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## Omega-3 fatty acids for mood disorders

POSTED AUGUST 03, 2018, 6:30 AM



[David Mischoulon, MD, PhD](#)

Contributor

Omega-3 fatty acids are found primarily in fish oil and certain marine algae. Because depression appears less common in nations where people eat [large amounts of fish](#), scientists have investigated whether fish oils may prevent and/or treat depression and other mood disorders. Two omega-3 fatty acids — eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) — are thought to have the most potential to benefit people with mood disorders.



### How might omega-3s improve depression?

Different mechanisms of action have been proposed. For example, omega-3s can easily travel through the brain cell membrane and interact with mood-related molecules inside the brain. They also have anti-inflammatory actions that may help relieve depression.

More than 30 clinical trials have tested different omega-3 preparations in people with depression. Most studies have used omega-3s as add-on therapy for people who are taking prescription antidepressants with limited or no benefit. Fewer studies have examined omega-3 therapy alone. Clinical trials typically use EPA alone or a combination of EPA plus DHA, at doses from 0.5 to 1 gram per day to 6 to 10 grams per day. To give some perspective, 1 gram per day would correspond to eating three salmon meals per week.

Meta-analyses (research that combines and analyzes results of multiple studies) generally suggest that the omega-3s are effective, but the findings are not unanimous because of variability between doses, ratios of EPA to DHA, and other study design issues. The most effective preparations appear to have at least 60% EPA relative to DHA. While DHA is thought to be less effective as an antidepressant, it may have protective effects against suicide. Recent work at Massachusetts General Hospital and Emory University suggests that depressed individuals who are overweight and have elevated inflammatory activity may be particularly good candidates for EPA treatment.

Children and adolescents with depression may also benefit from omega-3 supplementation. At Harvard, there is [a large study underway](#) examining whether omega-3 supplementation (alone or in combination with vitamin D) can prevent depression in healthy older adults.

### Omega-3s for other mental health conditions

Omega-3s have been studied in various mood disorders, such as postpartum depression, with some promising results. In bipolar disorder (manic depression), the omega-3s may be most effective for the depressed phase rather than the manic phase of the illness. The omega-3s have also been proposed to alleviate or prevent other psychiatric conditions including schizophrenia, borderline personality disorder, obsessive compulsive disorder, and attention deficit disorder. However, there is still not enough evidence to recommend the omega-3s in these conditions.

### What dose of omega-3s is beneficial?

Doses for depression range from less than 1 g/day to 10 g/day, but most studies use doses between 1 and 2 g/day. In my practice, I recommend 1 to 2 g/day of an EPA+DHA combination, with at least 60% EPA, for major depression. I am more cautious in patients with bipolar depression, because the omega-3s may bring on mania, as can most antidepressants. In these individuals, I recommend using omega-3 cautiously, and preferably in combination with a prescription mood stabilizer.

### Side effects and other safety considerations

Omega-3s are generally safe and well tolerated. Stomach upset and “fishy taste” have been the most common complaints, but they are less frequent now thanks to manufacturing methods that reduce impurities. Past concerns about omega-3s increasing the risk of bleeding have been largely disproven, but caution is still advised in people taking blood thinners or who are about to undergo surgery. As mentioned, caution is needed in people with bipolar disorder to prevent cycling to mania. Because omega-3s are important to brain development, and pregnancy depletes omega-3 in expectant mothers, supplementation should theoretically benefit pregnant women and their children. Fish consumption in pregnancy is supported by the FDA, but because we do not have long-term data on safety or optimal dosing of omega-3s in pregnancy, expectant mothers should consider omega-3 supplements judiciously.

## The bottom line on omega-3s and mental health

Omega-3 fatty acids are promising natural treatments for mood disorders, but we need more research about how they work, how effective they really are, and their long-term safety before we can make conclusive recommendations for people managing mental health conditions or who wish to improve mood.

*Dr. Mischoulon will present “Omega-3 Fatty Acids for Mood Disorders and Other Psychiatric Conditions” at the [Osher Center for Integrative Medicine Grand Rounds](#) at Brigham and Women’s Hospital on August 7th, 2018, from 8 to 9 AM. Members of the public are welcome to attend his talk.*

## Reference

[The Vitamin D and Omega-3 Trial-Depression Endpoint Prevention \(VITAL-DEP\): Rationale and design of a large-scale ancillary study evaluating vitamin D and marine omega-3 fatty acid supplements for prevention of late-life depression](#). *Contemporary Clinical Trials*, May 2018.

## Related Information: [Understanding Depression](#)



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## Comments:

POSTED AUGUST 16TH, 2018 AT 12:07 PM

**Sylvia Olson**

While I think the article is good, it does not tell the reader that most of fish oil capsules sold over the counter are unregulated, and contain widely different ingredients and potency levels. They are mostly a waste of money. If you have health concerns, you need to consult an MD or a Registered Dietitian. Not a naturopath, homeopath, or other pseudoscience practitioner. Eat a diet rich in whole grains, nuts, and some oily fish. I take a multivitamin supplement made by CVS, formulated for my gender and age. Not from the food supplement shelves, which are unregulated, and might contain anything at all, or nothing but vegetable oil or cornstarch.



POSTED AUGUST 20TH, 2018 AT 4:44 PM

**David Mischoulon, MD, PhD**

Your concerns are very valid. The quality of commercially available omega-3 preparations can vary greatly. In our clinical trials we use preparations made by reputable manufacturers with high standards. We also have the preparations analyzed by 2 independent labs to confirm omega-3 content, impurities, and degree of oxidation, prior to initiating the study. While omega-3 fatty acids—like most nutrients—are ideally obtained through dietary practice, because many people may not enjoy omega-3 containing foods, supplements may be a good option for these individuals. Anyone who is interested in using an omega-3 preparation for treating a psychiatric condition should do so preferably under the supervision of a psychiatrist.

