

Abstract

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Supplementation of polyunsaturated fatty acids, magnesium and zinc in children seeking medical advice for attention-deficit/hyperactivity problems-an observational cohort study.

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BACKGROUND: Polyunsaturated fatty acids are essential nutrients for humans. They are structural and functional components of cell membranes and pre-stages of the hormonally and immunologically active eicosanoids. Recent discoveries have shown that the long-chained omega-3 fatty acids eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) also play an important role in the central nervous system. They are essential for normal brain functioning including attention and other neuropsychological skills.

MATERIALS AND METHODS: In our large observational study we monitored 810 children from 5 to 12 years of age referred for medical help and recommended for consuming polyunsaturated fatty acids (PUFA) in combination with zinc and magnesium by a physician over a period of at least 3 months. The food supplement ESPRICO® (further on referred to as the food supplement) is developed on the basis of current nutritional science and containing a combination of omega-3 and omega-6 fatty acids as well as magnesium and zinc. Study objective was to evaluate the nutritional effects of the PUFA-zinc-magnesium combination on symptoms of attention deficit, impulsivity, and hyperactivity as well as on emotional problems and sleep related parameters. Assessment was performed by internationally standardised evaluation scales, i.e. SNAP-IV and SDQ. Tolerance (adverse events) and acceptance (compliance) of the dietary therapy were documented.

RESULTS: After 12 weeks of consumption of a combination of omega-3 and omega-6 fatty acids as well as magnesium and zinc most subjects showed a considerable reduction in symptoms of attention deficit and hyperactivity/impulsivity assessed by SNAP-IV. Further, the assessment by SDQ revealed fewer emotional problems at the end of the study period compared to baseline and also sleeping disorders. Mainly problems to fall asleep, decreased during the 12 week nutritional therapy. Regarding safety, no serious adverse events occurred. A total of 16 adverse events with a possible causal relationship to the study medication were reported by 14 children (1.7%) and only 5.2% of the children discontinued the study due to acceptance problems. Continuation of consumption of the food supplement was recommended by the paediatricians for 61.1% of the children.

CONCLUSION: Our results suggest a beneficial effect of a combination of omega-3 and omega-6 fatty acids as well as magnesium and zinc consumption on attentional, behavioural, and emotional problems of children and adolescents. Thus, considering the behavioural benefit in combination with the low risk due to a good safety profile, the dietary supplementation with PUFA in combination with zinc and magnesium can be recommended.

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