

Fatty acid supplements improve behavior, cognition in learning disabled children

Children with hyperactivity, dyslexia, and other learning disabilities are at high risk for life problems including academic failure and delinquency, but new research suggests that adding certain fatty acids to these children's diets can improve their odds of success.

Alexandra Richardson and colleagues studied 41 children between the ages of 8 and 12 who suffered from both learning disabilities (primarily dyslexia) and hyperactivity. Half of the children received supplements of highly unsaturated fatty acids (HUFAs) for 12 weeks, while the other half received a placebo.

The researchers say that while the groups' behavioral and learning problems were similar at the beginning of the study, "after 12 weeks, mean scores for cognitive problems and general behavior problems were significantly lower for the group treated with HUFAs than for the placebo group."

Richardson says, "Abundant evidence points to the importance of specific fatty acids in brain development. These fatty acids are often under-consumed or under-produced in children with behavioral and learning challenges."

The study supports earlier research by Laura Stevens et al. (see related article, [Crime Times, 2000, Vol. 6, No. 4, Page 3](#)) indicating that a subgroup of children with ADHD who show physical signs of fatty acid deficiencies (such as dry hair, frequent urination, and excessive thirst) may have metabolic defects that impair their ability to use fatty acids efficiently. Richardson et al. found that ADHD children with deficiency symptoms had altered plasma levels of fatty acids and their precursors.

HUFAs occur naturally in oily fish, nuts, and green leafy vegetables, and are available as supplements. Previous research (see related articles, [Crime Times, 2000, Vol. 6, No. 4, Page 3](#) and [Crime Times, 1999, Vol. 5, No. 1, Page 1](#)) indicates that they can markedly reduce symptoms of bipolar disorder, schizophrenia, and dyslexia. Studies of rodents also suggest that a reduced intake of certain fatty acids can cause learning problems, and that under some circumstances these problems can be reversed by restoring normal fatty acid levels.

Putting research into action

As studies continue to show marked improvements in hyperactive or dyslexic children treated with fatty acids, parents and educators are increasingly eager to test this dietary treatment on learning disabled children.

In Britain, 13 primary schools in County Durham are now conducting a study of the effects of omega-3 and omega-6 fatty acids on students with dyslexia, dyspraxia, ADHD, and autistic spectrum disorders. Senior educational psychologist Madelaine Portland, who organized the study, says, "In the past 20 years there have been massive increases in the numbers of children diagnosed with these disorders-as many as four or five times more. The most significant factor that has changed for children in the last 20 years is their diet."

"A randomized double-blind, placebo-controlled study of the effects of supplementation with highly unsaturated fatty acids on ADHD-related symptoms in children with specific learning difficulties," A. J. Richardson and B. K. Puri, *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, Vol. 26, No. 2, February 2002, 233-9. Address: Alexandra Richardson, Department of Physiology, Oxford University, Oxford, UK, alex.richardson@physiol.ox.ac.uk.

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"Diet can ease problem behaviours," BBC News, February 13, 2002.

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"Reversibility of n-3 fatty acid deficiency-induced alterations of learning behavior in the rat: level of n-6 fatty acids as another critical factor," A. Ikemoto, M. Ohishi, Y. Sato, N. Hata, Y. Misawa, Y. Fujii, and H. Okuyama, *Journal of Lipid Research*, Vol. 42, No. 10, October 2001, 1655-63. Address: A. Ikemoto, Department of Biological Chemistry, Faculty of Pharmaceutical Sciences, Nagoya City University, 3-1 Tanabedori, Mizuhoku, Nagoya 467-8603, Japan.

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"Diet test for special needs pupils," BBC News, February 25, 2002.