Fish Fat May Help Fight Alzheimer's Disease

DHA, a Fatty Acid in Fish Such as Salmon, May Help Save Brain Cells

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Sept. 8, 2005 -- New research shows how a fat found in fish such as salmon, mackerel, and herring might help fight Alzheimer's disease.

The fat is called DHA. That's short for docosahexaenoic acid. Technically, it's an omega-3 fatty acid.

DHA and human brain cells were recently studied by researchers including Nicolas Bazan, MD, PhD, of Louisiana State University's Neuroscience Center of Excellence.

The scientists noticed that DHA helped brain cells in two ways:

- Curbing production of beta-amyloid proteins, which are seen in Alzheimer's brain plaque
- Boosting production of another protein called NPD1 that helps brain cells stay alive

The findings appear in *The Journal of Clinical Investigation*.

Fat to the Rescue

The researchers examined the brain of someone with Alzheimer's disease who had died. Such brains tend to have tangles and clumps of proteins, as well as signs of inflammation.

Scientists don't know exactly what triggers Alzheimer's disease to develop. However, they've noticed clumps of amyloid protein and bundles of tangles (twisted fibers) in brains of people who suffer with the condition. Brain nerve cell death, which is the hallmark of the memory-robbing disorder, is associated with these proteins and leads to the personality changes and other abnormalities that occur with the disease.

It's unclear whether plaques or tangles cause Alzheimer's disease or whether these are a byproduct of some other process that causes the condition.

DHA may help put the brakes on beta-amyloid proteins and rev up NPD1, write Bazan and colleagues. NPD1 acts like a bodyguard for brain cells, blocking the disease's attempts to make brain cells die, the study shows.

Fish as Brain Food

Bazan's study was done in a lab. They didn't serve anyone fish for supper every night or dole out fish oil capsules.

The researchers also don't recommend any particular dose of DHA for Alzheimer's disease. But they note that DHA is essential for the brain.

Past studies have shown that people who eat a lot of fish tend to be less likely to develop Alzheimer's disease than those who hardly ever eat fish. For instance, a study published in 2003 showed that elderly Chicagoans who reported eating fish once a week for four years developed Alzheimer's less often than those who rarely or never ate fish.

That doesn't prove that fish prevents Alzheimer's, but the pattern is getting lots of attention. DHA has also been found to be important for babies' brain development.

Government's Fish Advice

If you choose to eat more fish, you may want to consider mercury levels in fish.

For most people, the mercury risk from fish and shellfish is not a health concern, states the web site of the Environmental Protection Agency (EPA). The FDA and EPA offer this advice for women who are or may become pregnant, nursing mothers, and young children:

- Don't eat shark, swordfish, king mackerel, or tilefish due to high mercury levels.
- Eat up to 12 ounces (two average meals) per week of a variety of fish and shellfish that are lower in mercury (such as shrimp, canned light tuna, salmon, pollock, and catfish).
- Know that albacore tuna has more mercury than light tuna.
- Check local advisories about the safety of locally caught fish. If no advice is available, eat up to 6 ounces (one average meal) per week of fish from local waters, but don't eat any other fish that week.

Fish oil capsules are another option. In December 2004, consumerlab.com reported that its tests found no mercury or other toxins called PCBs in 41 fish oil supplements. However, one supplement was spoiled and another didn't contain its labeled amounts, according to consumerlab.com.

Discuss any supplements you take with your doctor, especially patients taking fish oil or marine-derived omega-3 fatty acid supplements in combination with blood thinners, since these oils in extremely high doses may have the potential to increase bleeding tendency.