Fish oil

What is it?

Fish oil can be obtained from eating fish or by taking supplements. Fish that are especially rich in the beneficial oils known as omega-3 fatty acids include mackerel, tuna, salmon, sturgeon, mullet, bluefish, anchovy, sardines, herring, trout, and menhaden. They provide about 1 gram of omega-3 fatty acids in about 3.5 ounces of fish.

Fish oil supplements are usually made from mackerel, herring, tuna, halibut, salmon, cod liver, whale blubber, or seal blubber. Fish oil supplements often contain small amounts of vitamin E to prevent spoilage. They might also be combined with calcium, iron, or vitamins A, B1, B2, B3, C, or D.

Fish oil is used for a wide range of conditions. It is most often used for conditions related to the heart and blood system. Some people use fish oil to lower blood pressure or triglyceride levels (fats related to cholesterol). Fish oil has also been tried for preventing heart disease or stroke. The scientific evidence suggests that fish oil really does lower high triglycerides, and it also seems to help prevent heart disease and stroke when taken in the recommended amounts. Ironically, taking too much fish oil can actually increase the risk of stroke.

Fish may have earned its reputation as “brain food” because some people eat fish to help with depression, psychosis, attention deficit-hyperactivity disorder (ADHD), Alzheimer’s disease, and other thinking disorders.

Some people use fish oil for dry eyes, glaucoma, and age-related macular degeneration (AMD), a very common condition in older people that can lead to serious sight problems.

Women sometimes take fish oil to prevent painful periods; breast pain; and complications associated with pregnancy such as miscarriage, high blood pressure late in pregnancy, and early delivery.

Fish oil is also used for diabetes, asthma, developmental coordination disorders, movement disorders, dyslexia, obesity, kidney disease, weak bones (osteoporosis), certain diseases related to pain and swelling such as psoriasis, and preventing weight loss caused by some cancer drugs.

Fish oil is sometimes used after heart transplant surgery to prevent high blood pressure and kidney damage that can be caused by the surgery itself or by drugs used to reduce the chances that the body will reject the new heart. Fish oil is sometimes used after coronary artery bypass surgery. It seems to help keep the blood vessel that has been rerouted from closing up.

When fish oil is obtained by eating fish, the way the fish is prepared seems to make a difference. Eating broiled or baked fish appears to reduce the risk of heart disease, but eating fried fish or fish sandwiches not only cancels out the benefits of fish oil, but may actually increase heart disease risk.

Two of the most important omega-3 fatty acids contained in fish oil are eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). See separate listings for EPA and DHA.

How effective is it?

Natural Medicines Comprehensive Database rates effectiveness based on scientific evidence according to the following scale: Effective, Likely Effective, Possibly Effective, Possibly Ineffective, Likely Ineffective, Ineffective, and Insufficient Evidence to Rate.

The effectiveness ratings for FISH OIL are as follows:

Effective for...

- **High triglycerides.** High triglycerides are associated with heart disease and untreated diabetes. To reduce the risk of heart disease, doctors believe it is important to keep triglycerides below a certain level. Doctors usually recommend increasing physical activity and restricting dietary fat to lower triglycerides. Sometimes they also prescribe drugs such as gemfibrozil (Lopid) for use in addition to these lifestyle changes. Now researchers believe that fish oil, though not as effective as gemfibrozil, can reduce triglyceride levels by 20% to 50%. One particular fish oil supplement called Lovaza has been approved by the FDA to lower triglycerides. Lovaza contains 465 milligrams of EP and 375 milligrams of DHA in 1-gram capsules.

Likely effective for...

- **Heart disease.** Fish oil may be effective in keeping people with healthy hearts free of heart disease. People who already have heart disease may be able to lower their risk of dying from heart disease by taking fish oil. Though not all researchers agree, some investigators believe that fish oil may be even more effective in reducing death from heart attacks than a group of commonly used cholesterol-lowering drugs called “statins.”

Possibly effective for...

