

## NUTRITION

### First Tier Recommendations:

1. Eat at least 15 grams of protein for breakfast and lunch
2. Supplement with fish oil (or another source of omega 3's). We recommend a combined EPA and DHA of 600 to 1000-mg. and a ratio of EPA to DHA of about 1.5 to 1 for most kids.
3. Consider a supplement of 15-mg. of elemental Zinc, especially if taking psychostimulant medication.
4. Consider a multivitamin if diet is not varied and rich in vitamins and minerals

### Second Tier Recommendations:

1. Eliminate highly processed food, especially those with preservatives and food dyes.
2. Buy local, organic foods as much as possible.
3. Parent should watch *Food, Inc.* Some material may not be suitable for children after the first four minutes of the movie.

### Third Tier Recommendations:

1. Eliminate or reduce gluten (mostly wheat products)
2. Eliminate or reduce casein (dairy products)
3. Eliminate or reduce Sugar

### Fourth Tier recommendations:

1. Feingold diet. In addition to eliminating preservatives and food dyes (from Tier Two, foods with silicates are eliminated. For details see [www.feingold.org](http://www.feingold.org)

### Fifth Tier

1. Cleanse the Body, Mind, and Surroundings
2. Consider Cleansing the First Step

Diet has been increasingly recognized as a critical factor in a number of physical disorders during the past 30 years. We are starting to understand that good nutrition is just as important for emotional and cognitive health as it is for physical health.

Unfortunately, it is difficult to impossible to do studies on real food that meet the experimental “gold standard”. Medication is designed for “gold standard” studies. A placebo pill can be easily given to the control group and the results compared to the experimental group, which gets the real pill. The placebo pill can be easily made to look just like the real medication so subjects do not know if they are taking the real pill or not. In this way, expectations are controlled. Suppose we wanted to investigate the effects of eating bananas. It is difficult to conceive of a “placebo banana”. We know if we are eating a banana or not.

Another factor that makes medication studies relatively easy to do is that most medications for ADHD produce results quickly. Thus, short-term studies can show significant effects. The effects of eating most foods take longer. Although we probably would not see much difference in a six-week study comparing different diets (steak and eggs versus fish and vegetables) on heart health, we would expect a large effect in a 10 to 20-year study.

The other obvious problem in studying the long-term effects of various diets is assuring that subjects are actually eating the foods we are studying and not eating a lot of other stuff. This is especially a problem with kids.

The bottom line: We believe that the long-term effects of nutrition are considerably more significant than we can currently scientifically demonstrate. You might say that feeding the body nutritiously is a basic value we nourish at the ALC.

We have organized our nutrition recommendations under five tiers or levels. We think everyone should follow the first tier recommendations. They provide “the most bang for the buck”. The first tier recommendations are relative easy and inexpensive to do and we have good evidence then can help ADHD symptoms. The second through fifth tier recommendations get increasingly difficult to do, although we are seeing more and more evidence that these nutritional strategies can help improve attention and behavioral difficulties in ADHD

### **First Tier Recommendations**

**Protein:** Your child should eat breakfast including whole foods and protein. Protein is needed to produce the neurochemicals (mostly dopamine) needed for an alert and attentive brain. These chemicals are mostly produced in the morning and early afternoon hours. Eating protein for breakfast and lunch is necessary to produce these neurochemicals – especially during school hours. Eating a lot of protein for the evening meal does not help produce these chemicals (especially for school hours) and if anything might contribute to your child having more problems getting to sleep. It is better to eat more carbohydrates for the evening meal. Carbohydrates are involved in the production of serotonin, which helps us feel good and relaxed and contribute to a good night’s sleep.

- Aim for at least 10 grams of protein for breakfast for kids ten-years-old and under, about 15 grams for 11 to 14-years-olds (and older females), and about 20 grams for adolescent boys 15 and older. Major sources of protein include dairy products (milk, yogurt, and cheese), eggs, nuts (including peanut butter), meats (chicken, beef, and pork), seafood, and soy (soymilk, tofu). Although most kids will say “Yuk” to plain tofu, there are an increasing number of products that use soy to create all sorts of foods. My vegetarian daughter is particularly fond of imitation barbeque ribs made from soy.

