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Retrieved and summarized from: *The LCP Solution* by: Jacqueline Stordy, Ph.D. & Makolm J. Nicholl

Dr. Stordy's first study focused on her hypothesis, which was later proven through research (below) involving blood work and DNA study, "that in the women who had a family history of dyslexia, their diet had not made any difference. Women with such a predisposition were obviously getting the precursor fatty acids in their diet, but were unable to convert them to DHA and AA, the longer-chain omega form demanded by the hungry brain (105). Additional studies found supplementation with just DHA from micro algae, and not fish oil, resulted in no improvements; thus, causing Dr. Stordy to focus on creating a combination of DHA fish oils using research that analyzed participant's blood samples and DNA results. She also focused on dietary habits, vitamin supplementation, and decreasing stress through educational and home modifications.

Effects of LCP Deficiency/Improvements with Efalex:

Dyslexia: children who adapted poorly to the dark significantly improved their abilities to adapt and see in the dark once supplemented with DHA as well as vitamins A and D (107, 108). Brain imaging studies were completed by a team at Oxford University. They concluded, "The metabolism of membrane phospholipids is heavily influenced by their EFA composition; findings are also consistent with EFA deficiency in dyslexia (123)." These fatty substances form the structure of nerve membranes.

Dyspraxia and ADHD study: "Motor skills are related to ways in which nerves control the muscles (114)." After four months of supplementation, some participants had improved so much they no longer needed occupational physical therapy. All participants' motor skills improved along with concentration and self-control.

ADHD: "Hyperactive children had significantly lower levels of the LCPs" called DHA, DGLA, and AA in their blood cell membranes (115). Dr. Mitchell and colleagues in 1987, published in Clinical Pediatrics

Additional Research Findings:

Dr. Burgess and Laura Stevens in 1995, published in the *American Journal of Clinical Nutrition* a study that showed that ADHD children:

- "Displayed clinical signs of LCP deficiency such as excessive thirst and the need to urinate frequently

- Had much lower levels of AA and DHA in their red blood cell membranes even though, like the control group, they consumed plenty of the LA and ALA precursors in their diet.
 - Participants were unable to convert LA and ALA into the long-chain derivatives AA and DHA. They also had more omega-6 DPA in the membranes. Past studies had already proven that too much omega-6 is found when an individual is deficient in DHA (115)."

"The ADHD boys were also:

- Less likely to have been breast-fed (or fed for shorter lengths of time)
- More likely to suffer from asthma & other health problems"

According to researchers, LCP deficiency makes the lining tissues of the skin, the lungs, and the stomach more permeable. As a result, materials that do not normally penetrate the body manage to get inside and cause inflammation and other allergic responses. When LCP supplements are given, the lining tissues become less permeable again.
(pg. 43)

Purdue researchers published in 1996, in *Physiology and Behavior*. (pgs 117,118).

Additional symptoms associated with LCP deficiencies include:

- "Increased thirst"
- "Frequent urination"
- "Dry skin"
- "More frequent and excessive temper tantrums"
- "Difficulty falling asleep and getting up in the morning"
- "Significantly greater learning problems"

Japan – researchers studied aggressive behavior and omega health:

Supplements were given for three months to students with the end of the study occurring during finals; a time of acute mental stress. "The group of students who receive no DHA supplementation exhibited significant, aggressive behaviors against others (120)." Thus, there is a correlation between behavior and omega levels.

University of South Australia: Research showed an improvement in behavioral and learning problems in children with ADHD when taking omega-3 fish oil combined with evening primrose oil. Of the 132 children tested, almost 50 percent showed improvement during the study. This equates to a success rate greater than Ritalin, the most common ADHD drug.

A similar study, published in the May 5, 2005 issue of *Pediatrics* backs up these results. According to Paul Montgomery, D.Phil, "A lack of certain polyunsaturated fatty acids may contribute to dyslexia and attention-deficit/hyperactivity disorder." Follow the links below to learn more: <http://www.oilofpisces.com/attentiondeficitdisorder.html>



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<http://www.nutraingredients.com/Research/More-support-for-omega-3-calming-ADHD-kids>

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