

Controversial Treatments for Children With Attention-Deficit/Hyperactivity Disorder

Introduction

In the past decade there has been a tremendous upsurge of scientific and public interest in Attention-Deficit Hyperactivity Disorder. The interest is reflected not only in the number of scientific articles but in the explosion of books for parents and teachers. Great strides have been made in understanding and managing this common childhood disorder. Children with AD/HD who would have gone unrecognized and untreated only a few short years ago are now being helped, often with dramatic, positive results.

It is critical for parents to seek the best in evaluation, as well as the best in treatment. Evaluations that consist of a single checklist or ten minute discussions, will likely run the risk of mis-diagnosis of the disorder or in fact a misunderstanding of co- occurring problems that often present for children with AD/HD. Symptoms of inattention, restlessness, impulsivity, social and academic difficulties, can reflect a variety of childhood disorders. It is essential to obtain a thorough understanding of problems before attempting to intervene, especially since many children with AD/HD also experience co-existing learning and behavior problems. **A good treatment plan follows logically from a thorough evaluation.**

There continues to be many questions in need of answers concerning the developmental course, outcome, and treatment of AD/HD. Although there are a number of effective treatments, they may not be equally effective with all children experiencing AD/HD. In their efforts to seek effective help for their children, parents may become desperate. In their desperation, and confused by misinformation in the marketplace, parents may turn to treatments which claim to be useful but which have not been demonstrated to be truly effective in accordance with standards held by the scientific community. We refer to such treatments as controversial. That is, they are marketed beyond their proven worth.

Unfortunately, most parents, no matter how intelligent or well-educated, do not have the training nor expertise necessary to identify and evaluate relevant scientific findings concerning the effectiveness of various treatment which have not as yet met scientific standards for effectiveness. Some of these treatments merit continued research, others do not. We do not recommend these as proven treatments. We know that parents need to be informed about them because they may be offered as proven and accepted approaches to the treatment of AD/HD, which they are not.

How Are New Treatments Evaluated?

The road by which a particular treatment is shown to be effective can be long and arduous. The process begins with the formulation of a hypothesis or idea. This hypothesis is usually based upon an existing body of knowledge. The second step is the development of a protocol to evaluate the effectiveness of the proposed treatment. The treatment itself and the way in which it will be implemented must be carefully defined. The researcher must also specify the way in which the effectiveness of the treatment will be evaluated. Care must be taken to be certain that the effects of the treatment are not simply due to placebo. It has been well documented in scientific research that people respond to all sorts of ineffective treatments as long as they believe that the treatment has the power to help them. Placebo effects can be more dramatic than most people realize.

The researcher must also take care that all who participate, researchers and research subjects alike, are blind or unaware, whether they receive the active treatment or the placebo. Otherwise the expectancies of either party could influence the findings. Appropriate measurement techniques and statistical tests must be built in so that the entire scientific community can evaluate the findings. Finally, the results must be subjected to the scrutiny of this group, published and substantiated by others attempting to replicate the findings.

Alternative Treatments: Another Path

There is also a second path which some practitioners follow, sometimes in an effort to shortcut the longer, more accepted process. This path, unfortunately, is fraught with many problems. On this path, proposed treatments stem from concepts which are outside of the mainstream of existing knowledge or just along its border. They may be instituted long before there is any research which supports their effectiveness - often after only brief, poorly designed trials involving a small number of subjects. Measurement techniques and means of evaluation are scanty at best and often single case studies are offered as proof of the effectiveness of a treatment. This treatment approach is usually publicized in books or journals which do not require independent review of the material by recognized experts in the field. Often, in fact, the

advocate of a particular treatment publishes the work. **This method of self-publication should raise a warning for consumer parents.** Additionally, although parent support groups have an essential role in the treatment of childhood disorders, parent support groups advocating one and only one treatment for a disorder, unfortunately substitute enthusiasm for careful scientific research.

It is critical for parents to seek the best in evaluation, as well as the best in treatment. Evaluations that consist of a single checklist or ten-minute discussions, will likely run the risk of mis-diagnosis of the disorder or, in fact, a misunderstanding of co-occurring problems that often present for children with AD/HD. Symptoms of inattention, restlessness, impulsivity, and social and academic difficulties, can reflect a variety of childhood disorders. It is essential to obtain a thorough understanding of problems before attempting to intervene, especially since many children with AD/HD also experience co-existing learning and behavior problems. **A good treatment plan follows logically from a thorough evaluation.**

These alternative treatments and interventions commonly claim effectiveness for a broad range of problems. When asked for proof to support these claims, however, proponents are unable to produce more than scanty documentation. Proponents may also claim to have access to knowledge and information not shared by the medical community at large and when their treatments are criticized they may explain this as reflecting a conspiracy against them in a scientific community.

