To Boost Athletic Performance do Omega-3 Supplements Works

Among other measures for a healthy lifestyle, omega-3 fatty acid supplements are popular due to their anti-inflammatory and antioxidant effects. Recently, a team of researchers examined the effects of omega-3 supplements when combined with strength training in healthy men.

Study

The study included 30 physically active male participants (aged 18–30 years) who were randomized into either an experimental group, undergoing standardized resistance training three times a week and receiving daily 3150 mg of omega-3 supplements (1620 mg EPA and 1170 mg DHA), or a control group with only resistance training. The study period was eight weeks.

Numerous biomarkers were analyzed in this study. They included inflammatory mediators that indicate immune activation and tissue stress following high-intensity exercise. Their elevation can predict poor exercise recovery and training adaptation. Glutathione and malondialdehyde serve as markers of oxidative capacity, while blood lipids indicate cardiometabolic health and physical fitness.

Brain-derived neurotrophic factor (BDNF), dopamine, and serotonin are biomarkers of neuronal health and function. These are deeply involved in cognitive flexibility, balancing inhibitory and excitatory neurotransmitters, synaptic plasticity that helps build neuronal pathways, and neuromuscular function.

Results

Omega-3 supplements markedly improved physiological markers of exercise recovery and training adaptation after resistance training. They had significant anti-inflammatory effects while also increasing antioxidant capacity. In addition, they improved markers of cardiometabolic risk, neurological function, and motor development.

Lipid Markers

Lipid markers showed an 8% to 10% reduction in 'bad' cholesterol – low-density lipoprotein (LDL) cholesterol and triglycerides – and an 11% rise in 'good' high-density lipoprotein (HDL) cholesterol, suggesting a lower cardiovascular risk.

Animal studies suggest that higher unsaturated fatty acids increase lipid oxidation and inhibit lipid synthesis. Fish oil exerts more potent cholesterol-regulating effects than monounsaturated fatty acids because of its polyunsaturated fats.

Neuromuscular Markers

Neurological markers like BDNF, dopamine, and serotonin also increased by 12–19%. Physical performance improved as shown by increased muscular strength and power. So did speed, agility, and reflexes, compared to the controls.

The higher DHA concentrations enhanced the functional activation of fast-twitch type II muscle fibers and led to improvements in neuromuscular power, reflecting effective neuromuscular adaptation. These improvements may be partly attributed to increased membrane fluidity and enhanced neurotransmitter sensitivity, facilitating faster motor unit recruitment and synaptic efficiency. Omega-3 supplementation also optimized energy metabolism and enhanced mitochondrial function, improving ATP production and boosting cell recovery.

Conclusion

These findings suggest that omega-3 supplements can be combined with strength training to enhance physiological function and physical performance. “This combination may represent a promising strategy for optimizing athletic adaptations and recovery in physically active populations.”

Given the small, homogeneous sample and lack of placebo control, further research should include diverse populations and utilize other physical training platforms to extend these findings and provide greater generalizability.

Source:

https://www.news-medical.net/news/20250625/Do-omega-3-supplements-boost-athletic-performance.aspx