

Fish Oil for Physical Fitness

The Next Best Workout Partner



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Introduction

What supplements do you take to support your fitness goals? Talk to any athlete or visit your favorite fitness website, and you'll get a long list of different capsules and powders that help to support the development of muscle strength, endurance, recovery, and general health. As a naturopathic doctor, I make it my job to know what supplements, backed by science and research, are best to help those looking to enhance their fitness efforts.

When making recommendations for my clients, I usually focus on a healthy diet and lifestyle, which is always the best place to start when it comes to improving and enhancing your athletic ability. In addition to this, I also recommend a variety of fitness-enhancing products, including protein powder, vitamins and minerals, individual amino acids, and electrolytes solutions. While these recommendations are not new to the world of fitness, there is one recommendation I often make that is not typically thought of when it comes to improving your athletic ability: fish oil.

Fish oil is an excellent source of the omega-3 essential fatty acids known as eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), and is a wonderful addition to any fitness regime, due to its influential role in improving athletic performance as well as overall general health.^[1] Omega-3 fatty acids are known as “essential,” because they are needed by the body for numerous physiological functions; however, the body can only make minimal amounts of these fats, making it essential that you get them from food or supplementation.^[1] Typically known for its positive effect on cardiovascular health and mood balance, as well as for its potent anti-inflammatory action, fish oil is also a great way to boost your efforts at the gym, helping you reach your fitness aspirations faster than you can say “long chain polyunsaturated fatty acid.”

So next time you're at the health food store stocking up on your favorite protein powder or branched-chain amino acids, make sure you grab a bottle of high-quality fish oil if you're looking to make the most out of your gym membership. Here are my top 5 reasons why fish oil is the supplement you're missing from your athletic regime.



1. It Supports Muscle Growth

In order to build muscle, we need protein, as it provides the amino acids necessary for muscle protein synthesis. However, as important as protein is, if we lack the ability to incorporate these amino-acid building blocks into our muscle cells, all that protein powder you've stocked up will be for naught.

Fish oil's benefit in muscle building is found in its ability to support insulin's role in muscle protein synthesis. Insulin is a functional protein (similar to a hormone), released by the pancreas into the bloodstream in response to the carbohydrates and proteins we eat. Once released, insulin travels to various bodily tissues, including our muscle cells, which are lined with insulin receptors, allowing amino acids to enter. This signal then instigates the biochemical reactions that increase protein synthesis, and therefore muscle growth.

A recent study of participants aged 25–45 demonstrated that supplementing with 4 g/d of fish oil concentrate, providing a daily dose of 1.86 g EPA and 1.5 g DHA for eight weeks, had a significant increase in the anabolic (muscle-building) response to amino acids and insulin due to an increased activation of the mTOR/p70-S6K signalling pathway, considered integral for muscle protein anabolism and muscle-cell growth.^[2] This research suggests fish oil's supporting role in the relationship between insulin and muscle protein synthesis; it may just be your new best weight-lifting partner!

2. It Works to Prevent Muscle Breakdown

Increases in muscle mass are integral for any athlete looking to become stronger, faster, and more agile in their sport. Maintaining your gains, however, is just as important when it comes to reaching your fitness goals. Our muscles undergo a continuous process of anabolism (building up) and catabolism (breaking down), and if this becomes imbalanced, leaning towards a catabolic state, such as with certain health conditions or prolonged fasting, this can result in the loss of muscle mass and weakness.

According to the research, fish oil appears to decrease muscle protein catabolism, due to EPA's effect on the ubiquitin-proteasome system, which plays a role in the breakdown of muscle, helping to preserve the gains you've made by putting hours in at the gym.^[3]

The anticatabolic effects of fish oil have also been shown to reduce cortisol levels. Cortisol is our stress hormone and, when chronically elevated, it can lead to a breakdown of muscle tissue as well as many other detrimental effects.^[4] Controlling our reactions to stress is integral for both our general health and our fitness.



3. It Increases Muscle Strength

What if I told you that you could get stronger just by taking your fish oil every day? While lifting heavier weights at the gym may not be that simple, a study of almost 3,000 adults (aged 59 to 73 years) showed that the consumption of fatty fish was highly associated with increased grip strength: 0.43 kg in men and 0.48 kg in women for each additional portion of fatty fish consumed per week. Along these same lines, a six-month randomized study

reported that daily fish oil supplementation (1,200 mg EPA + DHA) significantly improved physical performance measured in walking speed.^[5]

Additionally, in a 90-day trial where women were randomly assigned to three groups (strength-training only; strength-training plus fish-oil supplementation [~400 mg EPA + 300 mg DHA]; or fish-oil supplementation for 60 days prior to training, then strength-training plus fish oil supplementation) found that while strength-training alone increased muscle strength, this effect was greater in the groups who were given the supplemental fish oil.

4. It Reduces Exercise-Induced Muscle Damage

If you've ever had a hard workout and suffered muscle pain and soreness as a result, you know the agony of exercise-induced muscle damage. In order to have the gains that got you in the gym in the first place, you need to push your muscles beyond their normal boundaries; however, this also creates microscopic muscle fibre damage. While this is essential to create increases in size and strength, it can also produce soreness and loss of physical function, impairing performance and continuity when it comes to an athlete's training regime.

Typically, nonsteroidal anti-inflammatory drugs (NSAIDs) are prescribed to help alleviate these symptoms and exert their pain-reducing effects by inhibiting the conversion of arachidonic acid (an omega-6 fatty acid) to proinflammatory molecules, which contribute to our pain response.^[6]

When it comes to fish oil, research has shown that omega-3 fatty acid supplementation can actually decrease levels of arachidonic acid within our cell membranes, thus reducing the conversion of this fatty acid to proinflammatory molecules, helping to prevent the onset of exercise-induced muscle damage. So if muscle pain and soreness postworkout are leaving you on the couch more days than not, it might be time to incorporate some fish oil into your daily routine to have you hitting the gym even after your toughest workout.



5. It Strengthens Bone

While muscles are critical for any athletic activity, it's literally our skeletal system that holds it all together, providing the structural framework by which our muscle can function and work towards our athletic gains. Nutritional supplements, including calcium and magnesium, are often used for their bone-supporting abilities, but did you know that omega-3 fatty acids also play a role in bone health?

Research has shown that higher red-blood-cell omega-3 levels may reduce the risk of hip fractures and promote higher bone mineral density as well as positively affect calcium-regulating hormones, helping to keep bones healthy and strong.^[7] *Mooove* over, milk: There's a new healthy bone supplement in town!

We all know that it takes effort to get physically fit and achieve our athletic goals. While there is no substitute for putting in the time it takes to get into top physical shape, there are many products and supplements that can help you reach your goals by using science to enhance our own physiology. Protein smoothies, creatine powder, and other commonly known fitness-enhancing products may already be part of your fitness regime; however, you might want to make some room in your fridge for fish oil to further support your fitness and general health.

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