Reference:

A Randomized Control Trial in Schoolchildren Showed Improvement in Cognitive Function After Consuming a Bread Spread, Containing Fish Flour From a Marine Source.


Nutritional Intervention Research Unit, Medical Research Council, Tygerburg, South Africa

Summary:

This clinical trial was initiated to investigate the potential effect of an experimental fish-flour bread spread enriched in omega-3 fatty acids as DHA/EPA on the cognitive performance of children ages 7-9 years. The omega-3 bread spread provided an average daily intake of 127mg of DHA + 55mg of EPA (DHA/EPA combined of 182mg/day) over a six month period. The control group had less than 20% of this intake of DHA/EPA. The current study suggested that the learning ability and memory of children aged 7-9 years improved after supplementing with a fish-flour bread spread containing long-chain omega-3 fatty acids as DHA/EPA embedded in a natural food matrix. The study showed a significant intervention effect based on measurements using the HVLT (Hopkins Verbal Learning Test) Recognition (increased by 9%) and Discrimination Index (increased by 20%) as well as for the Spelling Test in these children. In their conclusions, the authors speculate that the ‘cumulative benefits from prolonged ingestion of DHA may eventually, over time, have a positive effect on the school performance and general health of children’.

Dr. Holub's Comments:

The present study is one of relatively few that have evaluated and observed an apparent beneficial fact on cognition in school-age children by increasing their intakes of long-chain omega-3 fatty acids as DHA (predominantly) + EPA. It is noteworthy that the intakes of
DHA/EPA in the group supplemented with the fish-flour bread spread provided an average daily intake of 127mg DHA + 55mg EPA which are both considerably greater than current intakes of these fatty acids amongst children in North America aged 4 –years. A recently-published study from our lab (Madden et al, J. Nutr., 139:528-532 (2009)) directly assessed the intake of various fatty acids including omega-3 fatty acids in Canadian children. This study indicated that the daily average intake of DHA was 54mg while that for EPA was 38mg (summed average intake of DHA+EPA = 92.5mg/day) with a high degree of variability between individual children. In this latter study, only 22% of the children met the ‘suggested’ intake of DHA+EPA for North America based on the DRI recommendations from the Nation Academy of Sciences (Washington DC) which suggested that an adequate intake may be 90mg/day (DHA/EPA combined) or 10% of the DRI of 900mg /day for alpha-linolenic acid (ALA). The DHA/EPA summed intake in the present study via the fish-flour bread spread was approximately double that of current average intakes for 4-8 year old children in North America.