Abstract

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Association between Blood Omega-3 Index and Cognition in Typically Developing Dutch Adolescents.

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OBJECTIVE: The impact of omega-3 long-chain polyunsaturated fatty acids (LCPUFAs) on cognition is heavily debated. In the current study, the possible association between omega-3 LCPUFAs in blood and cognitive performance of 266 typically developing adolescents aged 13-15 years is investigated.

METHODS: Baseline data from Food2Learn, a double-blind and randomized placebo controlled krill oil supplementation trial in typically developing adolescents, were used for the current study. The Omega-3 Index was determined with blood from a finger prick. At baseline, participants finished a neuropsychological test battery consisting of the Letter Digit Substitution Test (LDST), D2 test of attention, Digit Span Forward and Backward, Concept Shifting Test and Stroop test. Data were analyzed with multiple regression analyses with correction for covariates.

RESULTS: The average Omega-3 Index was 3.83% (SD 0.60). Regression analyses between the Omega-3 Index and the outcome parameters revealed significant associations with scores on two of the nine parameters. The association between the Omega-3 Index and both scores on the LDST ($\beta = 0.136$ and $p = 0.039$), and the number of errors of omission on the D2 ($\beta = -0.053$ and $p = 0.007$).

CONCLUSION: This is a possible indication for a higher information processing speed and less impulsivity in those with a higher Omega-3.

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