Peninsula Cerebra Research Unit
PenCRU Childhood Disability Research

What's the Evidence?

Omega 3 supplements for children with ADHD

Key findings

- Current UK guidance does not recommend omega 3 supplements for the treatment of ADHD.
- The evidence suggests omega 3 supplements may have a small positive impact on ADHD symptoms in children. However, uncertainty remains about this evidence and further high quality trials are recommended.

Updated August 2018

Published April 2013

What were we asked?

A survey of parents of children with Attention Deficit Hyperactivity Disorder (ADHD) indicated that they were interested in the evidence for whether omega 3 fatty acid supplements reduce symptoms in children and young people with ADHD.

What did we do?

We searched a range of academic databases (Cochrane Library, PsycINFO, PubMed in 2013 and PubMed, Trip database, NHS Evidence, Cochrane reviews and NICE guidance in 2018) to find the most recent systematic reviews and randomised controlled trials (RCTs) investigating this research question. The search was first conducted in 2012, and updated in April 2013 and again in August 2018.

What did we find?

What are Omega 3 and 6 supplements?

- Omega 3 is a type of polyunsaturated fatty acid (PUFA) found in oily fish and some seeds and nuts.
- Omega 3 is required in our diet for several processes in the body and is necessary for good health.
- The NHS recommends two portions of fish are consumed per week including one portion of oily fish, high in omega 3 (trout, mackerel, salmon, fresh tuna).[1]
- Although omega 3 occurs naturally in certain foods it is also prepared and sold as a dietary supplement.
- Omega 6 is another type of PUFA which must also be taken in through diet. Omega 6 also plays a vital role in the body and is found in poultry, eggs, vegetable and sunflower oils and some nuts and cereals.

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What evidence was found?

A high quality systematic review published in 2013 summarised the evidence from eleven randomised controlled trials that had studied the effects of omega 3 and 6 supplements on ADHD symptoms in children.[2]

This review described a thorough search strategy for relevant studies.

- Five trials involved omega-3 supplements, two used omega-6 supplements, and the remaining four trials involved both omega-3 and omega-6 supplements.
- Trials that had included children aged 3-18, with a diagnosis of ADHD or meeting the accepted criteria for an ADHD diagnosis, were included in the review.
- Studies must have compared omega 3 or omega 6 supplements for ADHD to a control group receiving treatment as usual or a placebo.
- The outcome measure was change in ADHD symptom severity from pre- to post-treatment.

In nine of the studies, less than 30% of participants were taking pharmacological ADHD medication. The results from these nine studies were combined in a meta-analysis. This is a way of combining results from several smaller studies into one more reliable result.

The initial meta-analysis suggested that omega supplements had a small but statistically significant beneficial effect on ADHD symptoms in children.

The findings were still significant when only those results obtained by 'blinded' assessors were included in the analysis. Results from a blinded assessment are less susceptible to bias because an assessor may rate the effects of the intervention differently if they are aware of the treatment.

These findings appear to confirm results from an earlier systematic review published in 2011, which suggested that omega supplements might have a positive impact on ADHD symptoms in children.[3]

In 2018 we updated our searches. We identified an opinion piece about omega 3 and ADHD published in 2018. It was co-authored by the same researcher who published the 2011 systematic review described above. This article restated findings from previous reviews that the highest quality evidence showed a small to moderate benefit from omega 3 supplementation on ADHD symptoms. However the authors state that there are potential issues of publication bias. Publication bias happens when the publication of a study depends on the nature of its results. In general, studies which have positive findings are more likely to be published than those with negative results. Publication bias can lead to incorrect conclusions being made about whether an intervention works or not.[4]

What do we think?

Currently, both NICE in England and SIGN in Scotland do not recommend fatty acid supplements for the treatment of ADHD in children.[5,6]

The available published evidence does suggest that omega 3 supplements may have small positive benefits for children with ADHD. However, uncertainty remains about this evidence and further high quality randomised controlled trials are recommended. Future trials should all be pre-registered to avoid publication bias and ensure that all results, positive or negative, are available.

We would like to hear your feedback on this summary- please email us at pencru@exeter.ac.uk if you have any comments or questions.

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