamin C (3 g), and Vitamin B₃ (1.5 g or more) significantly improved the behavior of 32 out of 33 children with ADHD.²⁸

Even without supplements, improving diet can lead to significant improvements in behavior. This was confirmed by in a study by Dr. Stephen Schoenthaler at the Department of Social and Criminal Justice at California State University on the link between poor diet, nutrient status, and bad behavior. In several placebo-controlled trials, in different states, involving over a thousand long-term young offenders, improvements in their diet were found to improve their behavior by 40 to 60 percent. Blood tests showed that approximately one-third of the participants had low levels of vitamins and minerals before the trial, and those whose levels had become normal by the end had a 70 to 90 percent improvement in behavior.²⁹

The foundation of the nutritional treatment for ADHD involves improving diet. There are some supplements that may be useful, but you should always think about trying a whole foods approach first. It is much better to start with a good diet, and then to address any additional needs that may be present, than to start with poor diet and to try to address all of the resulting deficiencies.

Diet for ADHD

One of the most important things in a diet for ADHD is to eat whole, natural, unprocessed foods, free artificial additives. This is important because of the sensitivity of many ADHD sufferers to chemical food additives. It is also important to identify food allergies and sensitivities and to eliminate these problematic foods. This can be done through an elimination diet, in which potentially allergenic

foods are eliminated for two weeks, and then carefully reintroduced, one at a time. These foods include dairy products, gluten-containing grains, legumes (including peanuts and soy), citrus, yeast, and eggs. Because this is not conclusive, it is also good to have an IgG blood test. (Most food intolerances are IgG mediated, but some are also IgE mediated, so it is good to have an IgE test as well.) Up to 90 percent of hyperactive children benefit from eliminating foods that contain artificial colors, flavors, and preservatives, processed and manufactured foods, and problematic foods identified by an exclusion diet or blood test.³⁰

Because blood sugar issues also have a big impact on ADHD, it is also important to eat a diet with a low glycemic load (those with ADHD benefit from the same diet that helps diabetics and others with insulin resistance issues). The glycemic load of a meal is the total grams of carbohydrates times the glycemic index, a measure of how quickly each gram of carbohydrates raises blood sugar levels. The glycemic index differentiates between simple sugars (which raise blood sugar quickly), complex starches (which do so more slowly) and indigestible fiber (which do not raise blood sugar levels at all, and actually slow down the digestion of other carbohydrates).

The glycemic index is an older way of looking at blood sugar issues, and it is still common advice to eat more complex and fewer simple carbohydrates. However, this advice is overly simplistic. The type of carbohydrates eaten does not matter so much as the total impact on blood sugar levels. Eating a high-carbohydrate diet is still going to raise blood sugar levels a lot, even if the glycemic index of those carbohydrates is fairly low. Because of this, the glycemic load was devised as a more accurate measure of the potential of a food to raise blood sugar levels. The higher the glycemic load of a serving of food, the easier it is to eat enough of that food to raise blood sugar levels to problematic levels.

Both the glycemic load of individual meals and the total daily glycemic load are important. Keeping the glycemic load of individual meals low helps keep blood sugar levels stable. However, keeping the overall daily glycemic load low is also important, because it keeps insulin resistance down (and prevents hyperinsulinemia).

It is possible to look up the glycemic load of a serving of many of the most commonly eaten foods, but luckily there is an easier method than this. There are some simple rules that you can follow to keep the glycemic load of your diet low. The very most important thing you can do is to keep both refined sugar and natural sweeteners to a minimum (except for stevia). Avoiding refined flour and starches can also make a big difference. Another good rule is to eat more non-starchy vegetables and fruits, and to eat fewer grains and tubers.

Both grains and potatoes were not part of the original evolutionary human diet and contain much more concentrated stores of carbohydrates than what was typically available to prehistoric humans. Consequently, these foods have the potential to raise blood sugar levels beyond what some people's bodies are genetically equipped to deal with, and they can be problematic. It is a misconception that whole grains are healthy foods for people with blood sugar problems. Although they are certainly better than refined sugars and flours, they are marginal foods at best, compared to fruits and vegetables. Some people cannot handle any amount of grains and would benefit from eliminating them from their diet entirely.