Controversial Treatments for AD/HD

Dietary Intervention

Among the best known dietary interventions, the Feingold Diet has advocated that children sensitive to a variety of foods and food colorings, including preservatives, may develop symptoms of AD/HD as a toxic reaction to these substances. Over the years advocates of these dietary interventions have made dramatic claims. They have stated that additive free diets will improve most if not all children's learning and attention problems. They describe case studies in which children could be removed from drug therapy if their diet was maintained. They also report improvements in school for these children and subsequent deterioration in learning and behavior when the diet is not followed.

Although dietary interventions are popular, few studies have reported success and for most of these, statistical problems abound. The lack of well controlled studies is also true for those who propose a relationship between allergies and behavior or learning problems. Although proponents of these dietary approaches may acknowledge that careful scientific studies are necessary, such studies have not yet been conducted.

A large number of studies, however, have examined the relationship between sugar and AD/HD. However, most of them are difficult to interpret. **A few well-designed studies have found some effects of sugar on behavior but these effects are very small and only a small percentage of children with AD/HD appear vulnerable.**

After careful analysis of the existing evidence, numerous researchers have concluded that there is limited, if any, support for a link between diet and children's learning and behavior. Of course, like all children, we know that children with AD/HD require a healthy, well-balanced diet. **At this time, however, it has not been shown that dietary interventions offer significant help for children with learning and attention problems.**

Megavitamins and Mineral Supplements

The use of high doses of vitamins and minerals, including currently marketed anti-oxidants such as vitamins A and E, pycnogenol and ginkgo biloba are based on the precepts of orthomolecular psychiatry. According to this theory, some people have a genetic abnormality which results in increased requirements for vitamins and minerals. The anti-oxidants are marketed as substances that remove "free radicals" from the blood stream which are hypothesized to cause learning, attention and behavioral problems as well as accelerate aging.

In the early 1970's it was claimed that treating hyperactive and learning disabled children with high doses of vitamins could decrease these problems. Proponents of this theory also claim that learning and behavior difficulties are also due to deficiencies in minerals such as potassium and sodium as well as trace elements such as zinc and copper.

Although vitamins are synonymous with health leading to an intuitive appeal to this approach, there is a lack of scientific evidence to support that these additives exert a significant difference in the lives of children with AD/HD. Although these substances are natural which lends an aura of safety, excessive use of these substances can in fact cause health problems.

Anti-Motion Sickness Medicine

Advocates of this theory believe that AD/HD is caused by problems in the inner ear system. They believe that there is a relationship between AD/HD and problems with coordination and balance. This theoretical relationship is thought to reflect a dysfunction in the inner ear system since this system plays a major role in balance and coordination. To treat AD/HD, a mixed array of medications, including anti-motion sickness medications and several vitamin like substances are recommended. Using these medications, proponents of this approach have claimed a success rate in excess of 90%. Unfortunately, these results are unpublished and not subject to verification.

This theory is not consistent with what is currently known about AD/HD. **There is no body of research that supports a link between the inner ear system and attentional processes.** Anatomically and physiologically there is no reason to believe that the inner ear system is involved in attention and impulse control in other than marginal ways. In the single controlled study of this theory, researchers evaluated the use of anti-motion sickness medication to treat developmental reading disorders. The results failed to support the theory. This approach to treating AD/HD is inconsistent with current knowledge and is not supported by research findings.

Candida Yeast

Candida albicans is a type of yeast which lives in the human body. Normally yeast growth is kept in check by a strong immune system and by friendly bacteria in the body. When the immune system is weakened or when friendly bacteria are killed by antibiotics, candida can overgrow. This may lead to the vaginal yeast infection known as candidiasis and less commonly in infections of the skin, nails, and mouth.

Those who support this model believe that toxins produced by yeast overgrowth weaken the immune system. This makes the body susceptible to many illnesses, including AD/HD and other psychiatric disorders. The treatment program is designed to discourage the growth of candida in the body. This two-pronged approach includes the use of anti-fungal medication such as nystatin and a low sugar diet. Other aspects of the treatment approach include an elimination diet to rule out food allergies and the use of vitamin and mineral supplements.

