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Fish oil supplementation is known to result in an increase in plasma omega-3 fatty acid content, particularly eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). Alpha linolenic acid (ALA), an omega-3 fatty acid found in plants, is the direct precursor of EPA and DHA and should show effects similar to fish oil. Until now, however, this has been challenged because of reported low conversion of ALA into DHA. A recent study provides evidence that the ALA supplemented from flaxseed oil is effectively converted to EPA and DHA and accumulated in human blood cells.

FLAXSEED OIL AND FISH OIL RAISE OMEGA-3 FATTY ACID LEVELS IN HUMAN BLOOD CELLS

Recently reported in the American Journal of Clinical Nutrition, researchers designed a clinical trial in which flax oil, fish oil, and sunflower oil (placebo group) capsules were given to 62 firefighters. The firefighters were randomly divided into 6 experimental groups receiving 1.2, 2.4, or 3.6 grams of flax oil/day; 0.6 or 1.2 grams of fish oil/day; or 1 gram of sunflower oil/day for 12 weeks. Blood was drawn every 2 weeks, and the total phospholipid fatty acid composition of red blood cells was determined.

As anticipated, fish oil produced a rapid increase in DHA and total omega-3 fatty acids. The consumption of either 2.4 or 3.6 grams of flax oil/day was sufficient to significantly increase blood levels of ALA, EPA, and DPA (docosapentaenoic acid) fatty acid content.

The consumption of ALA-enriched supplements for 12 weeks was sufficient to elevate blood levels of EPA and docosapentaenoic acid content, which shows the effectiveness of ALA conversion and accumulation into red blood cells. The amounts of ALA required to obtain these effects are amounts that are easily achieved in the general population by dietary modification or by modest dosages of omega-3 rich foods such as flax oil.

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