POSTED AUGUST 14TH, 2018 AT 2:58 PM

**Nand Dhawan**

Vegetable sources of omega 3 fatty acids are flax seeds, chia seeds and certain oils like soya oil & canola oil for vegetarians. flax seeds are also very useful for intestine.



POSTED AUGUST 20TH, 2018 AT 4:47 PM

**David Mischoulon, MD, PhD**

The omega-3s found in vegetable sources differ from those found in fish. There is less evidence for psychiatric effects from omega-3s (e.e. alpha linolenic acid) coming from vegetable sources, though they have general health benefits.

POSTED AUGUST 14TH, 2018 AT 5:35 AM

**Mohamed haariz**

How can I participate in a omega 3 study



POSTED AUGUST 20TH, 2018 AT 4:40 PM

**David Mischoulon, MD, PhD**

You can check the website [clinicaltrials.gov](http://clinicaltrials.gov), which lists different kinds of clinical trials and whether they are recruiting new subjects. Perhaps there is a study in your area for which you may qualify.

POSTED AUGUST 14TH, 2018 AT 1:18 AM

**Dan L. Campbell, Research Biologist**

Since there seems to be relatively minor advancement in treating the severe moods of Alz, what would be the negative effects of Omega-3 and Omega-6 fatty acids to help treat this problem?

While I do not pretend to know any answers to this problem, I experience/see the problems every day, and try to find what can be done.

POSTED AUGUST 13TH, 2018 AT 6:56 PM

**Dr Edmond O'Flaherty , physician in Dublin**

My initial interest in omga-3 was an article by Dr Andrew Stoll in Harvard about May 99, One of my bipolar patients had extreme OCD related to HIV which was not relevant to her. I put her on 9.6g of fish oil and continued her on her regular medication. She was well for the next 3 years with no obvious mental health problem when she was attending here.

POSTED AUGUST 13TH, 2018 AT 5:05 PM

**Gar**

Why don't you just tell people to eat foods that have Omega 3's instead of trying to push supplements?

I eat a very healthy diet and doing very well without taking pills.



POSTED AUGUST 20TH, 2018 AT 4:50 PM

**David Mischoulon, MD, PhD**

Good for you for eating healthily! Sadly, many people do not like omega-3 containing foods such as fish, and for these people, supplementation may be a good alternative to obtain omega-3. As a clinical investigator, my research focuses on study supplements, which is what I was asked to cover in this article. I'm all for healthy eating, but not everyone can afford it or wants to eat certain foods, and this is perhaps why supplements are so popular.

[POSTED AUGUST 13TH, 2018 AT 3:09 PM](#)

### **KATHRYN IRADI**

How would one sign up for a Omega 3, study?



[POSTED AUGUST 20TH, 2018 AT 4:59 PM](#)

### **David Mischoulon, MD, PhD**

You can check the website [clinicaltrials.gov](http://clinicaltrials.gov), which lists different kinds of clinical trials and whether they are recruiting new subjects. Perhaps there is a study in your area for which you may qualify.

[POSTED AUGUST 13TH, 2018 AT 12:59 PM](#)

### **Jeremy W Potash**

Have you also investigated the efficacy of purslane as a source of Omega 3. Purslane (*Portulaca olearacea*) is a big part of the mountain vegetable diet of the Tujia minority in western Hunan (delicious), for example, and is consumed globally. Was glad to find it in local farmer's market in California, and even happier to learn about its health benefits including Omega 3. The fish oil capsules are so huge... much better to sprinkle purslane or stir fry it...



[POSTED AUGUST 20TH, 2018 AT 4:51 PM](#)

### **David Mischoulon, MD, PhD**

I have not studied this source of omega-3. Thank you for pointing it out!

[POSTED AUGUST 4TH, 2018 AT 11:44 AM](#)

### **Jim Fiaschetti**

If there was any doubt, here is the science.

<https://news.illinois.edu/blog/view/6367/532158>

CHAMPAIGN, Ill. — Chemical compounds called cannabinoids are found in marijuana and also are produced naturally in the body from omega-3 fatty acids. A well-known cannabinoid in marijuana, tetrahydrocannabinol, is responsible for some of its euphoric effects, but it also has anti-inflammatory benefits. A new study in animal tissue reveals the cascade of chemical reactions that convert omega-3 fatty acids into cannabinoids that have anti-inflammatory benefits – but without the psychotropic high.

The findings are published in the Proceedings of the National Academy of Sciences.

Foods such as meat, eggs, fish and nuts contain omega-3 and omega-6 fatty acids, which the body converts into endocannabinoids – cannabinoids that the body produces naturally, said Aditi Das, a University of Illinois professor of comparative biosciences and biochemistry, who led the study. Cannabinoids in marijuana and endocannabinoids produced in the body can support the body's immune system and therefore are attractive targets for the development of anti-inflammatory therapeutics, she said.

[POSTED AUGUST 4TH, 2018 AT 11:42 AM](#)

### **Jim Fiaschetti**

Since omega threes can be converted to cannabinoids in the gut, therein may lie some of the mechanisms that could help you explain the effects. The endocannabinoid system may end up being our primary endocrine system truth be known.

POSTED AUGUST 3RD, 2018 AT 8:47 PM

**Carl Kennedy**

Great work and article! Although ssri treatment provided immediate help for chronic mda, the help came side effects. After several months I was able to exchange viibryd for supplements. Looking forward to more news!



POSTED AUGUST 20TH, 2018 AT 4:53 PM

**David Mischoulon, MD, PhD**

Thanks very much! I'm glad you were able to come off the SSRI and maintain your benefit with supplements. Not everyone is so lucky!

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