

MERCURY AND FISH CONSUMPTION

FACT SHEET, OCTOBER 2006

STAY HEALTHY!
STOP MERCURY



What do we know about mercury exposure and fish consumption?

Anywhere between three and 15 million people in Europe have mercury levels around one of the recommended upper safety limits, and a percentage of these people have levels ten times as high. This is a level at which there are clear neurodevelopmental effects.¹

Eating contaminated fish is the major source of human exposure to methylmercury. The populations most sensitive to the compound are foetuses, infants, and young children. Consequently, fish consumption by pregnant women, young children and women of childbearing age is a particular cause for concern because of the likelihood of mercury exposure. Methylmercury, an organic compound, is the most toxic form of mercury to which humans are normally exposed. Methylmercury bioaccumulates with larger fish, which eat smaller ones, containing much higher levels than non-predatory fish.¹

In order to assess mercury exposure, member states of the European Union have submitted data on fish consumption to the European Food Safety Authority (EFSA). However, much information is missing. For a better measure of just how many people in Europe are at risk, national intake data on the amounts of fish and seafood consumed per meal and per week are required. This data should include preferred fish/seafood species, including details of fresh and canned fish, and information about the consumer, such as gender and age.² The fish consumed in Europe comes from all over the world so levels of methylmercury in European and in imported fish must be calculated as was done in a recent UK study.³ However, studies have found higher than average concentrations in fish from the Mediterranean Sea.⁴

The actual mercury levels found in our bodies can be assessed through "human biomonitoring", that is, analysis of samples of blood, urine and so on. At present, no comprehensive European or global human biomonitoring programme for mercury exists to indicate with certainty to what extent certain populations may be at risk.⁵

"Eating contaminated fish is the major source of human exposure to methylmercury. Until mercury contamination can be reduced, sensitive groups in the population can best protect their health by avoiding certain kinds of fish and eating other kinds of fish instead."

European Recommendations

The European Food Safety Authority (EFSA) recommends that “women of childbearing age (in particular, those intending to become pregnant), pregnant and breastfeeding women as well as young children select fish from a wide range of species, without giving undue preference to large predatory fish such as swordfish and tuna”.⁶

Following this recommendation, the European Commission released an “Information Note” based on the need to give more specific advice to vulnerable groups and to provide them with concrete information.⁷ It suggests that women who might become pregnant, women who are pregnant or are

breastfeeding and young children should not eat more than one small portion (less than 100 g) per week of large predatory fish, such as swordfish, shark, marlin and pike. If they do eat a portion of this fish, they should not eat any other fish during the same week. Nor should they eat tuna more than twice per week.⁸

The European limits for allowable levels of mercury in fish (0.5 mg/kg for fish in general, but 1.0 for certain larger predatory species including shark, swordfish, marlin, tuna, and orange roughy)⁹ are based on the guideline levels established by Codex Alimentarius in 1991.¹⁰

National Policies and Actions

The EU member states vary widely in their recommendations on fish consumption. For example, Hungary and Luxembourg do not have any recommendations for vulnerable groups whereas other countries have recommendations that are stricter than those of the European Food Safety Authority (EFSA). Below are some examples.

CZECH REPUBLIC The recommendations are for the most part based on those of EFSA. Women considering pregnancy, pregnant women, breastfeeding mothers and children up to three years of age should not consume shark, swordfish and large predatory freshwater fish, such as pike, pike-perch and asp. Other types of fish, such as white tuna and mackerel, might also contain elevated levels of mercury. High-risk groups are therefore advised not to consume more than 170 g of these fish (i.e. one portion) per week. The government also recommends that specific Czech authorities monitor the levels of mercury in fish caught locally in rivers and streams. If elevated mercury levels are found, they are advised to recommend that high-risk groups do not consume more than 170 g per week.

DENMARK The Ministry of Family and Consumer Affairs warns that women who are considering pregnancy, are pregnant or breastfeeding, and children below 14 years should limit their intake of tuna, skate/ray, halibut, escolar, swordfish, shark, pike, perch and zander. As a guide, they suggest these groups should eat not more than 100 g of large predatory fish species per week. Canned tuna generally has a lower mercury content,¹¹ and consumption does not need to be restricted to the same extent.

