

Risks and benefits of eating fish.

Contributed by Toma Grubb
Wednesday, 14 February 2007
Last Updated Wednesday, 09 April 2008

The Harvard Medical School released this article on risks Vs Benefits of eating fish. Their article is so good I wanted to pass it on to our members. There are a couple of obvious things I will comment on at the bottom of this article That were missed by The Harvard Medical School writers.

Toma

Benefits outweigh risks, according to two recent reviews.

We know, we know: We're supposed to eat fish. Several guidelines say a healthful diet should include two servings (usually defined as 3 ounces) per week. Fish contains eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), two long-chain omega-3 fats that aren't found in appreciable amounts in any other sort of readily available food. Those omega-3 fats may have all kinds of benefits, but so far the best evidence indicates that they're protective against fatal cardiac arrhythmias and heart attacks. In addition, DHA may be important to early brain development and to healthy pregnancies.

But there are contaminants to consider. It's well known that mercury (more precisely, methylmercury) accumulates in the lean tissue of some species. Polychlorinated biphenyls (PCBs) and dioxins are found in fatty tissue. Mercury crosses the placenta, and high doses cause serious brain damage. In adults, the metal may harm the heart. PCBs and dioxin cause cancer in animal experiments, and there's evidence that they're human carcinogens, too. They may also throw the immune system out of kilter and cause neurologic defects.

So which way does the fish scale tip, toward benefit or risk?

Late in 2006, the Institute of Medicine (IOM) and two researchers at the Harvard School of Public Health, Dariush Mozaffarian and Eric Rimm, weighed in on that question with extensive reviews of the existing medical research. Their conclusions differed in some respects. The Harvard researchers found plenty of evidence that EPA and DHA have health benefits. The IOM committee of experts found the evidence unimpressive and suggested an alternative explanation for the positive cardiovascular findings: People who eat fish regularly may not eat as much meat, so their intake of harmful saturated fat is lower.

But the IOM and Harvard experts agreed on the critical question: Eating fish is worth whatever risks the contaminants might entail. In general, the levels of pollutants in fish are below levels at which the FDA would take action. The IOM experts said that for most people, a healthful diet should include two 3-ounce servings per week. The Harvard researchers said that for adults, the benefits of “modest” fish consumption — which they defined as one or two servings per week — outweigh the risks.

Here are some other important points made in the two reviews:

Fish when you’re eating for two. The Harvard researchers stressed the importance of DHA to fetal development (the IOM committee was more cautious). Mercury “climbs” the food chain, so the metal accumulates more in the flesh of large, long-lived predatory fish than it does in smaller, short-lived creatures. The Harvard researchers said women who are or may become pregnant and nursing mothers should steer clear of some types of fish (king mackerel, tilefish — also known as golden bass — shark, and swordfish) to minimize exposure to mercury, but should eat 12 ounces of other types of fish and shellfish per week to make sure they’re getting enough DHA.

Not created equal. A 3-ounce serving of farmed salmon contains over 2,000 milligrams of EPA and DHA omega-3 fats. A serving of catfish that size delivers less than a tenth of that amount (about 150 mg). So if omega-3 fats are what we’re after when we eat fish, it’s not just any fish that will do. Besides salmon, the best omega-3 providers include Atlantic mackerel (which is different from king mackerel), herring, and sardines. Swordfish and golden bass throw us right back into the benefit-risk quagmire, because while they’re ample providers of omega-3s, they also rank high in mercury content. Americans eat more shrimp than any other type of seafood, but a 3-ounce serving only has about 250 mg of omega-3 fats. Lobster, at 71 mg per 3 ounces, is also an omega-3 lightweight.

Salmon is the best deal. One knock against fish is that it’s expensive, so the Harvard researchers set out to calculate out how much it would cost to get 250 mg of EPA and DHA daily from eating fish. They surveyed prices in six cities and collected data on EPA and DHA content. Salmon turns out to be the best deal: It would cost you just nine cents a day to get 250 mg of EPA and DHA daily from canned pink salmon. Other sorts of salmon were almost as inexpensive. Catfish may be cheap by the pound, but not if you’re shopping for omega-3 content. According to the Harvard researchers’ calculations, you’d have to pay over \$2 per day for a daily dose of 250 mg of EPA and DHA from catfish.

Farmed versus wild salmon. The omega-3 content of farmed salmon depends on the amount of fish oil in the feed, so if feeding practices change, so might omega-3 content. But for now, farmed salmon has considerably more omega-3 content than its wild comrades, according to IOM and Harvard reviews (4,504 mg versus 1,774 mg in a 6-ounce serving, according to the Harvard paper). But some bad comes with the good — the Harvard researchers also cited studies showing that farmed salmon had more PCB contamination than wild salmon.

White versus light tuna. Canned tuna is sold either as white tuna — sometimes called albacore — or as light tuna. White tuna is almost always packed in water in solid form (it’s a single, solid piece of loin, cut to fit in the can), whereas light tuna is often sold as chunk tuna (a mixture of cut pieces) in either oil or water. White tuna contains three times the omega-3 fats of light tuna, but alas, also has three times the mercury.

Selenium may keep mercury from rising. There’s some evidence that selenium blocks some of the harmful effect of mercury and also keeps it from accumulating in tissue. If this research holds up, it’s good news for seafood lovers because most fish and shellfish (especially mussels) are rich in selenium.

For more information on healthy habits, order our special health report Living Better, Living Longer: The Secrets of Healthy Aging, available at <http://clicks.health.harvard.edu>.

What the Harvard Medical School article does not say is there is a way to get all the omega-3 you need without the downside of mercury, PCBs, dioxins and other industrial pollutants. Many good omega-3 supplements are on the market. There are also a lot of others that are not so good. To learn more about Omega-3 see our page on omega-3 or do a site search to find all references to it. A good omega-3 supplement will have at least 500 mg of EPA/DHA per 1000 mg capsule and have all the toxins removed. The one I take has 400 mg EPA and 200 mg DHA per 1000mg capsule and is molecularly distilled to eliminate the mercury, PCBs, dioxins and other contaminants. The NutriCoach recommendation for a healthy adult is 1000 mg EPA/DHA per day. People with arthritis, fibromyalgia and other conditions effecting the nerves or joints may benefit from up to 4000 mg EPA/DHA per day.

Toma