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Omega-3 Fatty Acids and Mood Disorders

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Research suggests omega-3s can help mild to major depression and even schizophrenia.



Long recognized for their heart-health benefits, omega-3 fatty acids are emerging as an effective therapy for mood disorders ranging from major depression and postpartum depression to bipolar disorder and schizophrenia.

“Research suggests depression rates have risen as our intake of omega-3s has fallen over the past 50 to 100 years,” says omega-3 expert Gretchen Vannice, MS, RD, an independent nutrition research consultant based in Portland, Ore., and the author of *The Omega-3 Handbook*. “Studies show they help many mood disorders. So could getting enough of certain omega-3 fatty acids help reduce depression rates? Many experts think that among people who don’t have a genetic predisposition for mood disorders, they might.”

Yet giving your clients the green light to consume omega-3s for mental health benefits isn’t as simple as saying “swallow three fish oil capsules and call me in the morning.” It takes the right combination of fats, in addition to other therapies a client may be using, to get results, research shows. And many people with mood disorders should speak with their doctors first to avoid making mistakes like stopping other depression treatments.

But it’s a conversation worth having. According to the Centers for Disease Control and Prevention, nearly 10% of Americans are battling some type of depression. Forty percent of those have major depression.¹ Another 2.6% of Americans are living with bipolar disorder, and 1.1% have schizophrenia. Meanwhile, about 10% to 15% of women experience depression during pregnancy, and up to one in five new mothers lives with postpartum depression.² These disorders make daily living a struggle—and can be life-threatening. Ninety percent of suicides, for example, occur in people with treatable psychiatric illnesses, according to the American Foundation for Suicide Prevention.

Fats on the Brain

Enter the good fats. The human body uses omega-3s in many ways. They seem to be especially

important for a well-functioning central nervous system, for the transmission of signals from the eyes to the brain, for heart health (some omega-3s protect against abnormal heart rhythms, reduce triglycerides, lower the risk of blood clots, and discourage the growth of plaque in artery walls), and they even promote healthy brain development in babies during pregnancy and breast-feeding.³

While your body can synthesize other types of fat from dietary components such as carbohydrates and proteins, it can't make its own omega-3s. We have to get them from food or fish oil supplements. Omega-3s come in three varieties:

- **Docosahexaenoic acid (DHA):** Found in fatty cold-water fish such as salmon, mackerel, halibut, sardines, tuna, and herring, DHA concentrates in the brain's gray matter and the retinas in the eyes.

"DHA molecules are long-chain fatty acids. They're fluid and flexible," Vannice explains. "They become part of the membrane of brain cells and work at synapses, where chemical signals jump from cell to cell."

- **Eicosapentaenoic acid (EPA):** Also found in cold-water fish, EPA seems to have a unique role in maintaining a healthy mood.

"EPA doesn't become part of a brain cell's structure the way DHA does. It seems to help by reducing inflammatory processes in the brain and by balancing out metabolic pathways," Vannice says. "Many studies show that DHA alone doesn't work for depression. You need a little more EPA than DHA to get results. We're still trying to understand exactly why, but we know it matters."

In addition, some EPA is converted to DHA in the body.

- **Alpha-linolenic acid (ALA):** Found in flaxseed, canola oil, pumpkin seeds, purslane, and walnuts, and in small amounts in Brussels sprouts, kale, spinach, and salad greens, ALA doesn't directly influence mood management although it may help with heart health. The human body converts a small percentage into EPA and DHA.⁴

While most Americans get plenty of ALA, we're woefully low in the consumption of DHA and EPA. The American Heart Association recommends people eat fish twice a week, which, on average, would give you the recommended dose of 500 mg of DHA and EPA daily. But most adults and kids get closer to 100 mg or less, Vannice says. As a result, blood levels of these fats are low—and even lower in people with depression.

Do Good Fats = Better Moods?

Research from laboratory and population studies and clinical trials that tested omega-3 supplements in people with various types of depression suggests that raising EPA and DHA levels can make a difference. Omega-3 researcher David Mischoulon, MD, PhD, director of research in the Depression Clinical and Research Program at Boston's Massachusetts General Hospital and an associate professor of psychiatry at Harvard Medical School, says EPA and

DHA “are thought to be active as antidepressants” in the brain. From their catbird seat in cell walls, omega-3s help with what brain researchers call “second messenger systems” that carry messages from outside into cells.

Mischoulon and others who study the effects of omega-3s on depression have found the following:

- **EPA plus DHA can improve primary depression.** When M. Elizabeth Sublette, MD, PhD, of the New York State Psychiatric Institute and her team of researchers reviewed 15 trials involving 916 participants, they concluded that supplements with at least 60% EPA improved depression symptoms. Their meta-analysis was published online in the September 2011 issue of the *Journal of Clinical Psychiatry*. A Canadian study published in the August 2011 issue of the same journal found that a similar 60/40 ratio of EPA/DHA eased depression somewhat in people with depression who didn’t have anxiety disorders.

“The human brain likely benefits from a combination of EPA and DHA since they occur together in nature and both have apparent benefits for depression and suicide,” Mischoulon notes.

