OMEGA-3 FISH OIL

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Omega 3 oils are long chain unsaturated fatty acids with the first double bond on carbon 3 or 'Omega position' 3, hence, 'Omega 3'. We won't dig further into the organic chemistry because it has literally zero relevance to your day to day life.

You need both O3 and O6 fatty acids in your diet because your body can't make them for itself. Therefore, they are described as 'essential' fatty acids and the deficiency of either may produce negative health consequences including growth disorders and dermatitis (inflammation of the skin).

You can get both from your diet: Omega 6 being present in nuts, seeds, grainbased products like breads and cereals and in particular seed oils such as sunflower, rapeseed and corn oils; Omega 3 is derived instead from animal products; including ruminants (animals that eat grass) beef, lamb, goat, their organ meats and dairy products; as well as oily fish such as salmon and mackerel. Omega 3 can also be found in plants like flax but exists in a form that isn't readily utilised and needs to be converted by the body to a different structure - it is better to feed these plant sources to an animal so that they can do the conversion process for you: eggs can be 'Omega 3 enriched' by feeding chickens flax seed.

The most potent sources of Omega 3 fatty acids are seafood. Herring, Mackerel and Wild Salmon contain the most Omega 3 per 100g (>1500mg) of any fish. Tuna, Sardines, Swordfish and Trout are also good sources (>1000mg). It is recommended that two portions of oily fish should be consumed each week to offset imbalances in Omega 6 to Omega 3 ratios and to gain the cardiovascular benefits associated with eating oily fish.

Both Omega 3 and Omega 6 fatty acids serve important biological roles in various processes but generally O6 is 'pro-inflammatory' and O3 is 'anti-inflammatory'. Inflammation is a normal and useful process for healing and recovery from training; but an excess of inflammation is associated with pain and disease. The two oil types compete with each other for enzymes meaning that excess intake of one can lead to further deficiency of the other; compounding the problem. Where O6 fats are present in greater quantities than O3 fats, DOMS can be worsened and recovery longer.

O3 has been demonstrated to produce anti-coagulant effects - think 'blood thinning' - which, combined with the anti-inflammatory properties makes it useful for the prevention, severity and recurrence of cardiac health issues (Swanson et al., 2012). Anecdotally, high dose (4000mg) Omega 3 supplementation significantly reduces DOMS from big CrossFit workouts like "Murph" and "Linda".

COOH

docosahexaenoic acid





eicosapentaenoic acid

Due to misleading public health guidance over the past 60 years - encouraging avoidance of potential O sources such as butter and other animal fats in favour of cheaper seed oils and margarines (as well as a general trend away from animal fats) there is estimated to be an imbalance of O6 to O3 at a ratio of around 6:1. Ideally, this ratio would be 1:1 and some studies suggest imbalances as high as 20:1 exist in modern Westernised diets.

The important fats in fish oil are DHA and EPA (docosahexaenoic and eicosapentaenoic acid if you want to boss pub quizzes). The CrossFit Glasgow Store stocks Puori tablets as they had the highest concentration we could find of these fats per dosage. We checked. Extensively. A single serving contains 2000mg of O3 fish oil and 87% of this is DHA and EPA. The capsules are certified by various bodies to be contaminant free and are enriched with vitamin E so that they don't become rancid as quickly as other brands, which can create a fishy aftertaste. They can be taken every day to supplement a normal diet and should help to improve your recovery time after intense training.



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References:

Swanson, D., Block, R. and Mousa, S.A. Omega-3 Fatty Acids EPA and DHA: Health Benefits Throughout Life. Advances in Nutrition (2012). Jan; 3(1): 1–7