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The Benefits of Fatty Acids – Part II

By: James L. Holly, MD

Omega-3 fats are those beneficial fats are in the oil naturally found in fish. The omega-3 fats, EPA and DHA, play different but equally vital roles in human health. Though research with omega-3 supplements is promising, most experts recommend eating more fish rather than taking supplements.

EPA (Eicosapentaenoic Acid) -- helps make the platelets in blood less sticky which in turn could help prevent the build-up of plaque otherwise leading to a heart attack or stroke.

DHA (Docosahexaenoic Acid) -- may help stabilize heart rhythm; potentially important for people recovering from heart attacks. May help regulate cell membrane functions involved in transmitting signals among brain cells.

Low DHA Linked to Brain Dysfunction

A link between low levels of DHA essential for normal brain function, and certain behavioral and neurological conditions -- Alzheimer's, depression, memory loss and Attention-Deficit Hyperactivity Disorder (ADHD) – has been suggested. A conference on nutrition and the brain at The New York Hospital-Cornell Medical Center's Nutrition Information Center focused on this connection.

Experts believe that low levels of DHA may contribute to a number of behavioral and neurological conditions that until now have been thought to be unrelated. In addition to conditions such as Alzheimer's, depression, memory loss and ADHD, researchers also have noted a possible link between deficient DHA levels and hostility and aggression.

DHA, the building block of human brain tissue and the primary structural fatty acid in the gray matter of the brain and retina, is critical for mental well-being and visual health throughout life. Sixty percent of the brain is fat, and DHA is the most abundant fat in the brain and retina. But the average American's diet is low in DHA because of a decline in consumption of sources such as animal organ meats and eggs and decreasing levels of DHA in these sources in general.

Research indicates that DHA may be a critical component of the diet of people of all ages. We now know that DHA is not only important to infants, but is also a key element for adult nutrition.

In 1995, the American Journal of Clinical Nutrition associated the documented increase in depression in North American in the 19th and 20th centuries with the decline in consumption of Omega-3 oils during the same period. The implication is that the increased consumption of Omega-3 oils may reduce the risk of depression. The article also noted that while the "many stresses of modern life contribute" to the prevalence of depression, the "relative deficiencies in [omega-3] essential fatty acids [such as DHA] may also intensify vulnerability to depression."

Additionally, the article pointed to lower rates of major depression in societies consuming large amounts of fish. In a cross-national collaborative study of rates of depression, North American and European populations showed cumulative rates of depression 10 times greater than a Taiwanese population consuming a diet rich in fish. Among the Japanese, another population that consumes a diet rich in fish, studies have shown a significantly lower prevalence of depression as compared to North America and Europe.

Research also indicates that DHA – principal Omega-3 oil, may reduce the risk of Type A measures of hostility. One recent study of violent impulsive prisoners found them to be deficient in DHA and another found that DHA supplementation reduced aggression and hostility in Japanese students.

DHA and Attention-Deficit Hyperactivity Disorder

Research conducted at Purdue University's Department of Foods and Nutrition, indicates that deficient levels of DHA are also correlated with behavioral problems in children. A study on a population of children in Indiana found that subjects with ADHD had significantly lower levels of DHA when compared to control subjects.

DHA and Aging

Americans are aging, and a 1996 survey found that one of the biggest fears among Americans 51 years and older is senility (37 percent). New research examining the impact of DHA on various neurological conditions associated with aging offers hope for those concerned with maintaining mental health and acuity as they age.

The Human Nutrition Research Center on Aging at Tufts University found that a low level of DHA is a significant risk factor for dementia, including Alzheimer's disease. The Center has discovered that the body may experience a decreased ability to make DHA as it ages, and is conducting further research to determine the beneficial effects of DHA supplementation on aged patients. Tufts suggests that DHA may be an important therapeutic modality in some age-related conditions, including Alzheimer's and heart disease.

A report from the Program in Human Nutrition at the University of Michigan suggests that cognitive deficits and dementia in the elderly may be associated with inadequate diets. Current studies on nutrition in the elderly suggest that many conditions associated with aging, such as loss of appetite and forgetfulness, may be avoided if optimal nutrition is maintained through a diet including nutrients like DHA.

DHA Supplementation

Recent research has shown that, despite the decline in consumption of DHA, it is possible to elevate levels through DHA dietary supplementation.

What Should You Do?

It is possible that by eating more fish that one can realize significant health benefits in a number of areas. Here again, are the major sources of Omega-3s and their relative content:

Omega-3s in Fish

More than 1,000 milligrams

Salmon (most), Anchovies, Sardines, Halibut (Atlantic), Shark, Herring, Mackerel, Trout (Brook), Trout (Rainbow), Tuna (Albacore)

500-900 milligrams

Halibut (Pacific), Striped sea bass, Rockfish, Swordfish, Salmon (Chum), Turbot, Smelt, Tuna-yellow fin, Squid, Whitefish

Less than 500 milligrams

Abalone, Grouper, Orange Roughy, Shrimp, Catfish, Haddock, Oysters, Snapper, Clams, Lobster, Perch, Sole, Cod, Mahi Mahi, Pike, Trout (sea), Crab, Mussels, Pollock, Trout (brook), Flounder, Octopus, Scallops

Remember, it is your life and it is your health. You can improve your health and probably extend your life by eating more fish.