It is also important to balance carbohydrates with fats and proteins. People with ADHD benefit from a low-carbohydrate, high-protein diet. It is especially important to eat a high-protein breakfast. This helps balance blood sugar levels and prevent carbohydrate cravings throughout the day. The best form of protein is animal protein from clean, natural sources, such as wild cold-water fish, 100% grass-

fed meat, and organic, free-range poultry and eggs. This should be complemented with good fats from natural sources (avoid hydrogenated oils and trans fats).

It is especially important to get enough essential fatty acids, because those with ADHD may have an increased need for them. These include the omega-3 fatty acids DHA and EPA, and the omega-6 fatty acid arachidonic acid. DHA and EPA are found in wild, cold water fish (e.g. tuna, salmon, herring). Salmon and sardines are particularly good sources. Arachidonic acid is found in high quantities in white meat and eggs. (DHA and EPA are not present in any commonly eaten plant foods, so strict vegetarians will have to supplement. The body can convert between these two fatty acids fairly easily, so a DHA supplement should be sufficient.)

It may be desirable to include foods rich in the amino acid tryptophan, which has calming effects.³¹ Some foods high in tryptophan include turkey, tuna, wheat germ, yogurt, and eggs.

Feingold Diet

An additional dietary approach to ADHD, which may prove useful is the Feingold Diet. This diet eliminates natural sources of salicylates, in addition to artificial chemical food additives. The list of foods prohibited is so long, however, that this should only be considered as a second resort, and should be carried out with the aid of a nutritionist. Although many people with ADHD are sensitive to salicylates, which inhibit the conversion of essential fatty acids into prostaglandins used by the brain, eliminating the inhibitor is only one approach to dealing with this. Increasing the precursors, by increasing essential fatty acid intake may also produce satisfactory results. Nonetheless, this does not work, the Feingold diet is worth considering.

Some of the foods containing natural salicylates, which are prohibited on this diet are the following: apples, almonds, apricots, cherries (canned), chiles (red), coffee, cola drinks, cucumbers, currants, black, curry powder, dates, dill, dried fruits, endives, fruit juices, grapes, honey, oranges, oregano, paprika, pineapple, plums, prunes, radishes, raisins, raspberries, rosemary, strawberries, thyme, tomato sauce, and zucchini.

Supplements

The following supplements may be beneficial for ADHD:

Most important Supplements:

These are some of the very top supplements for ADHD:

Essential Fatty Acid Supplements

If wild cold-water fish is not included in the diet, supplementing DHA is important. Fish oil is the best way to do this.

DMAE

Other than essential fatty acids, this is probably the most important supplement to consider, and if you had to choose one single supplement, this one might be the best. DMAE boosts the production of dopamine. It aids in concentration by improving nerve impulse transmission in the brain, and may also produce antidepressant effects.³²

Some authors caution that this should only be used for adults.³³ However, others recommend it for children. A children's dose is 100 to 500 mg daily.³⁴

Other supplements:

These supplements may also prove useful:

Vitamins:

Vitamin C

Vitamin C is an anti-stress vitamin. The dosage for adults and children over 12 years old is 1000 mg, three times daily.³⁵

Inositol

Inositol is a B-complex vitamin. The dosage is 20 mg per pound of body weight.³⁶

Minerals:

Chromium Polynicotinate

This supplement helps regulate blood sugar levels. The dosage is 4 mcg per pound of body weight.³⁷

Amino acids:

L-Cysteine

Use this if hair analysis reveals high levels of metals. Take on an empty stomach with water or juice. Take with 50 mg Vitamin B₆ and 100 mg Vitamin C for better absorption.

L-Glutamine

Dosage: 10 mg per pound of body weight.³⁸

Phenylalanine

Dosage: 10 mg per pound of body weight. Phenylalanine is contraindicated in in

phenylketonuria³⁹

Taurine

Taurine has calming effects. The dosage is 500 mg, for children,⁴⁰ or 50 mg per pound of body weight.⁴¹

5-Hydroxy-Tryptophan

This supplement is only available by prescription in the United States. The dosage is 2-3 mg per pound of body weight.⁴²

N-Acetyl-Tyrosine

This is used by herbalist and nutritionist Donald Yance as part of his protocol for ADHD. It is a precursor to dopamine and norepinephrine. The dose is 6-8 mg per pound of body weight.⁴³

Lipid nutrients:

Evening Primrose Oil

Evening primrose oil reduces inflammation and oxidative stress. A children's dose is 500 mg daily.

