



# Safety and Efficacy of CAM Therapies for Autism Spectrum Disorders (ASDs)

## Omega-3 Fatty Acids

### Background:

Omega-3 fatty acids are among the most commonly used CAM therapies in children with ASDs. These fatty acids are often called “essential” fatty acids, because they cannot be made in the human body and therefore must be consumed in the diet. Two types of omega-3 fatty acids come from fish (DHA and EPA), while another comes from nut and plant oils (ALA). In the body, these fatty acids are used to produce hormone-like substances that are involved in a wide array of functions. Also, brain and nerve tissues contain high concentrations of DHA, and studies suggest that this fatty acid is essential to the growth of the nervous system.

There is some preliminary evidence that fatty acid levels may be low in certain psychiatric disorders, including schizophrenia and attention deficit hyperactivity disorder. Studies of DHA and EPA suggest that these substances may be beneficial in the treatment of depression.<sup>1</sup> Two studies have found that omega-3 fatty acid levels were low in children with autism,<sup>2,3</sup> while a third did not.<sup>4</sup> Some have theorized that, since omega-3 fatty acid levels may be low in children with autism, supplementation might lead to an improvement in symptoms.

### Are omega-3 fatty acids effective for symptoms of ASD?

As with most CAM therapies for ASD, there is very little scientific evidence regarding the efficacy of omega-3 fatty acids. Two case series (which are reports that describe a group of children who took omega-3 fatty acids, but without a comparison to a control group) describe a number of benefits in language and learning skills, social skills, and other measures of health.<sup>2,5</sup> One small, randomized, placebo-controlled trial in 13 children with ASD found a suggestion of a benefit in hyperactivity. Several ongoing studies are further examining the potential benefits.

### Are omega-3 fatty acids safe?

Omega-3 fatty acids are commonly used in adults and are now recommended as a standard therapy for the prevention of heart disease in adults with known heart disease. Most studies indicate that omega-3 fatty acids are relatively safe, although there are some concerns that it

may increase the risk of bleeding (and therefore should be avoided in persons at increased risk for bleeding).

### Bottom Line:

There is some preliminary evidence that omega-3 fatty acids might be beneficial for ASDs, but further studies are needed to more precisely examine these potential benefits. This supplement is believed to be relatively safe. ***It is always recommended that you discuss the potential risks and benefits of this and any other therapy with your child's regular health care provider.***

### Selection of Products:

Omega-3 fatty acid products are considered to be “dietary supplements” and therefore have limited regulation and oversight from the US Food and Drug Administration. Dietary supplement products may have variability in quality, consistency, and safety testing. If you and your health care provider decide to use omega-3 fatty acids with your child, we recommend the following resources to help in the selection of specific products:

**1) Natural Standard** – is a Web-based information service (subscription required) that conducts extensive reviews of the safety and efficacy of CAM therapies and provides summaries for both patients and clinical providers ([www.naturalstandard.com/](http://www.naturalstandard.com/)).

**2) Natural Medicines Comprehensive Database** – is a Web-based information service (subscription required) that also conducts extensive searches of the medical literature and summarizes information about natural products (dietary supplements) for patients and clinical providers ([www.naturaldatabase.com/](http://www.naturaldatabase.com/)).

**3) Consumerlab.com** – is a web-based information service (subscription required) that analyzes the content of dietary supplements to determine if the label correctly reports the actual ingredients and whether the products meet current accepted standards for contents of specific products ([www.consumerlab.com](http://www.consumerlab.com)).

## Resources:

1. Freeman MP, Hibbeln JR, Wisner KL, et al. Omega-3 fatty acids: evidence basis for treatment and future research in psychiatry. *J Clin Psychiatry*. Dec 2006;67(12):1954-1967.
2. Bell JG, MacKinlay EE, Dick JR, MacDonald DJ, Boyle RM, Glen AC. Essential fatty acids and phospholipase A2 in autistic spectrum disorders. *Prostaglandins Leukot Essent Fatty Acids*. Oct 2004;71(4):201-204.
3. Vancassel S, Durand G, Barthelemy C, et al. Plasma fatty acid levels in autistic children. *Prostaglandins Leukot Essent Fatty Acids*. Jul 2001;65(1):1-7.
4. Bu B, Ashwood P, Harvey D, King IB, Water JV, Jin LW. Fatty acid compositions of red blood cell phospholipids in children with autism. *Prostaglandins Leukot Essent Fatty Acids*. Apr 2006;74(4):215-221.
5. Patrick L, Salik R. The Effect of Essential Fatty Acid Supplementation on Language Development and Learning Skills in Autism and Asperger's Syndrome. *Autism Asperger's Digest*. Vol Jan-Feb; 2005:36-37.

## Medical Review:

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## Last Updated:

August 2009

This information is not intended to diagnose health problems or to take the place of medical advice or care you receive from your physician or other health care professional. If you have persistent health problems, or if you have additional questions, please consult your doctor. If you have questions or need more information about your medication, please speak to your pharmacist. Kaiser Permanente does not endorse any brand names; any similar products may be used. Herbs and supplements are sold over-the-counter. Kaiser Permanente carries only herb categories for which some evidence exists to show that the herbs may be effective to treat certain medical conditions.