

## Vilma Gabbay, M.D.

Vilma Gabbay, M.D. is Medical Director of the Anita Saltz Institute for Anxiety and Mood Disorders and is Assistant Professor of Child and Adolescent Psychiatry at the NYU School of Medicine. One of the nation's leading experts in the clinical treatment of adolescent depression, Dr. Gabbay is also a renowned researcher.

### You have just completed a TSA-funded research study on the effects of omega 3 fatty acids for treating children and adolescents with TS. Could you briefly describe your study and what you found?

Thirty-four children and adolescents with Tourette Syndrome were enrolled in our study. We wanted to find out whether omega-3 fatty acids (omega 3FA) which are derived from fish oil, would reduce the symptoms of tics and/or obsessive compulsive disorder. We conducted a double-blind placebo trial in which 17 children were treated with omega-3FA, and as a control group 17 children were given olive oil (as a placebo).

We judged the efficacy of the treatment if patients demonstrated "much improvement" or "very much improvement" as rated by the TS clinician researcher on a standardized assessment of clinical global improvement. When the results were analyzed we found that tic improvement was evident in 44% of patients treated with omega-3 fatty acids and in 35% treated with olive oil. Obsessive-compulsive symptom improvement was evident in 31% of children receiving omega-3 fatty acids and in 29% who received olive oil. Interestingly, both treatment groups had substantial improvement rates with respect to both tics and/or OCD improvement: 63% on omega-3FA, and 53% on placebo.

Response rates comparing the two treatment groups were not statistically significantly different;

however, our study results are promising in light of the high response rates. Some of the possible reasons that we could not identify differences between the treatment groups are: (i) our use of olive oil as a placebo. Olive oil can increase the ratio of omega-3 fatty acids to omega-6 fatty acids in tissues, especially brain tissues, leading to similar effects as increased omega-3 in the diet; and (ii) the very small sample size. We plan to further examine potential therapeutic effects of omega-3 fatty acids as well as olive oil in future studies.

### Would you recommend taking omega 3 fish oil supplements, flax seed oil capsules, etc., or is it more important to simply integrate a healthy portion of omega 3 into a regular diet?

Both taking supplements and integrating a healthy portion of omega-3FA into a regular diet are good options for ingesting the necessary amount of omega-3FA. Because humans cannot make these compounds, they must be derived from dietary sources.

Omega-3FA are long chain polyunsaturated fatty acids of 18-22 carbon atoms. Fish provides omega 3FA in the forms of docosahexaenoic acid (DHA: 22 carbon atoms) and eicosapentaenoic acid (EPA: 20 carbon atoms). Plant foods and vegetable oils lack EPA and DHA. Flaxseed, pumpkin seeds, hemp, canola, soybeans and walnuts are rich sources of omega-3 alpha-linolenic acid (ALA: 18 carbon atoms), which can be

converted into the longer chain EPA and DHA in the human body. However, if the diet is rich with omega-6, this can affect the conversion of ALA to the required EPA and DHA. Therefore, taking flaxseed oil may not be sufficient if the diet is unbalanced and rich with omega-6 oil.

To integrate a healthy portion of omega-3 into a regular diet, eating fish (particularly fatty fish) like salmon and tuna is recommended at least two times a week. The high concentrations of toxins (e.g. mercury, dioxins, etc) in some fish may make it problematic when trying to ingest sufficient amount of omega-3FA.

### Are there any dangers associated with taking omega 3 fatty acid capsules as a dietary supplement?

There are no known dangers associated with taking a recommended dose of omega-3 fatty acid supplements. However, patients taking more than 3 grams of omega-3 fatty acids from capsules a day should do so only under a physician's care. High intake of omega-3 has been linked with excessive bleeding and various other side effects in some people. Fortunately, in our study, there were no side effects observed in the group treated with omega-3FA other than nausea and soft stool. We had no bleeding sequelae, even though many of the children were treated with 6,000 mg (6 grams) per day of omega-3FA.



### Are there any differences among omega 3 fatty acids found in flaxseed oil and fish oil supplements, and would one be preferable over the other for reducing TS symptoms?

I would recommend taking fish oil supplements because they have the required omega-3FA with the recommended ratio of EPA to DHA. While flaxseed oil is rich with omega-3FA, it is mainly ALA which still needs to be converted to the longer chain omega-3FA (EPA, DHA). If the diet is enriched with omega-6FA, the conversion into EPA and DHA will not occur.

When taking capsules, it is important to check the bottle for the concentration of EPA and DHA to ensure sufficient intake. Most capsules come as 1,000 mg of combined omega-3 and omega-6. Make sure that at least 50% contain EPA and DHA. There are also candies made of omega-3FA (100mg) and strawberry and chocolate flavored liquids of EPA and DHA. It is important not to exceed the recommended daily intake and to ensure that the product was tested for toxins (e.g. mercury, PCBs, dioxins). ■

## Use Your Mouse to Donate to TSA

Interested in contributing to TSA research, education or awareness programs? Maybe you would like to recognize the achievement of a friend or relative or honor the memory of a loved one? Your secure donation can be just a few mouse clicks away. Simply go to the TSA website, click on the "Participate/Donate" tab at the top and let your mouse follow the simple steps. It's the easy way to help make a difference in the lives of people touched by TS.