Phosphatidylserine

This is a phospholipid nutrient found in fish, green leafy vegetables, soybeans, and rice. It is essential for the normal functioning of neuronal cell membranes. It may aid in balancing neurotransmitters in the brain, and may alleviate depression.⁴⁴ Phosphatidylserine improves behavior problems in children. Results take up to four months. The dosage is 100 mg daily for young children, and 300 mg daily for children over 50 pounds,⁴⁵ or alternately 2-3 mg per pound of body weight.⁴⁶

Neurotransmitters:

Acetylcholine

Acetylcholine can improve memory and attention.⁴⁷

GABA

GABA improves behavior problems in children. The children's dosage is 100 mg daily,⁴⁸ or 6-8 mg per pound of body weight.⁴⁹

Miscellaneous supplements:

NADH

NADH improves behavior problems in children. The dosage is 2.5 mg daily.⁵⁰

Octacosanol

Octacosanol is derived from wheat germ and associated with vitamin E. It was not specified how this may be helpful. The dosage is 100 mcg/lb. of body weight.⁵¹

Herbal Treatments

Few scientific studies have been done on the use of herbs for ADHD. However, there are many herbs with a traditional history of use for attention, focus, mental clarity, memory, hyperactivity, overexcitement, and stress. Any of these herbs would be a good potential choice for ADHD. In clinical settings, practitioners have had achieved good results with these herbs. In addition, those few studies that have been done produced promising results.

Herbal Actions

Few authors who write about herbal treatments for ADHD seem to have systematically divided these herbs into categories with different actions. However, the vast majority of the herbs for ADHD seem fall into a few different categories, suggesting a simple protocol. Most of these herbs are *adaptogens*, *nootropics*, and *nervines*.

It is not surprising that these are also the three classes of herbs discussed in David Winston's book, *Adaptogens: Herbs for Strength, Stamina, and Stress Relief*. These three classes of herbs are not only useful in conjunction with one another for ADHD, but offer a wide range of benefits for stress relief and general mental/physical health. David Winston's book is a good reference for all three classes of herbs, and any of the herbs listed in his book would be good choices for ADHD.

Adaptogens modulate stress hormones and reduce the impact of stress on the body. They may improve ADHD symptoms through this mechanism. It is also possible that they may modulate neurotransmitters in the central nervous in ways that we do not presently understand as well. The adaptogens that seem to be the most useful for ADHD are ones that also improve energy and focus, such as American ginseng (*Panax quinquefolium*), Rhodiola (*Rhodiola rosea*), and ashwaganda (*Withania somnifera*).

Nootropics are herbs that improve cognitive function. They may impact attention, focus, concentration, learning, memory, and mental acuity. These herbs may help ADHD by improving mental functioning. One of the prime herbs in this category is *Ginkgo biloba*. Some other examples of herbs with this action are rosemary (*Rosmarinus officinale*), gotu kola (*Centella asiatica*), and brahmi (*Bacopa monnieri*).

Nervines calm the nervous system, reducing overexcitation, which may be helpful when hyperactivity is present. Since these herbs have sedating effects, it might seem like this would

counteract the effects of nootropic herbs that enhance mental performance. However, this is often not the case. Although it may seem paradoxical, nervines may work even better when they are combined with herbs that stimulate mental functioning, like gotu kola (*Centella asiatica*). Instead of simply counteracting one another, these two classes of herbs may produce the synergistic result of increased focus without hyperactivity. It is quite possible that these two classes of herbs may be working by entirely different mechanisms.

A few of the herbs used fall into other categories, suggesting some secondary actions that may be useful. These are as follows:

Anti-inflammatories: Inflammation may be important because of the link between allergies and ADHD. Anti-inflammatory herbs will reduce allergy symptoms. Some anti-inflammatories work in a different way, crossing the blood-brain barrier, and protecting the central nervous system from oxidative stress and toxins. These include grape seed extract (*Vitis vinifera*) and pine bark extract (*Pinus* spp.)⁵²

Stimulants: Donald Yance, an herbalist and nutritionist based in Ashland, Oregon, uses green tea in his practice for ADHD. He finds that people with ADHD need a little bit of caffeine, in addition to adaptogenic herbs.⁵³ This works in a similar way to the conventional treatment, but is milder, with less potential to push people into an outright stress response (green tea has mild adaptogenic effects).