- **High blood pressure.** Fish oil seems to produce modest reductions in blood pressure in people with high blood pressure. The omega-3 fatty acids in fish oil seem to be able to expand blood vessels, and this brings blood pressure down.
- **Rheumatoid arthritis.** Fish oil alone, or in combination with the drug naproxen (Naprosyn), seems to help people with rheumatoid arthritis get over morning stiffness faster. People who take fish oil can sometimes reduce their use of pain medications such as nonsteroidal anti-inflammatory drugs (NSAIDs).
- **Menstrual pain (dysmenorrhea).** Taking fish oil alone or in combination with vitamin B12 seems to improve painful periods and reduce the need for pain medications such as nonsteroidal anti-inflammatory drugs (NSAIDs).
- **Attention deficit-hyperactivity disorder (ADHD) in children.** Taking fish oil seems to improve thinking skills and behavior in 8 to 12 year-old children with ADHD.
- **Raynaud’s syndrome.** There’s some evidence that taking fish oil can improve cold tolerance in some people with the usual form of Raynaud’s syndrome.
Insufficient evidence to rate effectiveness for...

- **Endometrial cancer**. There is some evidence that women who regularly eat about two servings of fatty fish per week have a reduced risk of developing endometrial cancer.

- **Age-related eye disease (age-related macular degeneration, AMD)**. There is some evidence that people who eat fish more than once per week may have a lower risk of developing age-related macular degeneration.

- **Reducing the risk of blood vessel re-blockage after heart bypass surgery or “balloon” catheterization (balloon angioplasty)**. Taking fish oil before surgery may decrease the rate of re-blockage up to 26% when given for one month before the procedure and continued for one month after surgery. When taken for less than one month before angioplasty, fish oil doesn't help protect the blood vessels.

- **Recurrent miscarriage in pregnant women with antiphospholipid syndrome**. Taking fish oil seems to prevent miscarriage in pregnant women with a condition called antiphospholipid syndrome.

- **High blood pressure and kidney problems after heart transplant**. Taking fish oil seems to preserve kidney function and reduce the rise in blood pressure after heart transplantation.

- **Damage to the kidneys and high blood pressure caused by taking a drug called cyclosporine**. Cyclosporine is a medicine used to prevent organ rejection after an organ transplant. Fish oil might help reduce some of the unwanted side effects of treatment with this drug.

- **Movement disorder in children (dyspraxia)**. Taking fish oil orally, in combination with evening primrose oil, thyme oil, and vitamin B12, seems to improve movement disorders in children with dyspraxia.

- **Developmental coordination disorder**. A combination of fish oil (80%) and evening primrose oil (20%) seems to improve movement disorder when given to children age 5-12 years with developmental coordination disorder. However, it doesn't seem to improve motor performance.

- **Preventing blockage of grafts used in kidney dialysis**. Taking fish oil orally seems to help prevent clot formation in hemodialysis catheters.

- **Psoriasis**. There is some evidence that administering fish oil intravenously (by IV) can decrease severe psoriasis symptoms. However, it doesn't seem to have any effect on psoriasis.

- **High cholesterol**. There is interest in using fish oil in combination with “statin” drugs for some people with high cholesterol. However, taking fish oil might interfere with statin treatment, but early studies show this is not a problem, at least with the statin called simvastatin. Fish oil may lower cholesterol by keeping it from being absorbed in the intestine. There is some evidence that using vitamin B12 along with fish oil might help lower cholesterol even further.

- **Coronary artery bypass surgery**. Taking fish oil seems to prevent coronary artery bypass grafts from re-closing following surgery.

- **Cancer-related weight loss**. Taking a high dose (7.5 grams per day) of fish oil seems to slow weight loss in some cancer patients. Scientists believe these patients eat more because the fish oil is fighting depression and improving their mood.

- **Asthma**. Some research suggests fish oil may lower the occurrence of asthma in infants and children when taken by women during pregnancy. Some research suggests fish oil seems to improve airflow, reduce cough, and lower the need for medications in some children with asthma. However, more research is needed to provide the same benefit for adults.

Possibly ineffective for...

- **Gum infection (gingivitis)**.
- **Liver disease**.
- **Leg pain due to blood flow problems (claudication)**.
- **Preventing migraine headaches**.
- **Preventing muscle soreness caused by physical exercise**.
- **Breast pain**.
- **Skin rashes caused by allergic reactions**.
- **Stomach ulcers**.

