



## SEAFOOD OMEGA-3S AND MENTAL HEALTH

Omega-3s are a unique type of polyunsaturated fatty acid that are abundant in fish and shellfish. The two main seafood omega-3s are EPA\* and DHA\*. These omega-3s benefit heart health, the immune system and brain function, and are essential for infant brain growth and development. DHA is highly concentrated in the brain and retina where it participates in vision, communication between cells, nerve impulse transmission, and the protection of brain cells. Details of how these fatty acids affect mental function are beginning to emerge. In several mental disorders, these omega-3s are significantly below those observed in healthy people.

### Depression

Serious mental disorders affect about one in 17 American adults and are the leading cause of disability in the U.S., according to the National Institute of Mental Health. Major depressive disorder—a prolonged period of feeling low or hopeless—affects about 14 million Americans at any given time. The condition interferes with a person's ability to work, sleep, eat and experience pleasure and can be disabling.

Depression is most common in countries with the lowest consumption of seafood, such as the U.S. and Germany. It occurs least often in countries such as Japan, Korea and Iceland, where seafood consumption

is high. But this observation does not mean that low seafood consumption causes depression. However, we are learning that the omega-3s in fish may be helpful in treating patients with depression. Several studies in patients being treated medically for depression reported marked improvement in patients' symptoms when small amounts of EPA were added to the treatment. Doses of 1 to 2 grams of EPA/day were more effective than larger amounts and were without harmful side effects. Results also suggest that EPA is more effective than DHA. How EPA might bring about these improvements is not known. While these results are encouraging, much more information from larger rigorous studies is needed before we can consider these findings conclusive.

**Postpartum depression:** Serious depression also affects about 10% of women shortly after childbirth. Known as postpartum depression or "baby blues," the condition is marked by sudden mood changes, crying, irritability and anxiety. It can be severe. Childbirth is accompanied by changes in hormones, nutrients, emotions, and stress. At this time, there is a sharp fall in omega-3s, particularly DHA. Because DHA is an important part of brain structure and function, the sudden loss in DHA may be related to postpartum depression.

Women who consume seafood regularly during pregnancy and lactation or who have taken fish oil supplements during pregnancy have much smaller losses in DHA and are less likely to experience postpartum depression. Some studies have shown that women with this condition who consumed EPA and DHA had less severe postpartum depression than women not taking these fatty acids. Other studies have reported no benefits. Currently, there are too few studies to permit any conclusions about the usefulness of seafood omega-3s in preventing or easing this condition. As there are many other reasons to consume adequate amounts of these fatty acids during pregnancy and lactation, the possible chance of avoiding this condition is something to cheer the mind.

### Bipolar Disorder

People with bipolar disorder, sometimes called manic-depressive illness, suffer large swings in mood, from very

high to hopelessness and back again. Like major depression, this disorder can prevent a person from functioning normally and is also more common in countries where seafood consumption is low. People with bipolar disorder frequently have significantly lower levels of EPA and DHA than those without the condition. Although the condition often improves with medical treatment, some medicines have undesirable side effects.

Several studies have reported that the addition of EPA to a patient's usual therapy improves the symptoms. Only a few studies have reported no effect and none has found that the condition became worse. Severity of depression is usually reduced, without undesirable side effects. The most effective levels of EPA are moderate, 1 to 2 grams/day. Well controlled studies with more patients would improve the support for adding EPA to the treatment of bipolar patients. Now, however, studies are considered promising, but not conclusive.

### Hostile Behavior

Aggressive, violent and hostile behavior may also be related, at least in part, to omega-3 status. Many of these behaviors have been associated with very low levels of EPA and DHA in tissues, but that does not mean low omega-3s cause hostility. Many other conditions affect violence toward others and oneself. However, as with depression and bipolar disorder, violent behaviors, homicide and suicide are higher in countries with the lowest consumption of seafood. A few studies have reported significant improvements in behavior and lower aggression in those with a history of violence who were treated with EPA and DHA supplements. This topic is currently being studied and firmer results can be expected in the coming years. It is worth bearing in mind that good health, resistance to many types of illness and behavior all have links to good nutrition. Including seafood sources of EPA and DHA is an important part of sound food choices.

Written by Joyce A. Nettleton, DSc, RD, ScienceVoice Consulting, Denver, CO, 4/06

\* EPA or eicosapentaenoic acid; DHA or docosahexaenoic acid

[www.alaskaseafood.org](http://www.alaskaseafood.org)

Administrative Office (800) 478-2903

311 N. Franklin, Suite 200, Juneau AK 99801-1147

Marketing Office (800) 806-2497

150 Nickerson Street, Suite 310, Seattle WA 98109