The Oxford-Durham Study: A Randomized, Controlled Trial of Dietary Supplementation With Fatty Acids in Children

Richardson AJ and Montgomery P
(2005) *Pediatrics* 115(5):1360-1366

The objective:

To assess the effect of long-chain polyunsaturated fatty acids (LC-PUFA) in a population of children with developmental coordination disorder (DCD), with associated learning and behavioural difficulties.

The study:

The clinical paper describes a double-blind, placebo-controlled 6-month study, with a one-way crossover design from placebo to active. 117 children (aged 5-12 years) were randomized to receive either the active LC-PUFA treatment (eye q™ [two capsules taken three times daily]) or matching placebo capsules (olive oil). The paper reports on learning and behavioural assessments made at baseline, 3-month and 6-month follow-up.

Before treatment intervention 31% of children had teacher ratings in line with achieving a diagnosis of ADHD (according to DSM-IV criteria). Performance on reading and spelling was approximately 1 year behind chronological age in this population.

Inclusion:

Children were included on the basis of achieving less than the 15th percentile on the Movement Assessment Battery for Children (Movement ABC), and scoring greater than 70 on a full-scale intelligence quotient.

Exclusion:

Children were excluded if they were receiving stimulant medication such as methylphenidate.

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A summary of the key findings from the paper:

Effects of Equazen eye q™ on ADHD - related symptoms

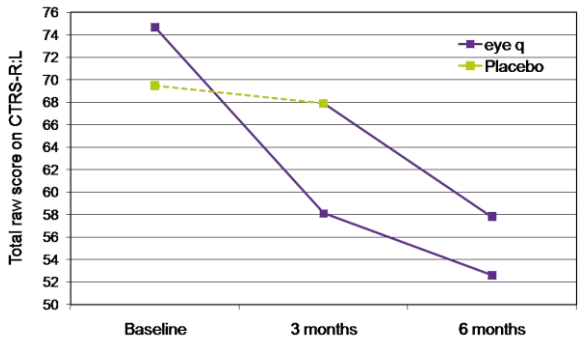
After 3 months, improvements in 11 out of the 13 ADHD scales of the Conners' Teacher Rating Scale (CTRS-L) were significantly greater in the active group, compared to those children on placebo.

Following crossover to eye q™ at 3 months, the placebo group showed improvements during the 3-6 month period that were similar in size to those seen in the active group during the first half of the study.

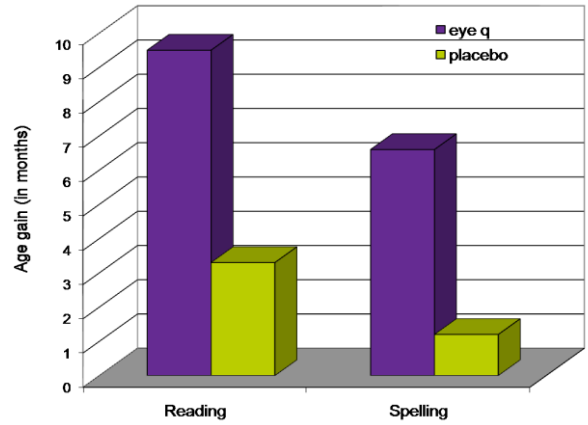
Children taking eye q™ saw a significant reduction from 74.7 to 58.1 on a derived ADHD total raw score from the 52 items of the CTRS-L, whereas the placebo group showed no change in the first 3 months.

The treatment effect size on Conner's ADHD Index rating was 0.55 in the first 3 months, and 0.70 over the 6 months. This is comparable to the average effect size for stimulant medication: 0.78.[1]

ADHD total rating scores at baseline, 3 months and 6 months, by treatment group



Reading and spelling following 3 months of supplementation



CPRS-L subscales		Global scales	
Opposition	✓	Conners' Index	✓
Cognitive Problems	✓	Conners' global restless-impulsive	✓
Hyperactivity	✓	Conners' global emotional lability	✓
Anxious-Shy	✓	Conners' global total	✓
Perfectionism	✗	DSM-IV Inattention	✓
Social Problems	✗	DSM-IV Hyperactivity	✓
		DSM-IV Total ADHD	✓

Effect of Equazen eye q™ on reading age

In the first 3 months of the study, average reading gain for children taking Equazen eye q™ was 9.5 months. This was a highly significant improvement compared to the control group ($p < 0.004$).

Between 3-6 months, children switching from placebo to capsules made an average reading gain of 13.5 months. Those children who had been on Equazen eye q™ from the beginning of the trial continued to make reading gains over and above what would be expected for their chronological ages.

Effect of Equazen eye q™ on spelling age

In the first 3 months of the study, children taking Equazen eye q™ made significant improvements in spelling of an average of 6.6 months, compared to the control group gain of 1.2 months ($p < 0.001$).

Between 3-6 months, the control group who moved to Equazen eye q™ capsules made an average reading gain of over 6 months. Children who had been on Equazen eye q™ for the entire duration of the trial made spelling gains over and above chronological age-standardised scores.

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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