From fishing line to lunch.

DNR FILE

STEVE APPS

WISCONSIN FISH BRING BENEFICIAL OMEGA-3 FATTY ACIDS TO THE TABLE.

A healthy dose of flavor

Meghan Williams and Candy Schrank

Omega-3 fatty acids are all over the news, on food packaging and in dietary supplements. But if you eat Wisconsin sport fish, could these healthy fats also be on your plate? You bet!

By now, you've likely heard about the health benefits of omega-3 fatty acids. Two of these essential nutrients — eicosapentaenoic acid (known as EPA) and docosahexaenoic acid (known as DHA) — are found in highest concentrations in fish.

EPA contributes to the prevention of cardiovascular diseases and hypertension, and DHA is a vital component of fetal brain and eye development. And while people who eat marine or farmed fish can visit the Food and Drug Administration or U.S. Department of Agriculture websites to find information about their meal's fatty acid content, the same information for wild freshwater sport fish is largely absent.

Do fish caught in Wisconsin waters also contain these beneficial fatty acids? Do different types of sport fish contain different amounts of fatty acids? We asked these and other questions as part of our roles as the DNR toxicologists responsible for coordinating Wisconsin's contaminant monitoring program and working with the Department of Health Services to issue fish consumption advisories.

To begin answering these questions, we sent samples of nearly 200 sport fish, representing 15 species, to the Wisconsin State Laboratory of Hygiene and the Minnesota Health Department to be analyzed for several types of fatty acids, including five types of omega-3's.

Samples included fish from a broad range of water types (inland waters, streams/rivers, Great Lakes) and represented many parts of the food web, from benthivorous fish (those that eat bottom-dwelling organisms, like insect larvae and crayfish) to top predators (those that only eat other fish).

What was discovered is that fish caught in Wisconsin waters contain omega-3 fatty acids in varying amounts, depending on the species. Salmonids (trout, salmon, cisco/lake herring and whitefish) generally contain much higher concentrations of omega-3 fatty acids than bass, walleye, pike, crappie or perch.

Furthermore, we learned that fatty acid content of Wisconsin sport fish is comparable to fatty acid content in similar freshwater fish species from other parts of the world. This is probably no surprise to Wisconsin anglers who know that salmon are fattier than perch no matter where you cast your line.

We also found that the most abundant types of omega-3's in most species were EPA and DHA. In fact, an 8-oz meal of all species tested provided 250 mg of EPA+DHA, the daily intake level recommended for healthy adults for the pre-

vention of cardiovascular disease by the Harvard School of Public Health.

Does this mean that a fish a day keeps the doctor away?

Not necessarily. Even though a serving of Wisconsin fish will fulfill your daily fatty acid requirements, Wisconsin issues recommendations about how much fish can be safely eaten from all surface waters due to contamination by mercury, PCBs or other pollutants. Most of the fish analyzed as part of this study contained some amount of mercury, and some fish (mostly from the Great Lakes and their tributaries) also contained PCBs.

But the good news is that Wisconsin sport fish contain high enough concentrations of beneficial fatty acids that they don't need to be eaten every day. In fact, eating one or two meals per month of some species (like brown trout, lean lake trout and cisco) allows you to consume the recommended amount of omega-3 fatty acids while minimizing your risk of contaminant exposure. Check the consumption advice that applies to your fishing spot and practice safe cooking techniques.

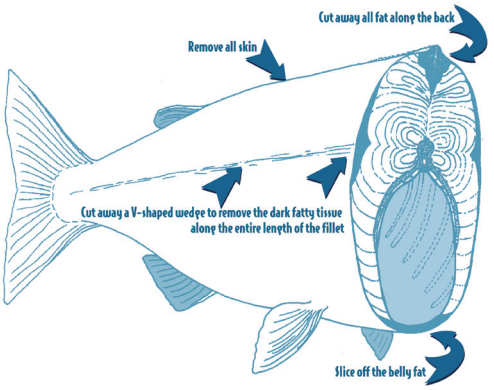
Visit dnr.wi.gov and search "eating your catch" or use the QR code below to access more information.

Wisconsin sport fish can do you a "fat lot of good."

Meghan Williams and Candy Schrank are environmental toxicologists in the DNR's fisheries management program.

Five simple steps you can take to reduce your contaminant intake:

- Eat smaller, younger fish — keep trophies on the wall and off your plate!
- Space out your fish meals to allow your body to get rid of some mercury.
- Remove fatty parts of the fish before cooking (see diagram on the right).
- Use a cooking method that allows fat to drip away (like broiling or grilling).
- Don't use drippings to prepare sauces or gravies.



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Mercury and PCB Concentrations

Higher concentrations of mercury found in fish

Higher concentrations of PCBs found in fish

Waters where safe-eating guidelines apply

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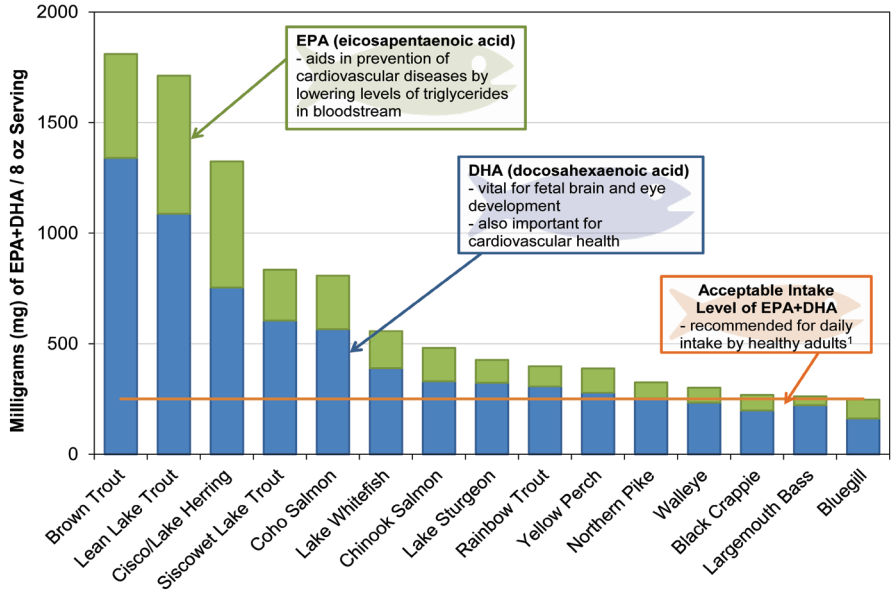
EPA and DHA Levels



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For more information about mercury in marine or farmed fish, visit fda.gov/food/resourcesforyou/consumers/ucm110591.htm.

To go to the DNR fish consumption advisory website, scan this code with a smartphone or visit: http://dnr.wi.gov/u/?q=69.

[1] Mozaffarian, D. 2009. Fish, mercury, selenium and cardiovascular risk: current evidence and unanswered questions. Int J Environ Res Public Health 6, 1894-1916.

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