Background: ADHD is a neuropsychiatric diagnosis that can manifest itself in many different ways such as learning difficulties and concentration problems. This is stressful for the affected individual and those in his/her environment. ADHD is usually treated with stimulant medications. Levels of the omega-3 fatty acids EPA and DHA in the cell membranes of children with ADHD have been studied, revealing lower levels compared to controls.

Objective: The purpose was to examine the scientific evidence on whether supplementation of fish oil/marine oil containing EPA and/or DHA has a positive effect on learning ability and concentration in children between six and twelve years with ADHD.

Search strategy: PubMed and Scopus Library were used in the literature search. Keywords were: omega 3 supplementation, attention, adhd, cognition, fish oil, DHA, EPA, learning, attention deficit disorder with hyperactivity.

Selection criteria: Inclusion criteria were RCTs, human studies, children between the ages of six and twelve with ADHD according to DSM, non-medicated or stably medicated, articles in English or Swedish. Intervention where supplementation of marine oil EPA and/or DHA. Exclusion criteria were severe co-morbidities, such as autism or mental retardation, as well as studies shorter than three months.

Data collection and analysis: Four studies met the criteria and were reviewed with SBU’s "Mall för kvalitetsgranskning av randomiserade studier". One of the studies were assessed to have poor study quality and therefore excluded from the averaging. The selected endpoints evidence was graded using the University of Gothenburg template "Underlag för sammanvägd bedömning enligt GRADE ".

Main results: Two studies showed significant improvement in the outcome measure cognition. The evidence level was considered to be low (++). One study showed significant improvement, one study showed significant impairment and one study showed no difference in the outcome measure attention. The evidence level was considered to be very low (+).

Conclusions: There is scientific evidence that supplementation of marine oil containing EPA and/or DHA may improve cognition and attention, in children between six and twelve years with ADHD. However, more research is needed before a recommendation on supplementation can be given in order to improve cognition or attention. However, there is no reason to give advice against it.