

Effect of supplementation with polyunsaturated fatty acids and micronutrients on ADHD-related problems with attention and behavior

Sinn N and Bryan J
(2007) *J Dev Behav Pediatr.* 28(2):82-91

- The objective:** To investigate the effects of supplementation with polyunsaturated fatty acids (PUFAs) and micronutrients on symptoms typically associated with childhood attention-deficit hyperactivity disorder (ADHD).
- The study:** A total of 132 Australian children aged 7-12 years participated in a randomized, placebo-controlled, double-blind intervention study over 30 weeks. For the first 15 weeks they were split into 3 groups taking either (1) PUFA treatment alone (6 x 500 mg Equazen eye q™ capsules per day), (2) PUFA plus micronutrients or (3) placebo capsules (palm oil). In weeks 16-30 all groups were given PUFAs plus micronutrients in a one-way crossover. All children were assessed before, during and after treatment on parent and teacher ratings of attention and behaviour (Conners' rating scales – long version).
- Inclusion:** Children were included if they had ADHD scores above the 90th percentile of the population according to parents rating on Conners' ADHD Index.
- Exclusion:** Children were not recruited into the trial if they were receiving stimulant medication, or if they had been taking any form of omega-3 supplementation three months prior.

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A summary of the key findings from the paper:

Effects of Equazen eye q™ on ADHD symptoms

“Supplementation with PUFA over 15 weeks resulted in significant improvements compared to placebo in parent ratings of core ADHD-related behavioural and cognitive difficulties. These included inattention, hyperactivity and impulsivity, showing medium to large effect sizes and also in ratings of oppositional behaviour”.

Evidence from parent ratings

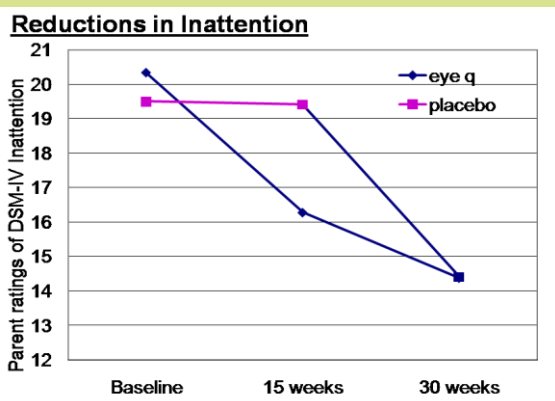
After 15 weeks on Equazen eye q™ in 9 out of 14 ADHD scales of the Conners' Parent Rating Scales (CPRS-L) were significant greater compared to a matched placebo group.

During the 16-30 weeks, when all groups had switched to the active Equazen eye q™ plus micronutrient treatment, the parent behaviour ratings improved significantly on 10 out of 14 scales. The positive response to supplementation in this group was consistent with the active groups' response during the first 15 weeks, particularly in terms of the core symptoms of ADHD which are inattention, hyperactivity and impulsivity.

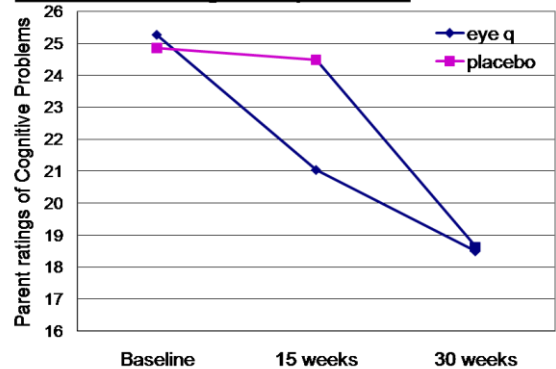
CPRS-L subscales	15 weeks	30 weeks	Global scales	15 weeks	30 weeks
Opposition	✓	✗	ADHD Index	✓	✓
Cognitive Problems/Inattention	✓	✓	Global: Restless/Impulsive	✓	✓
Hyperactivity	✓	✓	Global: Emotional Lability	✗	✗
Anxious-Shy	✗	✗	Global: total	✓	✓
Perfectionism	✗	✓	DSM-IV Inattentive	✓	✓
Social Problems	✗	✓	DSM-IV Hyperactive/Impulsive	✓	✓
Psychosomatic	✗	✗	DSM-IV Total	✓	✓

The active group on Equazen eye q™ displayed improvements in the first 15 weeks and continued to see significant ongoing improvements over 16-30 weeks of treatment on the measures of behaviour and attention as assessed by parents.

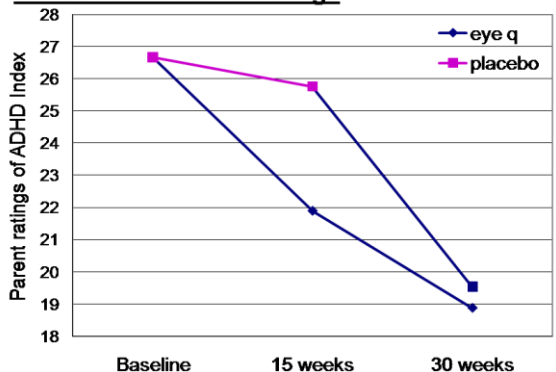
“Overall, 30-40% of children over 15 weeks and 40-50% of children over 30 weeks had improvements >1 SD in scores”.



Reduction in cognitive problems



Reduction in ADHD ratings



Equazen eye q™ supplementation could provide a safe and healthy option for children with ADHD symptoms

There was no benefit derived from a multivitamin/mineral supplement over above the PUFAs. Although they were set at recommended daily doses for children, it is possible that greater quantities are required in clinical populations.

The medium effect sizes observed in the present trial, are comparable with those calculated from a meta-analysis of medication trials.¹ However, there is no known evidence that medication provides any benefits beyond 4 weeks, whereas in the present trial, symptoms continued to improve after 15 weeks of supplementation.

Evidence that a proportion of children with ADHD symptoms might experience reduced symptoms with nutritional supplementation is therefore important for practitioners to consider as a possible treatment adjunct.

1 Schachter HM, Bham B, King J, et al. How efficacious and safe is short-acting methylphenidate for the treatment of attention-deficit disorder in children and adolescents? *CMAJ*. 2001;165:1475-1488.

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