Abstract

Title: Does supplementation with omega 3 improve oxygen uptake among athletes?

Author: Jonna Gustafsson and Maria Bohlin Nygren

Supervisor: Frode Slinde
Examiner: Ingrid Larsson
Programme: Programme in dietetics, 180/240 hp
Type of paper: Bachelor’s thesis in clinical nutrition, 15 hp
Date: May 26, 2015

Background: Previous research has shown that omega 3 fatty acids may improve cardiovascular functions by decreased aggregation and increased red blood cell deformability. This produces an increased blood flow and could have a potential effect on oxygen uptake. Optimal aerobic capacity is a determinant factor of performance within endurance exercise.

Objective: To compile scientific research of the possibility that omega 3 supplementation could improve oxygen uptake among athletes.

Search strategy: The literature research is based on searches in PubMed and Scopus with the terms "Physical Endurance", "Oxygen Consumption", "Fatty Acids Omega 3", "Dietary Supplements", "Exercise", “Fatty Acids Essential”, “Docosahexaenoic Acids”, ”Eicosanoic Acids”, ”Fish Oils”, ”oxygen consumption”, ”maximal oxygen consumption”, ”VO₂ max”, ”athlete”, ”omega-3 supplementation”, ”physical endurance”, ”ω-3”, ”omega-3”, ”Maximal Aerobic Power”, ”Oxygen Uptake”, ”VO2” and “Maximal Aerobic Capacity”.

Selection criteria: Randomized controlled trials (RCT) with an intervention of omega 3 supplementation during three weeks or more were included. Studies on sedentary individuals or with any disease were excluded.

Data collection and analysis: ”Mall för kvalitetsgranskning av randomiserade studier” conducted by SBU was used for the quality review. ”Underlag för sammanvägd bedömning enligt GRADE” designed by the University of Gothenburg was then used to summarize the included studies in terms of evidence.

Main results: The study population consisted of in total 88 individuals. They received daily supplementation of 1,92-6,0g omega 3 fatty acids or placebo during 5-10 weeks. Three of the four included studies did not observe significant result. The fourth study observed a significant improvement of oxygen uptake in the group supplemented with 3,0 g omega 3. All tough no significant improvement was seen in the group with daily supplementation with 6,0 g omega 3.

Conclusions: There is moderately (+++) scientific foundation that supplementation of omega 3 does not improve oxygen uptake among male athletes. No conclusion can be drawn of the effects of oxygen uptake on female athletes as the studies reviewed are performed in men only.