Combining Fish-oil Supplements with Regular Aerobic Exercise Improves Body Composition and Cardiovascular Disease Risk Factors


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Summary:

This research study from Australia evaluated the potential for regular aerobic exercise plus omega-3 fatty acid supplementation from fish-oil to influence cardiovascular disease risk factors as well as body composition with an emphasis on body fat. The test subjects (male plus female combined) had an average age of approximately 50 yrs and were overweight/obese with body mass indices of approximately 34 kg/m². Their body fat content upon initiation of the trial was approximately 43%. The subjects were assigned to one of four groups prior to the twelve week intervention: supplementation with a control oil (sunflower oil) daily, sunflower oil plus exercise, fish oil supplementation daily (1560 mg of DHA +360 mg of EPA for a total DHA/EPA intake via supplementation of 1920 mg/day), or fish oil supplementation plus exercise. For those in the two exercise groups, the subjects were required to walk 3 days per week for 45 minutes at 75% of their age-predicted maximal heart rate. Body composition was assessed by dual-energy X-ray absorptiometry at initiation (time 0) and after the 12 weeks. Cardiovascular risk factors (plasma lipids, blood pressures, and arterial function assessed by ultrasound) were also measured at initiation and after 6 and 12 weeks.

Fish oil supplementation was found to reduce fasting blood plasma triglyceride levels by 14% overall in contrast to the control (sunflower oil) groups where no such lowering was observed. A moderate and significant increase in HDL-cholesterol levels (by 10%) was found also with fish oil supplementation (with or without the exercise intervention). Fish oil supplementation was also found to improve arterial function as measure by endothelium-dependent arterial vasodilation. Arterial compliance was also found to be improved by the exercise intervention. Interestingly, the combination of fish oil supplementation plus exercise provided an additive
effect on body fat mass change with an overall reduction of 1.6 kgm or 4% lower than the initial fat mass (approximately 40 kgm). The authors conclude that the combination of DHA/EPA supplementation along with regular aerobic exercise can significantly reduce body fat while improving selective cardiovascular disease risk factors and overall metabolic health.

Dr. Holub's Comments:

The present study from Australia will likely lead to increased interest in supplementation with fish oil containing DHA/EPA as a complimentary natural health regimen coupled to exercise programs designed for those who are either overweight and/or have risk factors for cardiovascular disease that could well be improved by such combined strategies. It is well established that regular exercise programs can significantly improve cardiovascular disease risk via various mechanisms including the improvement of vascular functioning. This study suggests that increasing omega-3 (DHA/EPA) intakes may further benefit the influence of physical activity. It is noteworthy that the exercise prescription (walking 3 days/week for 45 minutes at 75% of age-predicted maximal heart rate) is a rather moderate exercise prescription. Furthermore, the total intake of DHA/EPA (1920 mg/day) is many-fold above current intakes in most countries (usually less than 200 mg DHA/EPA combined per day except ofr Japan and a few other countries). Certain groups such as the Food and Drug Administration in the US has considered up to 3000 mg DHA/EPA (combined) per day to be generally safe for the adult population. Thus, it would be of much interest to determine from future studies whether more intense exercise programs coupled with higher intakes of DHA/EPA (up to 3000 mg/day) and for longer duration for the 12 weeks studied herein may provide even greater benefits in terms of cardiovascular disease risk factor modifications and body fat changes in future studies.