Fatty Fish and Healthy Hearts

By ACSH Staff — April 11, 2002

The Inuit, or Eskimo, population of Canada has a lower rate of death from cardiovascular disease than their Northern European counterparts. Is it because fish dominates their diet? Three recent studies support the claim that the omega-3 fatty acid found in fish can reduce the risk of death from heart disease. Now the U.S. Food and Drug Administration (FDA) allows products with omega-3 (also called n-3) fatty acids to state on their labels: "The scientific evidence about whether omega-3 fatty acids may reduce the risk of coronary heart disease is suggestive, but not conclusive." Do these studies make the evidence any more conclusive?

First, we need to have a clearer understanding of omega-3 fatty acids and how they work. Some fatty acids are essential to the diet and, fittingly, are referred to as essential fatty acids. Two such acids are eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), which are the long-chain polyunsaturated, or "good fat," fatty acids found in fish, which are becoming well-known for their protective effect on the heart. The third essential fatty acid is a-linolenic acid, a shorter-chain acid found in flax seed oil, canola oil, and English walnuts. This acid is not as well researched.

The theory about how these omega-3 fatty acids can protect the heart is fascinating. They don't do it by changing cholesterol levels but instead seem to be protective against potentially fatal disturbances in the heart's rhythm (arrhythmias). The DHA and EPA are stored in the heart-cell membrane and released when there is a loss of blood flow to a portion of the heart. These two acids protect the heart cells from joining the rapid heartbeat action that is often associated with increased risk of sudden death.

What have the three most recent studies on omega-3 fatty acids found? The first study was released in the _New England Journal of Medicine_. More than 20,000 people were involved in the Physicians' Health Study, which has been going on for seventeen years. When the study began, none of the participants had a history of heart disease. Researchers analyzed the levels of omega-3 fatty acids in the blood of 94 male victims of sudden death and compared these to the levels found in 184 other men in the study. It was found that men with the highest levels of omega-3 in their blood had an 81% lower risk of sudden death than did the men with the lowest levels. However, it is difficult to ascertain whether these levels were directly a result of fish consumption. The dietary intake of fish was obtained twelve months into the survey with an "abbreviated, semiquantitative food-frequency questionnaire." Remember, this was a 17-year long survey; the probability that fish-consumption patterns changed over this period is high. Also, the levels of omega-3 fatty acids in the blood were determined by a blood test taken at baseline, while the average time to sudden death was 8.7 years. It also seems unlikely that these blood levels wouldn't have changed after almost nine years. However, the results are still encouraging and significant.
The second study focuses on the effect of omega-3 fatty acids on women specifically the first of its kind and was published in the *Journal of the American Medical Association*. It was found that women who ate fish two to four times a week had a 30% lower risk of heart disease than women who rarely ate fish. And women who ate fish five or more times a week were at a 34% lower risk of heart disease. Also, the findings suggested that fish consumption is "more protective against fatal CHD than nonfatal MI," meaning that, while it may protect you against having a heart attack, it is even more protective in keeping you from dying from a heart attack. However, this study is not the strongest type of study since it was descriptive and observational. The researchers relied on questionnaires as a source of fish-intake data, and self-reporting is often inaccurate due to poor memory, exaggerated answers, and/or misunderstood questions. Such studies can suggest hypotheses for future research but cannot alone prove a causal relationship. While there is suggestive evidence that fish-consumption is the reason for reduced risk, it is not conclusively proven.

The third study was published in the American Heart Association journal *Circulation* and found that 11,323 heart attack patients who were given 1 gram fish-oil capsules daily had a 42% reduction in risk of sudden cardiac death, compared to those given a placebo, in the three months following the patients' heart attacks. However, researchers advise that their findings need to be confirmed by further adequately-sized trials before they would "recommend fish-oil capsules to anyone."

As stated by Dr. Irwin H. Rosenberg in the April 11 *New England Journal of Medicine*, these studies are "yet another addition to the growing body of evidence, including intervention trials, that eating long-chain n-3 polyunsaturated fatty acids, largely from fish, may provide protection against sudden death from cardiovascular causes." With increased understanding of how omega-3 fatty acids can prevent death from heart disease, it is reasonable to make fish a larger part of your diet. The American Heart Association is now recommending that people eat at least two 3-oz. servings of fish per week to protect their heart health. Imitation crab, fish sticks, and fast-food fish sandwiches do not contribute toward that goal, since they lose their omega-3 oils during processing. When choosing a fish, it's better to chose a fatty fish that has higher levels of omega-3 fatty acids, such as anchovies, catfish, halibut, salmon, albacore tuna, mackerel, or whitefish.

The FDA has recently released warnings about the contaminants found in fish. The warnings might disappoint some who are excited by the heart attack findings. Nevertheless, the scientific data on the health effects of PCBs and methyl mercury in certain fish on young children, pregnant or nursing women, or those planning pregnancy in the next year is still inconclusive. The FDA advises that these groups steer clear of "long-lived, larger fish having more dark meat, particularly shark, swordfish, king mackerel, and tilefish," limiting their consumption to no more than 12 ounces per week, and also that people in these groups should not consume freshwater fish caught by family or friends.

However, Dr. Charles Lockwood, chairman of the American College of Obstetricians and Gynecologists' panel on obstetric practice, and chairman of the department of obstetrics and gynecology at New York University's School of Medicine, says there is not enough scientific evidence to prompt doctors to caution or as he said, "terrify" pregnant women about eating potentially mercury-laden fish, including tuna. In an interview, Dr. Lockwood said: "There is some
junk science at work here. They can say whatever they want; we've reviewed the basis for their findings and there isn't a lot of substance to it... The jury is not in on the real risk to women.” On the whole, Lockwood remarked, obstetricians aren't advising pregnant women to avoid certain kinds of fish nor to reduce their fish consumption, despite the FDA warning.

Finally, you should be wary if you decide to go the supplement route. ConsumerLab.com tested twenty supplements and six of the products failed to pass the review due to "inadequate amounts of DHA, which ranged from 50% to 83% of the amounts stated on the labels." Just because the label claims that the product's "potency" has been "verified" doesn't mean that it's the case. Two of these six failing products made such claims and couldn't live up to them. Check ConsumerLab.com's website (www.consumerlab.com [1]) for a list of the products that passed their review and also for information on dosage and safety of fish oil supplements.

There is no sure-fire cure or prevention method for heart disease or death due to coronary heart disease. While the Inuit population is held up as an excellent example of good heart health, they still have a life expectancy six years shorter than the Canadian average. Among this population, there are higher rates of smoking, drinking, injury-related deaths, youth suicide, and infant mortality. By eating large amounts of fish or by taking an omega-3 supplement, you may be reducing your risk of death from heart disease, but don't expect it to cure all your health problems.

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Responses:
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Karen,
This article was very interesting. My congratulations. Keep up the good work. I read your articles every week.
Linda Little