



ASK THE Expert

What is happening with Omega 3 Oils. Is this something that people with TS should try?

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Everyone knows that there is fat or fatty acids in many of the foods we eat. Omega 3 oils (also called Omega 3 fatty acids), along with other fatty acids (e.g. Omega 6 fatty acids) belong to a group of nutrients called essential fatty acids (EFAs). They are called essential because, unlike non-essential fatty acids which our bodies produce, we can't manufacture them internally, but must acquire them externally from food. EFAs like Omega 3 and Omega 6 have many important uses in our bodies. They're part of the membranes of all our cells, they help us absorb certain nutrients, and keep cholesterol in healthy balance. EFAs are also important in brain development and function, so it's logical that we're hearing a lot about them in relation to TS.

To help understand whether EFAs have any impact on Tourette Syndrome, let's talk a bit more about EFAs. Fatty acids can be broadly divided among three separate types called saturated, monounsaturated, and polyunsaturated. Our bodies need all three. However, our bodies produce saturated and monounsaturated fats, so they are non-essential and we don't need them in food. These fats are scrumptious, and most of us eat some (or lots) of saturated and monounsaturated fats every day (I say this as I wipe off the ice cream dribbling down my chin). Some polyunsaturated fatty acids (PUFAs), are not made by the body, so they are called essential. For our bodies to survive and work properly, we absolutely *must* include EFAs in our food.

Omega 3 Sources include fish oil, flax and pumpkin seeds, green leafy vegetables, and some grains. Omega 6 sources include vegetables, fruits, nuts, seeds and grains.

As to the question of whether EFAs relate to Tourette Syndrome, as we said, some of these Omega 3 and Omega 6 EFAs are known to be very important for the brain, and have an influence on reasoning, feelings and behavior. The Omega 3 fatty acid DHA and the Omega 6 fatty acid ARA are present in breast milk, but until recently were not present in commercial

infant milk formulas. It was discovered that breast-fed infants had higher blood levels of these EFAs, and more importantly, some research showed that breast-fed infants showed better brain function than formula-fed infants. So today, we see that many infant formulas now contain DHA and ARA.

But are older children, teens and adults affected in the same way? EFAs have been studied in children with Attention Deficit Hyperactivity Disorder (ADHD)—perhaps more than any other specific diagnosis (and a frequent diagnosis for some with TS). In some studies, blood levels of EFAs have been shown to be low in children with ADHD, as well as in children with other behavioral problems, e.g. poor sleep regulation, poor motor coordination, or associated cognitive problems such as dyslexia. So, can we conclude that low levels of EFAs have a connection to these problems? Not all research studies are equal, so results from well-designed ones are the best guide for answers about the role EFAs may play in affecting behavior and brain development.

Several studies in children with ADHD have compared the impact of EFAs versus a placebo (a dummy pill meant to look like an EFA source). Most do not show a clear benefit of an EFA when compared to placebo. However, while some studies show significant improvement in behaviors, others find no difference, or even show worsening with EFA supplements. This is explained by the fact that most studies have design flaws that make it very difficult to interpret results.

Results may not be definitive because many children with ADHD may have other developmental/emotional problems, or only a small number of children are in the study. In addition, while most studies are short-term, brain cell networking and other changes in brain cell function often take a long time to build. Also, the dummy pill may not be so dumb after all: olive oil is often chosen as the placebo since it looks so much like fish oil, but olive oil contains an Omega 9 fatty acid (oleic acid) that affects brain function. (And, speaking as a fish-hater *par excellence*, I can tell you that fish oil capsules sometimes smell strongly

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like fish!). In reliable research, the participants must be "blinded"—that is, not know whether they are in the fish oil group or not. Obviously, a stinky pill is a real giveaway that may confound the study results.

Unfortunately, at present we have no published research studies of EFAs that have been conducted with people with TS. However, TSA is funding a well-designed study to investigate the association between Omega 3 fatty acids and TS symptoms. The project is currently in its second year and it will be interesting to follow the results. Fish oil is probably the most widely recognized and popular consumer source of supplemental Omega 3 EFA. There are possible dangers in using fish oils, too. For example, farmed fish may have high levels of methyl mercury which can be toxic to the brain. In addition, recent studies have shown that preterm infants receiving fish oil supplements weighed less than those who did not receive supplements.

The final message is that common sense is all-important when making treatment/dietary decisions, and study results are not all reliable. Anyone who tells you otherwise is giving you fishy advice!

This article was edited and excerpted from a longer piece by Dr. Zinner. Readers interested in the entire article can request the original copy from our Medical and Scientific Affairs Department at 718-224-2999, ext. 247.

RESEARCH NEEDS YOU!

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