

GOD LIVER OIL

What does it do?

Fish oil contains EPA (eicosapentanoic acid) and DHA (docosahexanoic acid); both are omega-3 fatty acids. Most fish oil supplements are 18% EPA and 12% DHA, or a total of 30% omega-3. These special omega-3 fatty acids, unlike other omega-3 fatty acids, keep blood triglycerides in check (high triglycerides are generally linked with increased risk of heart disease) and inhibit the progression of atherosclerosis.¹ EPA and DHA keep blood from clotting too quickly. They also have anti-inflammatory activity. As a result, fish oil is used to help people with various inflammatory conditions, including Crohn's disease.² Fish oil may help people with a wide variety of disorders, including chronic kidney diseases.³ 4 Chronic obstructive pulmonary disease may be less likely to develop in those with a greater intake of omega-3 fatty acids.⁵

Due to its effects on prostaglandin metabolism, fish oil has helped some people with Raynaud's phenomenon in double-blind research.⁶ Schizophrenia is linked with abnormalities in fatty acid metabolism, and preliminary research has found fish oil helpful in people with schizophrenia.⁷

DHA is essential for vision in infants. Fish oil may also help prevent some types of cancer in animals ⁸ ⁹ ¹⁰ and humans,¹¹ but this evidence remains preliminary. Preliminary evidence shows that fish oil may help prevent cardiac arrhythmias.¹² Finally, fish oil modulates immune function,¹³ though details remain unclear.

Where is it found?

EPA and DHA are found in mackerel, salmon, herring, sardines, sable fish (black cod), anchovies, albacore tuna, and wild game. Cod liver oil contains large amounts of EPA and DHA.

Fish oil has been used in connection with the following conditions

- Primary Crohn's disease (enteric-coated, free-fatty-acid form of fish oil)
- High blood pressure
- High triglycerides
- Rheumatoid arthritis
- Ulcerative colitis
- Secondary Atherosclerosis
- Bipolar disorder
- Eczema
- Kidney disease
- Lupus (SLE)
- Osteoporosis (in combination with evening primrose oil)
- Phenylketonuria (if PUFA deficient)
- Psoriasis
- Raynaud's disease
- Asthma
- Chronic obstructive pulmonary disease (COPD)
- Diabetes
- Dysmenorrhea (painful menstruation)
- Migraine headaches
- Osteoarthritis
- Osteoporosis
- Photosensitivity

Who is likely to be deficient?

To a very limited extent, omega-3 fatty acids from vegetable sources, such as flaxseed oil, can convert to EPA. Most doctors believe most people do not eat enough EPA and DHA. So-called primitive diets have much higher levels than modern diets.

How much is usually taken?

Most of the research with fish oil has given people with a variety of health conditions at least 3 grams of EPA plus DHA—an amount that may require 10 grams of fish oil, because most fish oil contains only 18% EPA and 12% DHA. A lesser, ideal amount for healthy people has not been determined.

The health benefits for individuals with Crohn's disease have been reported with a special enteric-coated, "free fatty acid" form of EPA/DHA taken from fish oil. The enteric-coated free fatty acid form has also been reported not to cause the gastrointestinal symptoms that often result from taking regular fish oil supplements, again suggesting unique benefit.¹⁴

The maximum tolerated amount of fish oil in people experiencing cancer-related weight loss was about 21 grams per day in one study.¹⁵ However, in people who do not have cancer, the maximum tolerated amount may be different.

Are there any side effects or interactions?

While those with heart disease and diabetes often benefit from fish oil,¹⁶ ¹⁷ both groups should check with their doctor before taking more than 3 or 4 grams of fish oil for several months. Elevations in blood sugar and cholesterol levels may occur in some individuals who take fish oil.¹⁸ The increase in blood sugar appears to be related in part to the amount of fish oil used.¹⁹ While supplementation with fish oil consistently lowers triglycerides, the effect of fish oil on LDL cholesterol varies, and sometimes the levels actually increase.²⁰

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COD LIVER OIL

EPA and DHA reduce blood clotting, so people taking them sometimes get nose bleeds.²¹ In some populations, consumption of high amounts of omega-3 fatty acids found in fish oil has been associated with increased risk of one type of stroke.²²

Due to its very high levels of vitamin A and vitamin D, cod liver oil should not be taken by women who are or who could become pregnant before consulting a doctor. Other adults should consult with a doctor before taking cod liver oil (or other supplements) containing more than 25,000 (7,500 mcg) of vitamin A per day or 800 IU of vitamin D per day.

Fish oil is easily damaged by oxygen, so a few milligrams or IUs of vitamin E should be included in all fish oil supplements.²³ In addition, people who supplement with fish oil should take additional vitamin E supplements (several hundred IUs) to protect EPA and DHA within the body from oxidative damage.²⁴ Some people who supplement several grams of fish oil will experience gastrointestinal upset and burp up a “fishy” smell. These may be side effects of oxidation (i.e. rancidity) of the fish oil. Using fresh oil with additional vitamin E may reduce these side effects.

Some evidence suggests that adding vitamin E to EPA/DHA may prevent the fish oil-induced increase in serum glucose.²⁵ Similarly, the impairment of glucose tolerance sometimes caused by the omega-3 fatty acid has been prevented by the addition of half an hour of moderate exercise three times a week.²⁶

People who take fish oil containing EPA and DHA and who also take 15 grams of pectin per day have been reported to have reductions in LDL cholesterol.²⁷ This suggests that pectin may overcome the occasional problem of increased LDL cholesterol from fish oil supplementation. The LDL-cholesterol raising effect of EPA and DHA may also be successfully prevented by taking garlic supplements (or presumably including garlic in the diet) along with EPA and DHA.²⁸

Certain medications may interact with fish oil (EPA and DHA) and cod liver oil. Refer to the drug interactions summary for a list of those medications. It is recommended you discuss the use of fish oil (EPA and DHA) and cod liver oil and your current medication(s) with your doctor or pharmacist.

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