

The Effects of Fish Oil on Post-Exercise Inflammation

Valarie R. DiMartino, Racine R. Emmons

William Paterson University, Wayne NJ

Exercise induced inflammation is caused by the immune system attempting to heal damaged muscle sarcomeres. Non Steroidal Anti-Inflammatory Drugs (NSAIDs) provide temporary relief, yet fail to inhibit the mechanism of inflammation. Alternative therapies, such as fish oil, are commonly recommended to adults to decrease inflammation related to cardiac stress. **PURPOSE:** The purpose of this investigation was to determine if fish oil supplementation decreased post exercise inflammation. **METHODS:** Inflammation was measured using hs-CRP serum samples. Twelve healthy males (age: 23 ± 2 yrs) reported to the laboratory on four occasions: twice to exercise, and four times for blood collection. Based on baseline hs-CRP values participants were grouped according to the AHA and CDC inflammation guidelines. **RESULTS:** Baseline hs-CRP values were not significantly different before and after supplementation. A trend towards significance in post-exercise condition was observed where hs-CRP values after supplementation were elevated compared to before supplementation (4.45 ± 3.43 mg/L vs. 2.77 ± 2.11 mg/L, respectively; $P=0.063$). A paired samples t-test revealed that at baseline, hs-CRP values were significantly greater prior to supplementation, compared to after supplementation (3.68 ± 2.64 mg/L vs. 2.91 ± 2.15 mg/L, respectively; $P=0.002$). Following supplementation, hs-CRP values following exercise were significantly greater than baseline (prior to exercise) values (4.45 ± 3.43 mg/L vs. 2.91 ± 2.15 mg/L, respectively; $P=0.025$). Following supplementation and exercise hs-CRP values were significantly decreased compared to baseline (no supplementation) values (4.46 ± 3.43 mg/L, 3.68 ± 2.64 mg/L, respectively, $P= 0.001$). The Inflamed group had significantly greater baseline hs-CRP values versus Non-Inflamed group (1.82 ± 0.60 mg/L vs. 6.27 ± 2.04 mg/L, $P = 0.001$). There was no significant difference in inflammation after supplementation and exercise between groups (non-inflamed: 3.48 ± 4.09 mg/L vs. inflamed: 5.82 ± 1.80 mg/L, $P= 0.246$). **CONCLUSION:** Exercise did not induce inflammation across the entire group, nor did it induce inflammation in the "Inflamed" and "Non-Inflamed" groups. One week of supplementation may not be long enough to decrease inflammation induced by exercise. Supported by the William Paterson University Graduate Student Research Scholarship.