A traditional Italian treatment for fidgety children who could not sit still was a shot of espresso. This would probably work as well, but it also has the same drawbacks as the conventional stimulant treatment, plus some of its own. The only advantage might be all the additional antioxidants in the coffee and the fact that this comes from natural sources with a lower environmental impact. It is probably not the best idea to rely too much on strong stimulants, except maybe as a last resort (when nothing else works, and the damage done to someone's life by their ADHD symptoms is severe enough that the benefit outweighs the costs). Whenever possible, it is better to cover all other bases first and use as small a dose of a dose of stimulants as possible, in order to achieve the desired effects.

Scientific Studies

One of the few clinical studies on herbal treatments for ADHD was carried out at the Oceanside Functional Medicine Research Institute in Nanaimo, BC, Canada. In a pilot study, 36 children between the ages of 3 to 17 who fit the diagnostic criteria for ADHD were given a proprietary extract, AD-FX, containing American ginseng (*Panax quinquefolium*), 200 mg, and *Ginkgo biloba*, 50 mg, twice a day, for four weeks. (The American species of ginseng [*Panax* spp.] was chosen because it contains a higher concentration of a particular ginsenoside suspected of having a positive effect on cognitive performance.) At the end of the trial, there was a significant improvement in ADHD symptoms, including social problems, hyperactivity, and impulsivity in a majority of the children.⁵⁴

Another study, using the herb *Rhodiola rosea* showed therapeutic effects in ADHD patients exhibiting mental and physical fatigue, lack of concentration and hyperactivity. There was a decrease in symptoms within three weeks, with results so successful that the dosage was cut in half.⁵⁵

Energetic Understanding

Looking at the energetic understanding of ADHD in traditional systems of medicine can lead to additional insights about which treatments may prove helpful. In the Ayurvedic system of medicine,

problems with attention and hyperactivity are divided as follows: ADHD, characterized by disordered nervous energy is a Vata disorder. Attention dysfunction with the additional problem of excess/disordered energy or inflammation is a Vatta-Pitta disorder. Sometimes poor mental performance is also related to Kapha, with signs of poor digestion (dampness), sluggishness, and perhaps a greasy coating on the tongue.⁵⁶

In Traditional Chinese Medicine, problems with attention can be linked a deficiency in Yin. Herbs that help this nourish the Yin energy, especially the kidney Yin, which is linked to the brain. Some examples of herbs that nourish the Yin energy are Lycium berries (*Lycium barbarum/L. chinense*) and Rehmannia rhizome (*Rehmannia glutinosa*).⁵⁷

Specific Herbs for ADHD

Adaptogens

Shilajit (*Asphaltum bitumen*)

Other names: shilajatu, mumie

Part used: pitch

This is a mysterious tar-like substance that oozes out of hot rocks in the Himalayas. It has adaptogenic effects⁵⁸ and improves memory and concentration.⁵⁹

Eleuthero (*Eleutherococcus senticosus*)

Part used: root

David Winston uses this herb for stressed out Type A people who don't get enough sleep and for ADHD.⁶⁰

Lycium (*Lycium barbarum/L. chinense*)

Part used: berry

This berry is an adaptogen and nourishes the Yin energy, which is considered useful for the brain.⁶¹ It also a tasty, and highly nutritious food, loaded with antioxidants.

Asian ginseng (*Panax ginseng*)

Part used: root

Ginseng has a long history of traditional use for boosting energy, and may be useful for increasing mental focus. It also has anti-anxiolytic effects.⁶² Its ability to increase energy and focus, while simultaneously calming is one of the hallmarks of a good treatment for ADHD.

