Abstract

Title: Effect of prenatal supplementation with DHA from algal-oil on the attention and mental development of the child

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Background: During gestation the foetus undergoes a massive evolution and the omega-3 fatty acid docosahexaenoic acid (DHA) is important for the brain development during that period of time. Today, the recommended daily intake of DHA for pregnant women is 200 mg from a dietary source. Several studies have investigated the effects of prenatal supplementation with DHA on children’s cognition.

Objective: The objective of this systematic review was to investigate the scientific evidence for effect of prenatal supplementation with DHA from algal-oil on children’s attention and mental development compared to placebo.

Search strategy: A total of nine searches of literature were performed in the three databases PubMed, Scopus and Cochrane. Examples of words used were the MeSH terms "Fatty Acids, Omega-3", "Docosahexaenoic Acids", "Mental Processes" and "Child Development".

Selection criteria: Studies were included if they were randomized controlled trials and human studies. The intervention must consist of algal-oil and should be given to women during pregnancy. Studies were excluded if the supplementation continued after birth, if they were not written in Swedish or English, and if the aim was to investigate the effects of DHA on neuropsychiatric diagnosis.

Data collection and analysis: After the search of literature there were four remaining articles whose quality were assessed using the examination template for RCT studies provided by the SBU. To evaluate the quality of the evidence, the outcome measurements were analyzed separately according to GRADE.

Main results: The studies did not find any effect on mental development. There were small effects of improved attention during infancy but this effect did not remain in preschool age. The included studies were of high and medium high quality.

Conclusions: There is moderately strong scientific evidence that prenatal supplementation with DHA from algal-oil can improve the child's attention at infant age but not at preschool age and that there is no effect on the child's mental development from birth to preschool age (ثلاثة أربعة وثلاثة أربعة وثلاثة أربعة وثلاثة أربعة وثلاثة أربعة).

Keywords: Docosahexaenoic acid, cognition, attention, mental development, algal-oil