Although it is recognized that candida can cause infections of the vagina, mouth, and skin, there is little evidence to support the idea that it also causes the host of other illnesses listed by advocates of this approach. Little evidence is provided to support these theories. Instead, anecdotal data and testimonials are offered as proof that the approach is effective. The theory is not supported by evidence and is not suggested as a helpful treatment for AD/HD.

EEG Biofeedback

Proponents of this approach believe that children with AD/HD can be trained to increase the type of brainwave activity associated with sustained attention and to decrease the type of activity associated with daydreaming and distraction. They claim the result is improvement in attention and reductions in hyperactivity and impulsivity.

The technique of EEG biofeedback involves measuring levels of electrical activity in various regions of the brain. This information is fed into a computer which transforms it into a signal, such as a light, tone or video game. Using this signal as feedback, the child is taught to increase certain kinds of brainwave activity and decrease other kinds (increase beta, decrease theta). Training involves between forty and eighty treatment sessions according to the proponents of this program. Each session lasts up to forty minutes or more. Since sessions are held two to three times per week, treatment can extend over three to ten months or longer.

Although this treatment has become quite popular and is marketed throughout the country, there continues to be limited, published peer reviewed research to support its use. Although there is an increasing interest in research in this area, the extensive claims initially made by proponents of this treatment (e.g., dramatic improvements in intelligence scores, dramatic reductions in AD/HD symptoms) seem almost too good to believe. Many of the initial studies published were seriously flawed by the use of small numbers of children with ambiguous diagnoses. **Furthermore, published studies thus far have not included appropriate control groups to rule out the effects of maturation or placebo.**

Biofeedback technology is not new. Although some believe it holds great promise in the treatment of AD/HD, at this time it must be considered at the very most an ancillary treatment used to support other treatments. From a research prospective it must be considered unproven. Parents are advised to proceed with caution. It is an expensive approach whose effectiveness, until better studies have been completed, has been not consistently demonstrated.

Other Controversial Treatments

Among other treatments that parents may hear about on the radio, view on television, or read about are the use of applied kinesiology (the manipulation of bones in the body, particularly plates of the skull to improve body and brain

functioning), optometric vision training (exercises to improve eye tracking) and auditory training (enhancing the capacity to listen to and process certain frequencies of sounds). All three of these approaches have been marketed as effective for AD/HD. However, there is limited if any scientific support that any of these three will exert a significant, positive impact on the functioning of children with AD/HD.

Summary

In this paper we have reviewed approaches which have been offered as effective for AD/HD which have not met scientific standards which would justify their inclusion as mainstream treatments for this childhood disorder. Some of these controversial treatments merit continued research while others likely do not. **Although these treatments may be offered in the marketplace as proven and accepted approaches, they are not.** Parents are cautioned when considering these treatments that time and money might be better spent on treatments with proven track records. Among the most effective means to date are the judicious use of medication and behavior management. Parent education and appropriate classroom settings, as well as helping children locate areas of success in their lives, are also effective for children with AD/HD.

How Can A Parent Be A Wise Consumer?

If you are the parent of a child with AD/HD you know how difficult your job can be. You want to obtain the very best treatment for your child. In the spirit of "how can it hurt to try" you might be tempted to throw caution to the wind when you hear about a new treatment that promises to help.

Promises are not enough. You also have the responsibility to invest your family's resources of time, money and energy wisely. This means that as with any large purchase, you must become an informed consumer.

In this paper we have provided general guidelines for evaluating new treatments. Listed below are additional tips to help you recognize treatments that are questionable.

- **Overstatement and exaggerated claims are red flags.** Be suspicious of any product or treatment that is described as astonishing, miraculous or an amazing breakthrough. Legitimate health professionals do not use words like these. Nor do they boast of their success in treating huge numbers of patients.
- Be suspicious too of any **treatment that claims to treat a wide variety of ailments.** Common sense tells us that the more grandiose the claim the less likely it is that there is any real merit behind it.
- Do not rely on testimonials from people who say they have been helped by the product or the treatment. **Enthusiasm is not a substitute for evidence and legitimate health professionals do not solicit testimonials from their patients.**
- Be skeptical about **claims that a treatment is being suppressed or unfairly attacked by the medical establishment.** Legitimate health professionals eagerly welcome new knowledge and better methods of treatment for their patients. They have no reason to oppose promising new approaches.

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Other Resources

Websites

National Resource Center on AD/HD
Complementary and Alternative Medicine [for AD/HD]
<http://www.help4adhd.org/en/treatment/complementary/MWK6>