American ginseng (*Panax quinquefolium*)

Part Used: root

This is one of the prime adaptogenic herbs for ADHD. Its effectiveness in improving ADHD symptoms has been scientifically validated.⁶³ Out of all the *Panax* (ginseng) species, American ginseng has the highest concentration of the ginsenosides suspected to improve cognitive performance.⁶⁴

Like its Asian cousin (*Panax ginseng*), American ginseng has a long history of traditional use for boosting energy levels. Like Asian ginseng, it also has anti-anxiolytic effects,⁶⁵ and can boost energy and focus, while simultaneously calming, which may be one of the keys to why it works so well.

Rhodiola (*Rhodiola rosea*)

Part used: root

This is also a prime adaptogenic herb for ADHD, used for centuries in Russia. It is reported to have influenced focus and learning in ADHD patients. Rhodiola's effectiveness in treating ADHD has been scientifically validated as well. One of its active constituents, salidroside has ability to regulate norepinephrine and dopamine.⁶⁶

Ashwaganda (*Withania somnifera*)

Part used: root

This is a calming adaptogen that also improves focus. It has agonist activity at GABA receptors,⁶⁷ suggesting that it may be useful in reducing hyperactivity.

Nootropics

Acorus (*Acorus gramineus*)

Other names: shi chang pu

Part used: rhizome

Ayurvedic doctors use this herb as brain tonic and for memory problems.⁶⁸ It also has calming effects, suggesting that it may be very useful for hyperactive-type ADHD (see nervines).

Bacopa (*Bacopa monnieri*)

Other names: brahmi

Part used: herb

This herb improves attention and retention of new knowledge.⁶⁹ It improves memory and concentration,⁷⁰ shortens learning time, and especially improves memory in elderly.⁷¹ Bacopa also has nervine effects, making it very useful for hyperactive-type ADHD (see nervines).

Gotu Kola (*Centella asiatica*)

Part used: herb

Gotu kola improves memory and concentration⁷² and is excellent for mental fatigue.⁷³

Ginkgo (*Ginkgo biloba*)

Part used: leaf

Ginkgo is one of the very best nootropic herbs for ADHD. Its effectiveness has been scientifically validated,⁷⁴ and it is one of the best herbs for both adults⁷⁵ and children.⁷⁶ Ginkgo improves focus, memory, cognition, knowledge retention, and perception. It boosts blood flow to the brain and increases the brain's ability to utilize oxygen. It also protects the brain against toxins.⁷⁷

Basil (*Ocimum basilicum*)

Part used: herb

This kitchen spice has a long history of use in memory difficulties (also see Rosemary). It is mildly sedative.

Rosemary (*Rosmarinus officinalis*)

Part used: herb

Like Basil, this is another kitchen spice that has a long history of use in memory difficulties. It is mildly stimulating.

Guduchi (*Tinospora cordifolia*)

Part used: stem

This herb improves memory and concentration.⁷⁸

Valerian (*Valeriana officinalis*)

Part used: root

Studies have shown that Valerian produced a marked increase in concentration and abilities and energy levels.⁷⁹ Valerian is also a nervine, making it a versatile herb for hyperactive-type ADHD (see nervines).

Lesser Periwinkle (*Vinca minor*)

Part used: leaves, aerial parts; in some cases, whole plant

This is one of the prime herbs for children with ADHD.⁸⁰ It has a history of use for dementia caused by insufficient blood flow to the brain. It also has sedative effects, making it a versatile herb for hyperactive-type ADHD (see nervines).

Nervines

Acorus (*Acorus gramineus*)

Other names: shi chang pu

Part used: rhizome

In Traditional Chinese medicine, this herb is used to calm the spirit.⁸¹ It also has effects that improve mental functioning, suggesting that it may be very useful for ADHD (see nootropics).

Wild Oats (*Avena sativa*)

Part used: fresh milky seeds

Wild oats are a nervous system nutritive, and tonic for mental stress, nervousness, overwork, exhaustion, weakness. They improve mental concentration and focus. They are excellent for weaning off medications for ADHD, such as methylphenidate (Ritalin), and can help reduce withdrawal symptoms.⁸²

Bacopa (*Bacopa monnieri*)

Other names: brahmi

Part used: herb

Bacopa is a sedative and improves anxiety and hyperactivity.⁸³ It also improves memory and concentration, making it very useful for ADHD (see nootropics).

Hawthorn (*Crataegus* spp.)

