

Fish Consumption Advisories - Current Topics

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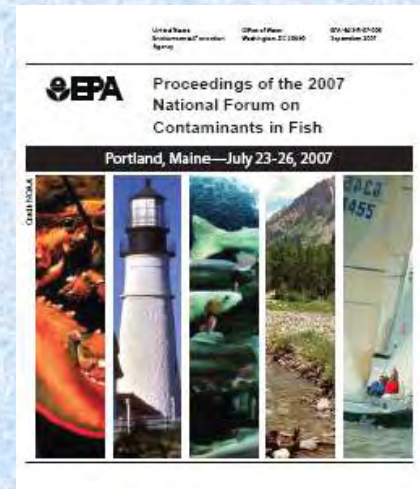
Making a Great Lake Superior Conference October, 2007

Fish Consumption Advisories

- Goal: Minimize exposure to contaminants in fish while promoting the many benefits of eating fish.

Fish Consumption Advisory Development

- National Forum on Contaminants in Fish
 - Sponsored by EPA
 - State & Tribal Fish Advisory Programs
- Great Lakes Consortium
 - Great Lakes Protocol: PCBs & Chlordane
 - Mercury Addendum, May 2007
 - Outreach
 - EPA grant to facilitate consistency



National Forum on Contaminants in Fish

July 2007

- Risk Assessment/Toxicology
- Fish Sampling and Analysis
- Biomonitoring
- Health Benefits of Fish Consumption
- Risks and Benefits
- Risk Communication

Risk Assessment / Toxicology

- Safe dose approach: If exposure is below the safe dose there should be no adverse health effects
 - US EPA risk assessment methods
 - Hazard & dose-response assessments are used to evaluate fish data to determine consumption advice
- PBDEs
 - EPA published draft risk assessment for PBDEs, December 2006

Risk Assessment / Toxicology (cont.)

- **Mercury** -International Mercury Conference, 2006
 - Human Health Panel Report (www.mercury2006.org)
- Warning children and women of child-bearing age to be careful about the species of fish they eat is justified - enough evidence showing that exposure of the fetus to methyl-mercury will affect children's development
- To increase the benefits and reduce the risks, consumers should choose fish with high levels of omega-3 fatty acids and low levels of methylmercury.
- To date, there is no evidence from human studies that selenium protects people from the toxic effects of mercury.

Fish Sampling and Analysis

- **PBDEs** – Two talks at the Forum
 - Total PBDE in DE Estuary fish is greater, on ave., than in fish elsewhere. Nevertheless, health risk appears relatively low. Good!
 - Washington State: some higher levels but not evaluated yet for health risk
- **EPA National Lake Fish Tissue Survey**
 - MN (17 lakes): PBDE levels not high enough to warrant advice to limit consumption
- **PFCs**
 - MN fish data for Mississippi River and some metro area lakes
 - Fish monitoring in other States/Tribes – Delaware River, North Carolina
 - No US EPA Risk Assessment
 - MN Risk Assessment for Groundwater contamination applied to fish data
 - Fish Advisories for Mississippi River and some Metro area lakes

Fish Sampling and Analysis (cont.)

- Great Lakes / Lake Superior Monitoring
 - States & Tribes
 - Routine monitoring by states: mercury and PCBs
 - Some special studies of other contaminants
 - Great Lakes Fish Monitoring Program
 - Historical and emerging contaminants
 - Ontario
 - Historical and emerging contaminants

Great Lakes Fish Monitoring Program (GLFMP) Contaminant List

- PCB congeners
- PCB co-planers
- Hexachlorobenzene
- Octachlorostyrene
- Lindane
- Alpha BHC
- Dieldrin
- Heptachlor epoxide-b
- Cis-chlordane
- Trans- chlordane
- Oxychlordane
- Cis- nonachlor
- Trans- nonachlor
- pp, -DDT
- pp, -DDE
- pp, -DDD
- Endrin
- Mirex (Lake Ontario Only)
- Toxaphene& homologs
- PBDEs
- Hg
- Fraction Lipid
- PCDD/Fs
- o **PCNs**
- *APEs*
- *PPCPs*
- *BFRs*

Biomonitoring

- Monitoring contaminants in fish is “biomonitoring” – indirect assessment of human exposure through fish consumption
- Alaska - Using mercury human biomonitoring to determine if fish consumption advice is needed
 - Previously no advice to limit consumption of Alaskan fish
- NYC residents - mercury exposure higher than national average; Asian women and higher income adults (published in EHP)
- WI - PBDEs in Great Lakes Charter Captains
 - PBDE exposure: increased with age, obesity, water bed use, hours spent outdoors, PCB and DDE levels, years of sportfish consumption, shellfish meals per year & lower income

Biomonitoring (cont.)