- **Omega-3s help some aspects of bipolar disorder.** In an analysis led by researchers from Australia’s University of Melbourne, Mischoulon and colleagues concluded that omega-3s could have a significant effect on bipolar depression but not on bipolar mania.⁵

- **Low omega-3 levels are associated with suicide and self-harm.** In response to increasing rates of suicide in the military, researchers from the National Institutes of Health (NIH) recently found that low blood levels of omega-3s were widespread and raised suicide risk by as much as 62%. The study was published online in the August 2011 issue of the *Journal of Clinical Psychiatry*.

“A previous placebo-controlled trial demonstrated that 2 g of omega-3 fatty acids per day reduced suicidal thinking by 45% as well as depression and anxiety scores among individuals with recurrent self-harm,” says researcher Capt Joseph R. Hibbeln, MD, acting chief of the Section of Nutritional Neurosciences at the National Institute on Alcohol Abuse and Alcoholism’s Laboratory of Membrane Biochemistry and Biophysics in a press release from the NIH. He and other study authors concluded that “ensuring adequate omega-3 nutritional status is likely to benefit, and unlikely to harm, people at risk for suicide.”

- **Omega-3s help menopausal depression.** When 20 menopausal women with major depression took 2 g of EPA plus DHA daily for eight weeks, 70% found their mood improved, and 45% found their depression went into remission. Mean scores on the Montgomery-Asberg Depression Rating Scale fell from 24.2 to 10.7. And the study participants enjoyed a bonus—fewer hot flashes—according to researchers from Massachusetts General Hospital in the March 2011 issue of *Menopause*.

- **Omega-3s improve depression during and after pregnancy.** Low-dose DHA/EPA supplements lifted major depression for 15 pregnant women in a 2006 study published in *Acta*

Neuropsychiatrica. Other research has found that women with higher intakes of omega-3s after pregnancy are at lower risk of postpartum depression.⁶

In a small 2006 study published in the January issue of *Acta Psychiatrica Scandinavica*, 16 new mothers with postpartum depression took 0.5 to 2.8 g of EPA/DHA daily for eight weeks. Depression scores dropped about 50% in all groups. The researchers say that lifting postpartum depression is good for mothers and their babies: “Children of affected mothers may experience impaired attachment, and [postpartum depression] may adversely affect behavioral and cognitive development. Some women refuse medications during pregnancy and/or breast-feeding because long-term effects of antidepressants on the infant are unknown. Omega-3 fatty acid supplementation is associated with health benefits and is an attractive potential treatment.”

• **Omega-3s may protect against schizophrenia.** In a 2010 study published in the February issue of *Archives of General Psychiatry*, 81 people at extremely high risk of schizophrenia took 1.2 g of omega-3s or a placebo daily for 12 weeks. At the end of the study, 28% in the placebo group had developed the disorder compared with 5% in the omega-3s group.

“Intervention in at-risk individuals holds the promise of even better outcomes, with the potential to prevent full-blown psychotic disorders,” the study authors wrote.

Using Omega-3s Safely and Wisely

While low-dose omega-3s are a safe choice for most people, experts say people with depression and other mood disorders shouldn't try to use this fat as a home remedy for depression. “I prefer that they at least talk to a physician first,” Mischoulon says. “Depression is a potentially dangerous illness because of the risk of disability and suicide, so a doctor's input is important.”

Here are some guidelines you can use while counseling patients who suffer from depression:

• **Safest dose:** For general good health, adults and kids should get omega-3s by eating two or more servings of fatty cold-water fish per week. That's the recommendation of the American Heart Association and the Omega-3 Fatty Acids Subcommittee organized in 2006 by the American Psychiatric Association.⁷ “That works out to about 500 mg per day, which you also can get from fish oil capsules or other products [see sidebar],” Vannice says. People with mood disorders may benefit from 1,000 mg of EPA plus DHA daily from fish oil supplements, according to the subcommittee, but they should consult a doctor first.

• **Don't stop taking antidepressants, lithium, or any other medications or treatments.** “They shouldn't necessarily be viewed as a replacement for standard antidepressants or for psychotherapy, if these are being used,” Mischoulon says.

Suggest clients get their doctor's approval before starting any dose of omega-3s if they're pregnant, nursing, taking blood thinners, or have a bleeding disorder. Omega-3s can reduce blood clotting; if clients are already taking a blood thinner for this purpose, the combination could be dangerous.

— Sari Harrar is an award-winning freelance writer specializing in health, medicine, and science. Her articles have appeared in national magazines, including *O*, *The Oprah Magazine*; *Reader's Digest*; *Good Housekeeping*; *Better Homes and Gardens*; and *Organic Gardening*.

Alternatives for Fishy Burps

It's an unpleasant turn-off—and a big reason clients stop taking fish oil supplements. “People feel embarrassed about fishy burps and may not tell their dietitian, so this is a good area for an RD to become familiar with,” says Gretchen Vannice, MS, RD. She recommends these strategies for minimizing unpleasant “repeats”:

Take fish oil capsules with food. Suggest clients pair them with the largest meal of the day.

Try a higher-quality supplement. “Spending a few more dollars could alleviate the problem.” Look for enteric-coated capsules, too.

Switch to a spoonable fish oil. Recommend clients try Coromega (www.coromega.com), an orange-flavored gel that delivers 350 mg of EPA and 230 mg of DHA. Or have them try Barlean's Omega Swirl (www.barleans.com/omega_swirl.asp), which has a fruit smoothie taste and consistency and provides 350 mg of EPA and 350 mg of DHA in 2 tsp. Barlean's is also good for kids who can't or won't swallow fish oil capsules.

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