

Abstract

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EPA supplementation improves teacher rated behaviour and oppositional symptoms in children with ADHD.

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AIM: Measure efficacy of EPA in children with ADHD.

METHODS: RCT of 0.5g EPA or placebo (15 weeks) in 92 children (7-12 years) with ADHD. Efficacy measure was Conners' Parent/Teacher Rating Scales (CPRS/CTRS). Fatty acids were analyzed in serum phospholipids and red blood cell membranes (RBC) at baseline and endpoint with gas chromatography.

RESULTS: EPA improved CTRS inattention/cognitive subscale ($p = 0.04$), but not Conners' total score. In oppositional children ($n = 48$) CTRS total score improved $\geq 25\%$ in 48% of the children receiving EPA vs. 9% for placebo (ES 0.63, $p = 0.01$). In less hyperactive/impulsive children ($n = 44$), $\geq 25\%$ improvement was seen in 36% vs. 18% (ES 0.41, n.s.), and with both these types of symptoms 8/13 with EPA vs. 1/9 for placebo improved $\geq 25\%$ ($p = 0.03$). Children responding to treatment had lower EPA concentrations ($p = 0.02$), higher AA/EPA ($p = 0.005$) and higher AA/DHA ratios ($p = 0.03$) in serum at baseline. Similarly, AA/EPA ($p = 0.01$), AA/DHA ($p = 0.038$) and total omega-6/omega-3 ratios ($p = 0.028$) were higher in RBC, probably due to higher AA ($p = 0.011$).

CONCLUSION: Two ADHD subgroups (oppositional and less hyperactive/impulsive children) improved after 15 weeks EPA treatment. Increasing EPA and decreasing omega-6 fatty acid concentrations in phospholipids were related to clinical improvement.

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