- Mercury in WI Residents
 - 2004 mercury biomonitoring project
 - highest exposures: Males, age over 50, sportfish consumption, ingestion of > 8 fish meals/month
 - New project to follow-up on highest exposures to evaluate effectiveness of the 2004 project as an educational tool (EPA GLNPO grant)
- Mercury Bloodspot Project
 - Measure mercury in residual blood spots from newborns in the US Lake Superior Basin (MN, MI, WI) (EPA GLNPO grant)

Benefits and Risks of Fish Consumption

- Benefits and risks depend on fish eaten and who eats the fish
- Fish are not all equal
- Benefits (women & kids)
 - Enhances fetal eye development
 - Increased duration of gestation
 - Cognitive benefits
- Benefits (Adults)
 - Reduces cardiovascular risks

Eat Fish

- If Fish Consumption Advice is followed
 - Developmental benefits
- If Fish Consumption Advice leads to fish avoidance
 - Increases risks

Balancing Risks and Benefits

IOM Report 2006

- Good review of available literature
- Include seafood in diet
- Women and kids = follow EPA/FDA advice
- General Population = eat 2 meals fish per week. If eat more then choose a variety of species.
- Qualitative not quantitative assessment

2004 EPA / FDA Advisory

- For women of childbearing age and children
 - Four species on “Do not eat” list
 - Shark, swordfish, king mackerel and tilefish
 - Eat variety of other species 12oz (2 meals/week)
 - Except albacore tuna only 1 meal/week in addition to a meal of other fish
- Defers to State advisories for locally-caught fish

Eat Fish

- Overall agreement that people should eat fish, most people should eat more fish
 - Make choices –
 - Eat low mercury, high omega-3 fish
 - Some fish are high in mercury
 - Avoid or eat in moderation




Great Lakes Protocol – Benefits

- Fish can be part of a healthy, balanced diet.
 - generally low in saturated fat and high in protein
 - contain a number of vitamins and minerals, and
 - are the primary food source for omega-3 fatty acids
 - beneficial during fetal brain and eye development
 - may lower the risk of heart disease in adults.
- Health experts recommend that regular consumption of fish be included as part of a healthy diet.

Lake Superior Basin Fish Consumption Advice

- MN, WI, MI, Tribes, Ontario
- GLNPO Fish Monitoring Program Website
- <http://www.epa.gov/glnpo/monitoring/fish/index.html>

A Family Guide to Eating Fish from Wisconsin



Safe eating guidelines for fish from Wisconsin lakes, ponds, and rivers and for fish bought in restaurants and stores.

Masinaigan Supplement
Published by the Great Lakes Indian Fish & Wildlife Commission Fall 2000

How to enjoy fish safely
Facts about fish and nutrition

Autumn Thanksgiving

The name	The name
What it looks and tastes like	What it looks and tastes like
The season	The season
What it tastes like	What it tastes like
What it is good for	What it is good for
What it is bad for	What it is bad for

Introduction

For centuries the Great Lakes Basin has served as the primary source of food. Today, wild fish, game and plants continue to be important sources of nutrition for Great Lakes Indians. In addition, the Great Lakes Basin is a source of recreation and enjoyment for all. The Great Lakes Indian Fish & Wildlife Commission (GLFWC) has prepared this supplement as an effort to support tribal members' efforts to continue their traditional harvesting practices, provide traditional foods as a source of important food sources, and protect the health and safety of recreational consumers. The following articles are some examples:

- Making decisions about which fish have chemical contaminants listed in fish.
- Health benefits of eating fish.
- GLFWC's fish sampling and testing program for inland waters and Lake Superior.
- Consumption of fish and game from inland waters and Lake Superior.
- Food and Drug Administration (FDA) and
- Fisheries Inland for Lake Superior Fish.


Eat fish often?



MDH Minnesota Department of Health

Michigan's Guide to Eating Fish

Guide to Eating Ontario Sport Fish
2007-2008 edition



Protecting our environment. **Ontario**

2007 MICHIGAN FAMILY FISH CONSUMPTION GUIDE
Important facts to know if you eat Michigan fish



Michigan Department of Natural Resources 1-800-487-6882
Michigan's Guide to Eating Fish