



# FISH Community Results

Fish are Important for Superior Health (FISH) Project

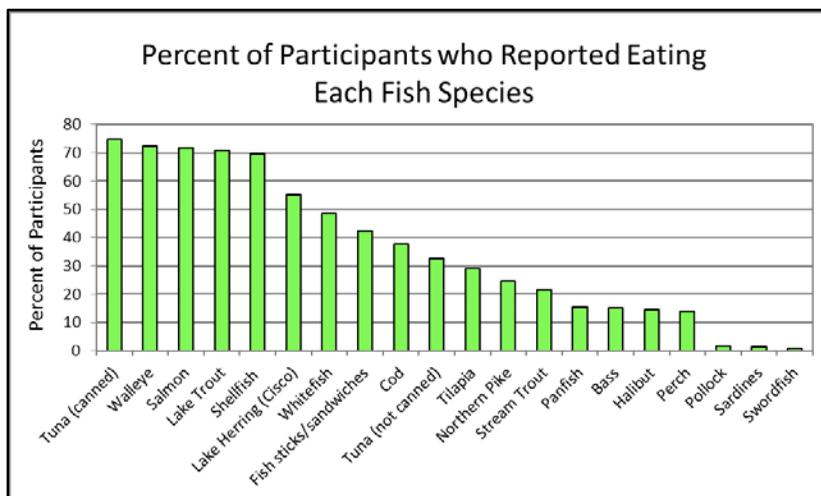
November 2015

## Community participation for FISH was incredible!

From May 2014 through June 2015, 499 women age 16-50 who live in or near Grand Marais and Grand Portage participated in FISH.

Altogether, participants reported eating over 40,000 meals of fish the year prior to their FISH visit - 28% of these fish meals were locally-caught.

- About 70% of participants ate canned tuna, walleye, salmon, lake trout, and shellfish.
- 80% of participants reported eating locally caught fish –the most meals eaten were lake trout, walleye, herring, and whitefish.
- 4% of participants did not eat fish.



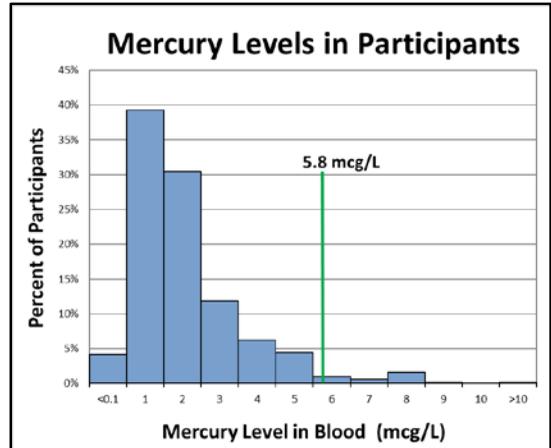
# Mercury and Eating Fish

All fish contain at least a small amount of mercury. When you eat fish, the mercury in the fish gets into your body. Your body is able to get rid of mercury over time.

## Mercury blood results

**Mercury levels were low in most FISH participants.** Results are shown in the graph.

- **The middle value<sup>†</sup> for FISH was 1.16 micrograms per liter (mcg/L).**
  - This is slightly higher than women in the U.S. (0.64 mcg/L)<sup>1</sup> and in Canada (0.82 mcg/L)<sup>2</sup>.
- **3% of participants had mercury levels above the level considered safe for a developing fetus.** This level is 5.8 mcg/L and is shown as a green line in the graph.



- All **participants with mercury levels above 5.8 mcg/L reported eating more fish than recommended** in the MDH Fish-Eating Guidelines and were given individual advice to lower their mercury exposure based on their reported fish consumption.
  - Lake trout, walleye, and canned tuna were the species eaten too often, especially in summer. In general, up to one meal per month is the MDH guideline for eating walleye and lake trout. Advice for specific lakes may be more or less restrictive than this general guideline. For guidelines on specific lakes and general guidelines for MN fish, go here [www.health.state.mn.us/fish](http://www.health.state.mn.us/fish).
- Not everyone who ate more fish than recommended by the guidelines had a mercury level above 5.8 mcg/L. This is because **mercury is handled differently in different people, and mercury levels in fish vary between lakes.**
- Fish consumption varies by season and so can mercury levels, depending on the types of fish eaten.