- To determine the amount of protein (and other nutrients) in foods, look at the labels. Or go to [www.nal.usda.gov/fnic/foodcomp/search/](http://www.nal.usda.gov/fnic/foodcomp/search/) to look up the nutrients of thousands of generic and name-brand foods. To get you started, here is the protein count of a typical serving of some common breakfast-type foods.

| Food                                | Serving Size | Protein in Grams |
|-------------------------------------|--------------|------------------|
| Milk                                | 1 cup        | 7.9              |
| Cottage Cheese -2% Milk fat         | ½ cup        | 15.5             |
| Bacon                               | 1 oz         | 10.7             |
| Egg, large                          | 1            | 6.8              |
| Oscar Mayer Smokie Links            | 1.5 oz       | 5.3              |
| Instant Oatmeal – cooked with water | ¾ cup        | 4.1              |
| Cream of Wheat                      | ¾ cup        | 3.3              |
| Wheatena                            | ¾ cup        | 3.7              |
| Honey Bunches of Oats               | ¾ cup        | 2.1              |
| Kellogg’s Corn Flakes               | ¾ cup        | 1.4              |
| Kellogg’s Froot Loops               | ¾ cup        | 1.1              |
| Cocoa Puffs                         | ¾ cup        | 0.75             |
| White Bread Toast                   | 1 slice      | 2.4              |
| Whole-Wheat Bread Toast             | 1 slice      | 4.1              |
| Peanut Butter                       | 2 tbsp       | 8.0              |

- As you can see, the popular kid’s cereals provide very little protein. They do provide lots of sugar. Although sugars provide for an immediate surge of energy (and sometimes concentration), they cause the body to release insulin, which breaks down the sugars so they don’t harm the body. Releasing insulin causes the brain to manufacture more of the neurotransmitter serotonin, which at high levels leads to drowsiness and loss of attention.
- I also encourage kids to eat non-traditional breakfasts. Since the evening meal often has lots of protein, I recommend leftovers for breakfast.

**Other Nutrients:** Iron, Magnesium, and Zinc are also needed for good attention and control of behavior. One recent, well designed study (a double blind and randomized trial) found that adding a supplement with 15-mg of Zinc significantly increased attention and behavioral control in ADHD kids that were taking Ritalin (as judged by both parents and teachers), compared to a group that just took Ritalin.

- **Omega 3's (Fish Oil):** There is good evidence that the Omega 3's found in fish oil (and flax seeds) is important for concentration and emotional/behavioral control. A recent study at the University of Adelaide in Australia found improvement in ADHD symptoms with fish oil. Reportedly, 30 to 40 percent of the children showed significant improvement in about three months, and 40 to 50 percent showed improvement by about seven months. Remember that it took up to seven months to see significant increases in concentration and fish oil apparently didn't work at all for about half of the children using it. Since we have been strongly recommending fish oil at the Attention and Learning Clinic the past several years, we are hearing more reports of its effectiveness, often within several weeks of starting it. Some parents have said they can tell a significant difference if their child doesn't take it for a week or so.

All fish oil is not created equally. We recommend that you look for a fish oil that contains a majority of EPA and DHA. For younger kids, we recommend a total of at least 600-mg. of combined EPA and DHA. For older kids we recommend about 1000-mg. combined EPA and DHA. *We recommend the ratio of EPA to DHA of about 1.5 to 1.* In other words, the EPA mg. should be about one-and-one-half times the amount of DHA.

Go to

[http://www.dailymail.co.uk/pages/live/articles/health/womenfamily.html?in\\_article\\_id=391503&in\\_page\\_id=1799&in\\_page\\_id=1799&expand=true#StartComments](http://www.dailymail.co.uk/pages/live/articles/health/womenfamily.html?in_article_id=391503&in_page_id=1799&in_page_id=1799&expand=true#StartComments) for a news article and comments about this research.

- **Zinc:** If you are considering adding a 15 mg Zinc supplement, check the UL for your child's age (see above). Since the Tolerable Upper Intake Level for kids four to eight-years-old is 12 mg, check with your medical doctor before giving her the supplement. The UL for kids and teens 9-years-old and older is 23 mg or greater, so the 15 mg supplement shouldn't be a problem. However, you may still want to check with your medical doctor, especially if the supplement and results from the food diary add up to more than 23 mg per day.
- Keep a food diary for your child for several days and determine the amount of nutrients, especially protein, iron, magnesium, and zinc she gets. Read labels and visit [www.nal.usda.gov/fnic/foodcomp/search/](http://www.nal.usda.gov/fnic/foodcomp/search/) to do this. Or it might be easier to find a book or pamphlet with the nutrients listed for various foods. The Recommended Dietary Allowance (RDA) for iron is 10 mg for kids four to eight-years-old, between 8 to 11 mg. for older male kids and teens, and 15 mg for girls 14 to 18-years-old. The RDA for zinc is 5 mg for four to eight-year-olds, 8 for 9

to 13 year-olds, and depending on gender, 9 to 11 mg for 14 to 18 year-old teens. The RDA for magnesium is 130 mg for children four to six-years-old, 240 mg for kids 9 to 13, 410 mg for 14 to 18 year-old males, and 360 mg for 14 to 18 year-old females. Click on [www.iom.edu/Object.File/Master/21/372/0.pdf](http://www.iom.edu/Object.File/Master/21/372/0.pdf) and go to page 2, for the most recent recommended dietary allowances. It might also be helpful to check out the Tolerable Upper Intake Levels (UL) on page 4. The ULs are the levels of nutrients likely to pose no risk or cause adverse side effects.