Part used: berries/flowers

Hawthorn relieves acting out, anxiety and unrest in children. It also stops inflammation caused by allergies.⁸⁴

California Poppy (*Eschscholzia californica*)

Part used: whole plant

California poppy is a gentle sedative, relieves psychological and emotional disturbances in children. It soothes and balances an overactive nervous system and reduces anxiety and tension in overactive states. It also helps with sleep problems – difficulty falling asleep, or frequent, regular waking.

Longan (*Euphoria longana*)

Part used: berry

Longan berries are a gently sedating remedy for nervousness and anxiety.⁸⁵

Hops (*Humulus lupulus*)

Part used: female flower bracts and pollen

Hops are indicated for nervous tension, excitability, restlessness, irritability. They are fast acting and calm and improve mood, but should not be used in depression.⁸⁶

St. John's Wort (*Hypericum perforatum*)

Part used: tops

St. John's wort is a nervine tonic, anti-depressant, and prime herb for ADHD. It regulates mood and attention is a good for hyperactive children.⁸⁷ There is evidence that, in addition to inhibiting the reuptake of serotonin, St. John's wort inhibits the reuptake of norepinephrine and dopamine with equal affinity. It also has an affinity for GABA receptors.⁸⁸ Many people have found St. John's wort both to be calming and to increase their attentive capacity.

Wild Lettuce (*Lactuca virosa*)

Part used: dried leaf

Wild lettuce induces sleep and lessens the excitability of nerves and nerve centers.⁸⁹

Catnip (*Nepeta cataria*)

Part used: leaf

Catnip relieves anxiety, restlessness, tension, stress, and hyperactivity. It balances mood swings or hysteria.⁹⁰

Chamomile (*Matricaria recutita*)

Part used: flower

Chamomile relieves allergies, inflammation, and insomnia.⁹¹

Lemon Balm (*Melissa officinalis*)

Part used: herb

Lemon Balm is a gentle, safe calming children's herb for anxiety and depression. It relaxes nervous system, and eases agitation.⁹² In combination with valerian (*Valeriana officinalis*), it hastens sleep, and relaxes muscle tension.⁹³

Passion flower (*Passiflora incarnata*)

Part used: herb

Passionflower is a calming sedative that causes less drowsiness than drugs.

Kava (*Piper methysticum*)

Part used: root

Kava is indicated for aggressive and agitated children.⁹⁴

Skullcap (*Scutellaria lateriflora*)

Part used: aerial parts/whole plant

Skullcap is a prime herb for children with ADHD. It is indicated for aggressive and agitated children. It helps reduce anxiety, restlessness, crying spells, irritability, and nervousness. It is a useful daytime sedative that works without drowsiness. It also prevents allergic reactions.⁹⁵

Wood Betony (*Stachys betonica*)

Part used: herb

This is a prime herb children with ADHD. It is calming, and is recommended for anxiety associated with digestive discomforts, headaches, forgetfulness, and lethargy.⁹⁶

Valerian (*Valeriana officinalis*)

Part used: root

Valerian is a relaxant that eases anxiety. It also improves memory and concentration (see nootropics). In combination with Lemon Balm, it hastens sleep, and relaxes muscle tension.⁹⁷

Blue Vervain (*Verbena hastata*)

Part used: herb

This herb seems to calm excessive mind-chatter, and racing thoughts. This would make it a prime herb for ADHD, where lack of focus is an issue. In my experience, this herb also has an interesting synergistic effect with Rhodiola: together the two herbs produce a profound state of calm, focus, and directedness.

Lesser Periwinkle (*Vinca minor*)

Part used: leaves, aerial parts; in some cases, whole plant

This is one of the prime herbs for children with ADHD.⁹⁸ It is a sedative, and also increases, blood flow to the brain, making it a versatile herb for ADHD (see nootropics).