Likely ineffective for...

- **Type 2 diabetes**. Taking fish oil doesn’t seem to lower blood sugar in people with type 2 diabetes. However, fish oil can provide some other benefits for people with diabetes, such as lowering blood fats called triglycerides.

Insufficient evidence to rate effectiveness for...

- **Allergies**. Some research suggests that mothers who take fish oil supplements during the late stages of pregnancy may lower their children’s risk of developing allergies.
- **Alzheimer’s disease**. There is some preliminary evidence that fish oil may help prevent Alzheimer’s disease. But it doesn’t seem to improve thinking skills for most people who already have mild-to-moderate Alzheimer’s disease.
Bipolar disorder: Taking fish oil might increase some of the symptoms of this condition.

Fish oil might increase the risk of bleeding. Some preliminary clinical research also indicates that taking fish oil along with an allergy medication might increase the risk of developing cataracts.

Crohn's disease: Research studies into the effects of fish oil on Crohn's disease have produced conflicting results.

Prediabetes. Early studies suggest that fish oil may help prevent prediabetes from advancing to type 2 diabetes. However, more research is needed to confirm these findings.

Infant development. There is some evidence that mothers who take 4 grams of fish oil daily during the last half of pregnancy help improve cognitive development by some measures, but not others. At age 2.5 years, these children seem to have better hand and eye coordination, but reasoning, social, motor, and speech skills are not significantly improved.

Ulcerative colitis. Research studies into the effects of fish oil on ulcerative colitis have produced conflicting results.

Pregnancy complications. There is some evidence that taking fish oil during the last ten weeks of pregnancy can help prevent pre-eclampsia. However, fish oil doesn’t seem to help prevent high blood pressure during pregnancy.

Prematurity. Baby formula that has been fortified with fatty acids from fish oil and borage seems to improve growth and the development of the immune system in premature infants, especially boys.

Salicylate intolerance. Some limited research suggests that taking fish oil might improve symptoms of salicylate intolerance such as asthma attacks and itching.

Schizophrenia. There is one report of fish oil improving schizophrenia in a pregnant woman.

Systemic lupus erythematosus (SLE). Research shows conflicting results. Some studies suggest that fish oil helps the symptoms of SLE, while others show no effect.

Irregular heartbeat affecting the ventricles (ventricular arrhythmias). Research studies into the effect of fish oil on ventricular arrhythmias have produced conflicting results.

Improving night vision in children with a disorder called dyslexia. Children with dyslexia who take fish oil seem to be significantly better able to adapt to the dark.

Other conditions.

More evidence is needed to rate fish oil for these uses.

**How does it work?**

A lot of the benefit of fish oil seems to come from the omega-3 fatty acids that it contains. Interestingly, the body does not produce these fatty acids. Instead, can the body make omega-3 fatty acids from omega-6 fatty acids, which are common in the Western diet. A lot of research has been done on EPA and DHA, two types of omega-3 acids that are often included in fish oil supplements.

Omega-3 fatty acids reduce pain and swelling. This may explain why fish oil is likely effective for psoriasis and dry eyes. These fatty acids also prevent the blood from clotting easily. This might make fish oil helpful for some heart conditions.

**Are there safety concerns?**

Fish oil is **LIKELY SAFE** for most people, including pregnant and breast-feeding women, when taken in low doses (3 grams or less per day). There are some safety concerns when fish oil is taken in high doses. Taking more than 3 grams per day might keep blood from clotting and can increase the risk of bleeding.

High doses of fish oil might also reduce the immune system’s activity, reducing the body’s ability to fight infection. This is a special concern for people taking medications to reduce their immune system’s activity (organ transplant patients, for example) and the elderly.

Only take high doses of fish oil while under medical supervision.

Fish oil can cause side effects including belching, bad breath, heartburn, nausea, loose stools, rash, and nosebleeds. Taking fish oil supplements with meals or freezing them can often decrease these side effects.

Consuming large amounts of fish oil from some DIETARY sources is **POSSIBLY UNSAFE**. Some fish meats (especially shark, king, sword, and salmon) can be contaminated with mercury and other industrial and environmental chemicals, but fish oil supplements typically do not.