- If after computing the nutrient levels from the food diary, your child isn't close to the RDA levels for iron, magnesium, and zinc; consider daily vitamins.
- It is helpful to track attention and behavioral changes before and after dietary, supplement, and other changes are made. The School Success CD gives you several tools to track these changes.

### **Second Tier Recommendations**

A major component of the Feingold Diet (detailed under third tier recommendations) is the elimination of food dyes and preservatives. Food preservatives are designed to preserve foods by making them repugnant to microorganisms which cause the food to rot. What do these microorganisms know that we do not? If these microorganisms won't touch food with preservatives, why should we? In addition, food dyes and preservatives add absolutely no nutritive value to food. Since an increasing number of consumers have been demanding food without dyes and preservatives, it is becoming easier to find dye and preservative food at the grocery store.

Freshly picked, organic foods fruits and vegetables likely have the most nutritional value and the least undesirable components, such as pesticides. Farmer's markets are often good places to buy fruits and vegetables – you can ask about their farming practices. Organic meat (especially grass fed beef, which is higher in omega 3's) is still considerably more expensive than

### **Third Tier Recommendations**

**Eliminate Gluten (wheat products) and Caisin (dairy products).** Recent study found that using the basic Feingold Diet along with restricting gluten (from wheat) and casein (milk protein) resulted in significant improvement in 70 percent of kids. This is a lot of restriction.

**Eliminate Sugar:** Although not on Feingold's original list of problematic foods, elimination of added sugar is often recommended. Some parents report a clear increase in behavioral problems when their child consumes sugar. Well-designed studies have not found that sugar consumption increases ADHD symptoms. However, these studies tend to look at sugar use and its consequences over a short period of time – some for only a few hours. An excess of sugar in the diet is almost certainly a significant factor in the

large increase in diabetes in childhood and adolescents. I recommend sugar in moderation and as special treats instead of daily fare consumed at every meal and in between meals. The trend to consume mega portions of soda contributes to the problem.

#### **Fourth Tier Recommendations**

**Elimination Diets:** Back in the mid 1970's Dr. Feingold promoted the elimination of a number of foods to control hyperactive and inattentive behavior. The diet eliminated most chemical additives to foods, including food dyes and preservatives; as well as foods containing silicates (grapes and tomatoes) and various other foods. If significant results are obtained with the full-scale elimination diet, one type of food is added back and the results are observed. If satisfactory results are maintained, one can assume that the child is not sensitive to this food. The idea behind the Feingold diet is that certain people are sensitive to certain types of foods or food additives. This sensitivity may not show up as a physical symptom but may cause brain dysfunction, resulting in attention problems and behavioral control difficulties. The Center For Science in the Public Interest reviewed a number of studies on the effect of this diet on ADHD symptoms. Although the results of the best studies varied a lot, looking at all the studies, it appears that the elimination diet significantly improved attention and/or behavioral control in about a third of the participants. More information can be obtained at [www.feingold.org](http://www.feingold.org) or at the Attention and Learning Clinic. The "Blue Book", which explains the Feingold diet in detail (and is probably enough to know if cooking from scratch) can be downloaded for free from the Feingold web site. If you plan to buy a number of pre-packaged foods, obtaining the Feingold approved list of name-brand foods, is helpful.

The full-scale elimination diet can be difficult for parents and children to start and maintain and it may not produce significant results in a majority of children. Another approach is to "ease into" the diet by starting to eliminate just one or two foods or food additives. If you go this route, I recommend first eliminating (as much as possible) food preservatives and dyes, as explained under Tier two recommendations. .

#### **Fifth Tier Recommendations:**

Cleanse the body, mind, and surroundings. There are many approaches at different extremes to cleansing the body. The book *Clean* represents a moderate approach. Consider Cleansing the First Step.

**Other Supplements:** Google "ADHD" plus "supplements" and you will be urged to buy numerous vitamins and minerals and other potions purported to cure ADHD or at least help alleviate ADHD symptoms. I have found few credible and no really good studies to back up the effectiveness of any of these supplements. I have seen no evidence that mega doses of anything will help ADHD symptoms. In addition, mega doses of some vitamins may be harmful. There is also growing evidence that real food packs in a lot more of what our bodies need than do supplements.