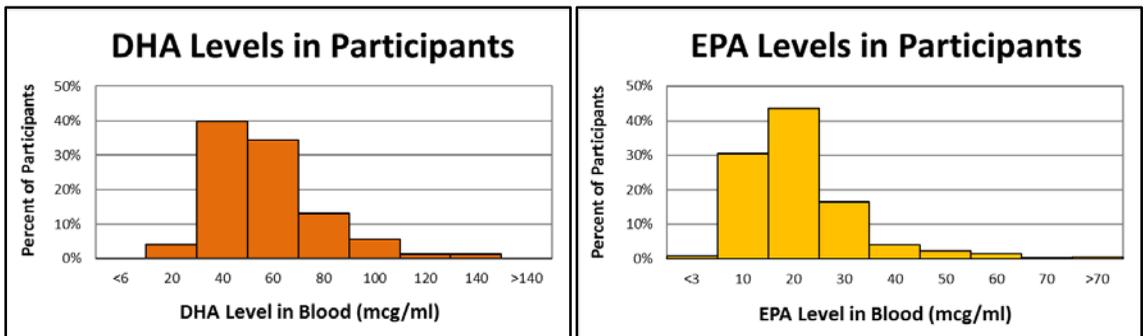
<sup>†</sup> The “middle value” is where half of participants were below and half were above the value. It is like an average. A middle value is also known as a “median” or “50<sup>th</sup> percentile”.

# Fatty Acids and Eating Fish

Omega-3 fatty acids come in more than one form. The types found in fish, called DHA and EPA, have been studied the most and appear to have the strongest health benefits.

## DHA and EPA blood results

- **The average DHA level in FISH participants was 47.0 micrograms per milliliter (mcg/ml).** This is above the U.S. average of 41.9 mcg/ml<sup>3</sup> for women age 19 to 50.
- **The average EPA level in FISH participants was 16.5 mcg/ml.** This is above the U.S. average of 13.7 mcg/ml<sup>3</sup> for women age 19 to 50.
- 37% of participants had both DHA and EPA at or above national averages.

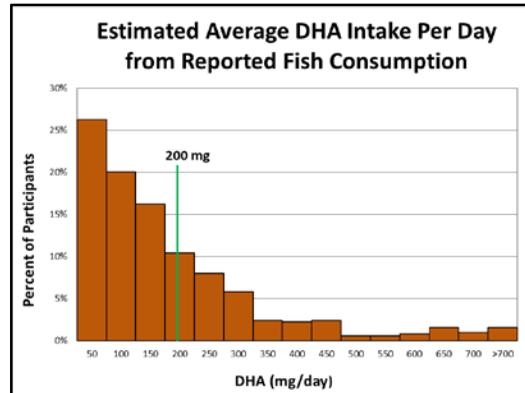


## Estimated DHA intake from reported fish consumption

DHA is important for brain and eye development in a fetus. Studies<sup>4</sup> show that getting about 200 milligrams (mg) of DHA per day (or 1400 mg per week) maximizes health benefits in a developing fetus. Currently, the exact level of DHA in blood that results from eating 200 mg DHA per day is not known. However, we do know the more DHA in your diet the higher the level of DHA in your blood.

DHA intake from eating fish was estimated from reported fish consumption and is shown in the graph.

- **27% of participants had estimated DHA at or above 200 mg/day.**
  - Most of these (94%) also had mercury at or below 5.8 mcg/L – the level considered safe for women who are or may become pregnant.
  - This shows that **women can get enough DHA while also keeping their mercury at a low level.**



## Take home these FISH bites!

**Most FISH participants could safely eat more fish that are low in mercury and other contaminants. Studies<sup>4</sup> show the benefits to developing babies are maximized when women who are or may become pregnant eat 1-2 fish meals per week.**

- Blood mercury levels in 97% of participants were at or below 5.8 mcg/L – the level considered safe for women who are or may become pregnant to protect the developing fetus.
- About half of participants reported eating fish less than once per week and can safely eat more fish low in mercury.

Follow the **MN Fish-Eating Guidelines** - [www.health.state.mn.us/fish](http://www.health.state.mn.us/fish)

- It's important to know that some fish species should only be eaten once a month. Participants who had high mercury levels were eating walleye and lake trout more than the one meal per month guideline.



## the FISH project



[www.sawtoothmountainclinic.org](http://www.sawtoothmountainclinic.org) – click on FISH Project link

Sawtooth Mountain Clinic  
218-387-2330

Grand Portage Health Service  
218-475-2235

<sup>1</sup> Mortensen, et. al. (2014). Total and methyl mercury in whole blood measured for the first time in the U.S. population: National Health and Nutrition Examination Survey (NHANES) 2011-12. Environmental Research.

<sup>2</sup> Health Canada 2015. THIRD REPORT ON HUMAN BIOMONITORING OF ENVIRONMENTAL CHEMICALS IN CANADA. Results of the Canadian Health Measures Survey Cycle 3 (2012–2013).

<sup>3</sup> CDC 2012. Second National Report on Biochemical Indicators of Diet and Nutrition in the U.S. Population.

<sup>4</sup> Ginsberg, et.al. (2015). Updated Risk/Benefit Analysis of Fish Consumption Effects on Neurodevelopment: Implications for Setting Advisories. Human and Ecological Risk Assessment: An International Journal.