

Two recent studies examined the possible correlation between omega-3 levels and symptoms and behaviors associated with ADHD. Children with ADHD were more likely to have low levels of omega-3 fatty acids, and a correlation between low omega-3 levels and anti-social behavior and emotional regulation was also reported.

ADHD symptoms and associated behaviors may be correlated with low omega-3 levels

Previous research has reported abnormal plasma fatty acid profiles in children with attention deficit hyperactivity disorder (ADHD), and has suggested some symptoms of ADHD may be benefited with omega-3 supplementation.

Recently the journal Prostaglandins, Leukotrienes, and Essential Fatty Acids, published two related research studies looking at the possible connection between low blood levels omega-3 acids and emotional health in children.

The aim of the first study was to determine whether ADHD children have abnormal plasma omega-3 levels, and whether ADHD symptoms and associated behaviors are correlated with omega-3 levels. Subjects included 29 male children diagnosed with ADHD and 43 who were not. Plasma DHA was lower in ADHD children compared to controls. Callous-unemotional (CU) traits were found to be significantly inversely related to both EPA and total omega-3s in the group with ADHD. The results showed that anti-social and callous-unemotional traits in ADHD may be associated with lower omega-3 levels.

It is known that ADHD is often associated with poor emotion regulation. In a second study researchers looked at the differences between ADHD and non-ADHD children in omega 3 and 6 fatty acid plasma levels and the potential relationship between them and emotion-elicited event-related potentials (ERPs).

Thirty-one children with ADHD and 32 without were compared in their plasma omega-3/6 levels and corresponding ERPs during an emotion processing task. Children with ADHD had lower average omega-3/6 levels, and ERP abnormalities were significantly associated with lower omega-3 levels in the ADHD group. The results of this study show for the first time that lower omega-3 fatty acids are associated with compromised emotion processing in children with ADHD.

These studies show for the first time that low omega-3 fatty acid levels may be related to poorer emotion regulation and anti-social and callous unemotional traits in male children and adolescents.

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Gow RV et al. Omega-3 fatty acids are inversely related to callous and unemotional traits in adolescent boys with attention deficit hyperactivity disorder. Prostaglandins Leukot Essent Fatty Acids. 2013 Jun;88(6):411-8.

Gow RV et al. Omega-3 fatty acids are related to abnormal emotion processing in adolescent boys with attention deficit hyperactivity disorder. Prostaglandins Leukot Essent Fatty Acids. 2013 Jun;88(6):419-29.