Zizyphus (*Zizyphus spinosa*)

Part used: seed

Zizyphus seed is good for anxiety reduction.⁹⁹

Anti-inflammatories

Many of the herbs listed in the previous sections also have anti-inflammatory actions, and would be good choices. In addition, the following herbal remedies that are specific for ADHD work primarily through their anti-inflammatory action:

Uña de Gato (*Uncaria tomentosa*)

Other names: Cat's Claw

This herb enhances the immune system, acts as an anti-inflammatory, and improves the regulation of the digestive system. It improves intestinal absorption and can reduce the passage of partially digested peptides, fungus, bacteria, and parasites (“leaky gut”), which can trigger the constant activation of the immune system resulting in an inflammatory response. This can manifest as mental symptoms in the case of ADHD.¹⁰⁰

Oligomeric Proanthocyanidins

Found in grape seed (*Vitis vinifera*) extract (GSE) and Pine Bark (*Pinus* spp.) extract (pycogenol), oligomeric proanthocyanidins (OPC's) are bioflavonoids with the most potent antioxidant effects known. They reduce inflammation and oxidative stress and are able to cross blood-brain barrier, protecting the brain against a wide variety of toxins and free radicals.¹⁰¹ OPC's have an antidepressant effect that does not cause emotional changes, hyperactivity or drowsiness,¹⁰² and they also seem to help improve the symptoms of ADHD.

Stimulants

Green Tea (*Camellia sinensis*)

Part used: green leaves

Green tea boosts norepinephrine and dopamine levels, and works in a similar way to the stimulant drugs used in the conventional treatment. According to Donald Yance, people with ADHD need a little bit of caffeine.¹⁰³ However, unlike the drugs, green tea is mildly adaptogenic, and not so stimulating that it will push people into an outright stress response.

Flower Essences

The following flower essences may be useful for emotional issues related to ADHD:¹⁰⁴

- **Chestnut bud:** for repeating the same mistakes.
- **Clematis:** for daydreamers with short attention spans.
- **Gentian:** for those who are discouraged and give up too easily.
- **Larch:** for those lacking confidence.
- **White Chestnut:** for concentration hampered by persistent, unwanted thoughts.
- **Wild Rose:** for those lacking motivation and initiative for no apparent reason.

Lifestyle Considerations

Stress can play a huge role in ADHD, and stress reduction strategies can lead to an improvement in symptoms. Biofeedback can reduce ADHD symptoms for 85% of sufferers. Full-spectrum lighting can improve mood.¹⁰⁵ Spending less time watching television or playing video games can help increase attentive capacity, and spending time in nature seems to help as well.

Example of a Natural Treatment Protocol

Herbalist and nutritionist Donald Yance uses a combination approach for ADHD: For inattentive-type ADHD, he uses adaptogens, N-acetyl-tyrosine, a little bit of green tea, and essential fatty acids (including DHA and EPA). (He says people with ADHD need a little bit of caffeine, which is why he includes the green tea.) With hyperactivity, his protocol is a bit more complicated: Herbs he uses for this include *Bacopa monnieri* (Brahmi), *Centella asiatica* (Gotu Kola), and *Melissa officinalis* (Lemon Balm). He also includes glycine powder. Yance reports good results using this protocol.¹⁰⁶

Conclusion

With rates of diagnosis of ADHD and the use of stimulant medications to treat it on the rise, further explorations into natural treatments for ADHD are badly needed. Natural remedies offer an impressive range of options, and few scientific studies have been done on their use to treat ADHD. Few studies, in particular, have been done on the use of herbal treatments, and more are needed.

More work also needs to be done in the area of developing more complete, and effective natural treatment protocols. Many of the published works on natural treatments for ADHD present a slew of different individual remedies, but very few provide any kind of overarching organization to these lists or any kind of general principles for treatment. My description of the general herbal actions for ADHD was my best attempt to organize this chaos; however this was done very quickly without any kind of clinical experience behind it. With time and experience, I might choose to rethink this. More herbalists need to try out different treatment protocols for ADHD, so that we can have a better idea of what works and what does not.

As we gain a better scientific understanding of ADHD, its biological basis, and its evolutionary context, hopefully we will also be able to come up with better ways of dealing with it as a society, and better treatments for it, when necessary. Hopefully, further scientific studies will give us a better understanding of how some of these herbal treatments work, which ones work, and which ones do not. The current conventional treatment for ADHD with stimulant medications is still a very crude, brute-force way of dealing with things, like the biochemical equivalent of a sledgehammer. Hopefully, in the future, those looking for ways to deal with the problems in life caused by the symptoms of ADHD will have options that are both more respectful towards their uniqueness as individuals and more conducive to their complete mind-body health.

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