

Clinical trial boosts omega-3's ADHD benefit claims

By Stephen Daniells

4/17/2007- **Omega-3 supplementation of children with learning and behavioural problems led to significant improvements, adding important data to this high profile subject.**

A number of studies have reported similar results and this led to calls by some for omega-3 supplementation of school children. Indeed, the UK's Food Standards Agency (FSA) last year reviewed the science in this field but ultimately decided against such measures, stating the evidence was insufficient. In many cases these studies were said to lack quality in research methodology and reporting, and failed to account for confounders.

But studies like the randomised, double-blind, placebo-controlled trial published in the *Journal of Developmental & Behavioural Pediatrics* could lead to a rethink in this stance.

Lead author of the new study Nathalie Sinn told NutraIngredients.com that while omega-3 fatty acids appear critical for healthy brain development and health, efficacy in enhancing the learning and behaviour of children in the general population had not been investigated in a clinical trial.

"Between one in five and one in 10 children suffer learning and behaviour problems and these can cause significant problems for these children, their learning, parents, teachers and schools, and can persist into adulthood," she said.

"Therefore I would deem any consideration of this research and indeed any research that demonstrates possible benefits for learning in school children with improved nutrition and diet by policy makers to be a positive step."

The new study from the University of South Australia recruited 132 kids with ADHD aged 7 to 12 for the randomised, placebo-controlled, double-blind intervention study. One hundred and four children completed the trial.

For the first 15 weeks of study, the kids were given daily supplements of either polyunsaturated fatty acids (omega-3 and omega-6, 3000 milligrams per day), PUFAs plus multivitamins and minerals, or placebo capsules (palm oil).

After 15 weeks all the groups crossed-over to the PUFA plus multivitamins and minerals supplement.

The supplement, provided by Equazen Nutraceuticals, was derived from high-EPA marine fish oil and virgin evening primrose oil (GLA). The eyeq capsules formulation contained Eicosapentaenoic acid (EPA), Docosahexaenoic acid (DHA), GLA, and vitamin E.

Parents were asked to rate their child's condition after 15 and 30 weeks with the 14 ADHD scales of the Conner's Parent Rating Scales. After 15 weeks of eyeq supplements, improvements were recorded in half of these scales.

After 30 weeks (placebo group switching to eyeq supplements) the parental ratings of behaviour improved significantly in nine out of 14 scales.

No significant improvements were recorded in the Conners Teacher Ratings Scale, but the researchers state that parental ratings are considered more accurate for identifying ADHD in children than teachers.

"The present study is the largest PUFA trial to date with children falling in the clinical ADHD range on Conners Index. The result support those of other studies that have found improvements in developmental problems symptomatic of ADHD with PUFA supplementation," wrote Sinn.

"These results have significant implications for children with ADHD-related symptoms, parents, and clinicians."

Dr. Sinn said that many questions remain unanswered. *"This work needs to be replicated in other scientifically controlled trials in populations of children with different constellations of symptoms and other developmental disorders that overlap with ADHD,"* she told this website.

"We need more understanding about biological mechanisms, degree of relative PUFA deficiency and which children are most likely to respond, and also the relative importance of the omega-3 fatty acids EPA and DHA, and the inclusion of omega-6 fatty acid GLA, in the supplement that has received successful outcomes in the UK and Adelaide trials."

She added that a new trial would be starting this year to continue this work, with the taking of blood and urine samples to gain more understanding of fatty acid and biological metabolic profiles of responders versus non-responders, extending neuropsychological assessments to gain more understanding of cognitive and learning benefits, and comparing EPA with DHA.

"This will be a 12-month 3-way crossover trial, from which we hope to release baseline data of fatty acid profiles by the end of this year and final results of the intervention in 2009," she said.

Sarah Newman, a spokesperson for the FSA, said the the new study does not change the FSA's current position on omega 3 supplements and behaviour in children.

"The agency is aware that there is some evidence of benefits of fish oil supplements for some children with learning difficulties - such as Attention Deficit Hyperactivity Disorder (ADHD). Although, the evidence is not clear enough to justify recommending supplements to be taken by children, it does underline the importance of a healthy balanced diet including fish for children and the need for their carers and meal providers to be advised and trained to deliver this," she said.

"The agency will continue to monitor any emerging evidence in this area."

Source: *Journal of Developmental & Behavioural Pediatrics*
Volume 28, Pages 82-91

"Effect of supplementation with polyunsaturated fatty acids and micronutrients on learning and behavior problems associated with child ADHD"

Authors: N. Sinn, J. Bryan