**Special precautions & warnings:**

**Liver disease:** Fish oil might increase the risk of bleeding.

**Fish or seafood allergy:** Some people who are allergic to seafood such as fish might also be allergic to fish oil supplements. There is some preliminary evidence showing how likely people with seafood allergy are to have an allergic reaction to fish oil; however, until more is known advise people with fish or seafood allergy to use fish oil supplements cautiously.

**Bipolar disorder:** Taking fish oil might increase some of the symptoms of this condition.
Be cautious with this combination.

Birth control pills (Contraceptive drugs)

There is some evidence that birth control pills might interfere with the triglyceride-lowering effects of fish oil.

Some of these drugs include ethinyl estradiol and levonorgestrel (Trishasil), ethinyl estradiol and norethindrone (Ortho-Novum 1/35), and others.

Medications for high blood pressure (Antihypertensive drugs)

Using fish oil with drugs that lower blood pressure can increase the effects of these drugs and may lower blood pressure too much.

Some medications for high blood pressure include captopril (Capoten), enalapril (Vasotec), losartan (Cozaar), valsartan (Diovan), amlopidine (Norvasc), hydrochlorothiazide (HydroDIURIL), and furosemide (Lasix), and many others.

Orlistat (Xenical, Alli)

Orlistat (Xenical, Alli) might keep the beneficial fatty acids in fish oil from being absorbed by the body. Taking fish oil and orlistat (Xenical, Alli) at least 2 hours apart may keep this from happening.

Minor

Be watchful with this combination.

Medications that slow blood clotting (Anticoagulant / Antiplatelet drugs)

Using fish oil with medications that slow clotting may cause bleeding.

Some of these drugs include aspirin, clopidogrel (Plavix), dalteparin (Fragmin), dipyridamole (Persantine), enoxaparin (Lovenox), warfarin (Coumadin), and others.

Are there interactions with herbs and supplements?

Herbs and supplements that might slow blood clotting

High doses of fish oil seem to slow blood clotting. Taking fish oil with other herbs that slow clotting might cause bleeding in some people. These herbs include angelica, clove, danshen, garlic, ginger, ginkgo, Panax ginseng, red clover, turmeric, willow, and others.

Vitamin E

Fish oil can reduce vitamin E levels. Researchers aren't sure whether fish oil keeps vitamin E from being absorbed from food or whether it causes the body to use up vitamin E faster than it should.

Are there interactions with foods?

There are no known interactions with foods.

What dose is used?

The following doses have been studied in scientific research:

**BY MOUTH:**

- For high triglycerides: 1-4 grams/day of fish oil.
- For high blood pressure: Either 4 grams of fish oil or fish oil providing 2.04 grams of EPA and 1.4 grams of DHA per day.
- For atrial fibrillation (one of the chambers of the heart doesn’t empty properly and this increases the risk of blood clot formation): Eating tuna or baked or broiled fish providing omega-3 fatty acids (fish oil) one or more times per week seems to reduce the risk of atrial fibrillation in patients aged 65 or older compared to consuming fish once per month or less. But there is no benefit from eating fried fish or a fish sandwich.
- For kidney problems related to using cyclosporine to prevent organ transplant rejection: 12 grams/day containing 2.2 grams EPA and 1.4 grams DHA.
- For reducing the overall risk of death and risk of sudden death in patients with coronary heart disease: Fish oil providing 0.3-6 grams of EPA with 0.6 to 3.7 grams of DHA.
- For asthma in children: Fish oil providing 17-26.8 mg/kg EPA and 7.3-11.5 mg/kg DHA for reducing symptoms. Maternal ingestion of fish oil 4 grams daily, providing 32% EPA and 23% DHA with tocopherol, during late-phase pregnancy has been used for preventing the development
Fish Oil

Other names


Methodology

To learn more about how this article was written, please see the Natural Medicines Comprehensive Database methodology (http://www.naturaldatabase.com/methodology.html).

References

To see all references for the Fish oil page, please go to http://www.nlm.nih.gov/medlineplus/druginfo/natural/993.html.


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