

The results of a new meta-analysis shows that long-term supplementation with omega-3s reduce blood markers of inflammation and may reduce the risk of chronic inflammatory-related diseases.

Marine omega-3 fatty acid supplementation decreases inflammatory markers in blood

Inflammation is known to play a role in numerous chronic diseases such as diabetes, cardiovascular disease (CVD), obesity-related diseases, rheumatoid arthritis and other autoimmune diseases. Omega-3 fatty acids have often been linked to benefits regarding these conditions, likely due to their anti-inflammatory function.

In a recent meta-analysis published in the online journal *PLoS One*, scientists reviewed the literature to determine the effect of marine-derived omega-3s on blood levels of several markers of inflammation.

The meta-analysis included 4,601 participants from 68 randomized, controlled trials of healthy subjects, subjects with chronic autoimmune diseases, and subjects with chronic non-autoimmune diseases (ie. cardiovascular disease). Fasting blood levels of the inflammatory markers TNF- α (tumor necrosis factor- α), IL-6 (interleukin-6) and CRP (C-reactive protein) were compiled and analyzed. Researchers also separated studies using omega-3s from supplementation as active treatment with those using omega-3s from dietary intake (fish) and included them into different meta-analyses.

A combined analysis of all study subjects revealed a significant link between omega-3 supplementation and decreased blood levels of CRP and IL-6. Among the subjects with chronic non-autoimmune disease, a longer duration of supplementation related to an even greater reduction in blood levels of IL-6 and TNF- α . A similar finding was observed for IL-6 among healthy subjects. Higher dietary intake of omega-3s did result in lower IL-6 levels, but fish intake alone (without supplementation) did not appear to lower CRP or TNF- α . The benefits of omega-3 supplementation were also more significant in non-obese subjects (BMI <30), particularly in the chronic non-autoimmune disease group.

The results of this study confirm that long-term supplementation of omega-3s from fish oil can effectively lower inflammatory markers and may help reduce the risk of chronic inflammation.

Li K, Huang T, Zheng J, Wu K, Li D (2014) Effect of Marine-Derived n-3 Polyunsaturated Fatty Acids on C-Reactive Protein, Interleukin 6 and Tumor Necrosis Factor α : A Meta-Analysis. *PLoS ONE* 9(2): e88103.