TOA

TENNESSEE ORTHOPAEDIC ALLIANCE

OMEGA-3 FATTY ACIDS FOR MUSCLE REPAIR IN SPORTS

Omega-3 fatty acids are important for both performance and recovery. They are powerful antioxidants that work to reduce inflammation and oxidative stress. They also support brain and eye health, which are essential for cognition and coordination. They help the recovery process by reducing the occurrence of delayed onset muscle soreness (DOMS). Omega-3s also support the cardiovascular system, immune system, and overall health.

THREE MAIN TYPES

alpha-Linolenic Acid (ALA)
ALA comes from plant sources such as flax, chia, nuts, seeds & vegetable oils; Can be converted to EPA and DHA, but the process is very inefficient

Eicosatetraenoic Acid (EPA)
EPA comes from fatty fish and shellfish; Important for total health and inflammation reduction; Can be converted into DHA

Docosahexaenioc Acid (DHA)
DHA comes from fatty fish and shellfish; Brain and eye health and development; Inflammation reduction

EPA and DHA should be the omega-3 fats prioritized in a nutrition intervention, especially in terms of overall brain health and neuroprotection. Focus on adding fatty fish and shellfish into your nutrition plan.

Food Sources of DHA and EPA

COOKED SEAFOOD 3 OZ PORTION	MG PER SERVING DHA	EPA
Atlantic Salmon, farm-raised	1240 mg	590 mg
Atlantic Salmon, wild	1220 mg	350 mg
Atlantic Herring	940 mg	770 mg
Rainbow Trout, wild	440 mg	400 mg
Canned Tuna	170 mg	20 mg
Oysters	230 mg	30 mg
Shrimp	120 mg	120 mg
Scallops	90 mg	60 mg

*Taken from the USDA's FoodData Central

FUELING CONSIDERATIONS

- According to the American Heart Association, adults should aim for at least 2 fatty fish meals per week.
- The Academy of Nutrition & Dietetics recommends at least 500 mg of EPA + DHA daily for adults.
- As established by the National Academy of Medicine, the Adequate Intake (AI) for ALA is 1.1 g and 1.6 g for adult females and males respectively.
- Note: While specific guidelines for athletes have not yet been established, at least 2-4 grams of Omega-3s daily is a common recommendation for athletes.
- A 2018-2019 study of nearly 1500 NCAA Division I student athletes from across the US showed an average consumption of less than 150 mg of EPA + DHA/ day, far below most recommendations.

THE O6:O3 RATIO & INFLAMMATION

Omega-3 and Omega-6 fats are essential nutrients. Recently, Omega-6s have been scrutinized for being inflammatory. Omega-6 intake has increased significantly in Americans over the last several decades as it is generally a more cost-efficient fat source in many food items on the market. Omega-3s and Omega-6s compete for the same enzymes in the body. It is suspected that when consumption of Omega-6 is greater than Omega-3s, inflammation can occur as a result. For optimal health and athletes undergoing intensive training, 1 gram of Omega-3s should be consumed for every 4 grams of Omega-6s.

OMEGA-3 SUPPLEMENT CONSIDERATIONS

Current evidence suggests:

- The NCAA amended Nutritional Supplements Bylaw 16.5.2.7 in January 2019 to include omega-3 fatty acid supplements as permissible, allowing Division I institutions to provide these supplements to their athletes
- A baseline dosage of 1 g combined DHA + EPA is appropriate for most athletes
- A dose of 2 g DHA + 1 EPA may be appropriate for athletes looking to optimize brain health
- Adverse outcomes have not been seen with long-term EPA + DHA supplemental intakes of up to 5 grams
- As with all supplements, only use 3rd party tested products to ensure purity and label accuracy

Note: Division II and III institutions should consult with their respective compliance department before providing supplementation

WHO MIGHT BENEFIT FROM A SUPPLEMENT?

- Athletes with generally low fish and seafood intake
- High-impact athletes with history of concussions
- Athletes with historically high omega-6 intake
- Athlete undergoing surgery or injury requiring immobilization

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