

**PRESS RELEASE****Omega-3 supplementation reduces tic-impairment in those with Tourette's Disorder <sup>1</sup>.**

Omega-3 fatty acids may reduce tic-related impairment in some children and adolescents with Tourette's Disorder (TD) according to the results of the first double-blind, placebo-controlled clinical trial of its kind<sup>1</sup>. The study was a collaboration among NYU Child Study Center and Department of Radiology at NYU School of Medicine, New York, and the Kline Institute for Psychiatric Disorders, Orangeburg, New York, and was funded by the National Institutes of Health, the Anita Saltz Foundation, the Leon Levy Foundation and the Tourette Syndrome Association.

TD is a childhood onset neuropsychiatric disorder involving multiple waxing and waning motor and vocal tics. It is believed to be caused by a combination of neurological malfunctions involving dopamine and serotonin, and inflammatory processes. Although drug treatments are available, they either have limited effectiveness or significant side effects. Consequently, alternative treatments such as omega-3 fatty acids derived from fish [eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA)] are widely used in TD, particularly since the condition often exists in combination with attention deficit hyperactivity disorder (ADHD) and obsessive-compulsive disorder (OCD) – conditions often treated successfully omega-3 fatty acids. EPA is thought to provide benefit through its anti-inflammatory effects while DHA is more neurotrophic.

The trial included 33 children and adolescents (ages 6-18) diagnosed with TD who were treated for 20 weeks with an olive oil placebo or an active treatment starting at either 250 mg/day EPA+DHA or 500 mg/day EPA+DHA depending on their age, and gradually titrated upwards by increments of 250 mg/day EPA+DHA to a possible maximum dose of 6000 mg/day. Dose titration depended on the subject's improvement since the initial visit. For example, if symptoms were very much improved or much improved, the dose remained unchanged. If symptoms were minimally improved, unchanged or worse, the dose was increased to the next level provided there were no significant adverse effects. There was no change from baseline at weeks 6, 10 or 16, but benefits were measured at 20 weeks indicating that it takes time for the fatty acids to have an impact – similar to results reported in people with ADHD. Results showed that relative to placebo, those treated with omega-3 fatty acids did not have lower tic scores (includes the number of tics, frequency, intensity, complexity and interference), but they did have significantly less tic impairment (includes negative effects on self-esteem, school, social and family functioning). In addition, significantly more subjects taking omega-3 fatty acids were considered responders when taking into consideration both the tic scores plus the tic impairment. This functional impairment associated with TD is a key aspect of illness severity and therefore, makes the results of this study noteworthy. Adding to the strength of these results is the fact that many of the patients were being treated with their normal drug medication so that any measured improvement was above that already achieved with conventional treatment. In fact, there was a 26% tic score improvement in the omega-3 group which is consistent with improvements observed in previously reported drug trials on risperidone (29%) and guanfacine (29.5%). Unfortunately, the olive oil placebo had a minor therapeutic effect probably due to its antioxidant properties making the benefits derived from the omega-3 treatment less significant. There were no significant side effects.

This study confirmed that omega-3 fatty acid supplementation may be a safe viable alternative to conventional drug therapy for those suffering from TD and that large scale clinical trials are warranted to confirm these findings.

**References:**

1. Gabbay V, Babb JS, Klein RG, Panzer AM, Katz Y, Alonso CM, Petkova E, Wang J, Coffey BJ. A Double-Blind, Placebo-Controlled Trial of Omega-3 Fatty Acids in Tourette's Disorder. *Pediatrics*. 2012 May 14. [Epub ahead of print]