FINLAND The Finnish National Food Agency recommends limiting the consumption of certain fish for some groups. It states that children, young people and people of the reproductive age group may eat salmon caught in the Baltic Sea, large herring, pike caught in the sea or inland waters, and predatory

fish from inland waters once or twice a month. However, the Agency warns pregnant women and breastfeeding mothers not to eat pike due to the mercury risk. Its statements also state that consumers who eat fish from inland waters on an almost daily basis should reduce their consumption of large perches, pike-perches and burbot because these predatory fish accumulate mercury.¹²

FRANCE Recommendations in France reinforce those of EFSA by stating that pregnant and breastfeeding women, as well as young children, should avoid eating only predatory fish species.¹³ As a precautionary measure, pregnant and breastfeeding women are advised not to eat more than 60 g of wild predatory fish per week, and young children not more than 150 g, in addition to their consumption of non-predatory fish. In 2006, the French authority AFSSA recommended these groups avoid swordfish, marlin and siki.¹⁴

IRELAND On 18 March 2004, The Food Safety Authority of Ireland (FSAI) recommended that pregnant and breastfeeding women, women of childbearing age and young children select fish from a wide range of species but avoid swordfish, marlin and shark, and limit consumption of tuna to one fresh tuna steak (approximately 8 oz or 227 g) or two medium-sized cans (8 oz) per week.¹⁵ Ireland currently monitors “fish landed at major Irish fishing ports” and reports that the levels of mercury have been low at between 0.02 and 0.27 mg/kg. However, the catches do not usually include shark, swordfish, marlin and tuna.¹⁶ The FSAI is currently planning a survey of total mercury and methylmercury levels in tuna, marlin, shark, and swordfish.¹⁷

SPAIN The Spanish Food and Safety Agency does not establish general fish recommendations to consumers.¹⁸ However, the Agency has planned to provide specific recommendations to vulnerable groups suggesting a reduced consumption of high mercury fish.

SWEDEN Sweden's National Food Administration makes a number of recommendations on limiting fish consumption based on a variety of contaminants. Women who are pregnant or thinking of becoming pregnant and breastfeeding women are advised never to eat large halibut, cod liver, eel, shark, swordfish, nor tuna (fresh or frozen).¹⁹

UNITED KINGDOM The UK advises that pregnant and breastfeeding women, and women who intend to become pregnant, limit their consumption of tuna to no more than two

medium-sized cans or one fresh tuna steak per week. These women are also advised to avoid eating shark, swordfish and marlin. Children under 16 are advised to avoid eating shark, swordfish and marlin. Other consumers should eat no more than one portion of shark, swordfish or marlin per week but do not need to limit their consumption of tuna.²⁰

BULGARIA AND LITHUANIA Same as EFSA (see above).

HUNGARY, LUXEMBURG AND SLOVAKIA No fish guidelines.

Seafood Recommendations to Minimise Harm

The table below lists commonly consumed fish and some of the most stringent (and therefore the most protective) national recommendations that exist in Europe or North America. The aim is to help readers minimise any potential adverse effect. Depending on where it is caught or sold, the same

type of fish may contain different levels of mercury. This table was compiled using government responses to our Mercury Questionnaire and research. Please also refer to national guidelines for these fish and especially for other, including local, fish.

LARGE PREDATORS/HIGHER LEVEL		
LATIN NAME	ENGLISH NAME	RECOMMENDATION
Lophius species	Anglerfish (or monkfish)	Limit – Pregnant and breastfeeding women (Denmark)
Salvelinus alpinus	Arctic charr (or blueback trout, silver trout, Sunapee trout, white trout)	Avoid – Pregnant and breastfeeding women (Norway) Limit to once a month – Other groups (Norway)
Aspius aspius	Asp	Avoid – Women intending to become pregnant, breastfeeding women, women of childbearing age, and children under three years old (Czech Republic)
Pomatomus saltatrix	Bluefish	Avoid – Women intending to become pregnant, breastfeeding women, women of childbearing age, and young children.
Sarda Sarda	Bonito	Limit – Pregnant and breastfeeding women (Germany)
Lota lota	Burbot (or ling)	Limit to once a week – All consumers (Sweden)
Anarhichas lupus	Catfish	Avoid – Women intending to become pregnant, breastfeeding women, women of childbearing age, and young children
Anguilla species	Eel	Limit to once a week – All consumers (Sweden)
Hippoglossus hippoglossus	Halibut	Limit to once a week – All consumers (Sweden)
Scomberomorus cavalla	King mackerel	Avoid – Pregnant women, women intending to become pregnant, breastfeeding women and children (The Netherlands), women in childbearing age (United States, FDA/EPA)
Makaira species	Marlin	Avoid – Women intending to become pregnant, breastfeeding women, women of childbearing age and young children (Ireland) Limit to once a week – All other consumers (Ireland)
Perca fluviatilis	Perch	Limit – All consumers (Sweden)
Esox lucius	Pike	Avoid – Pregnant and breastfeeding women (Finland & Norway), women of childbearing age and young children (Czech Republic) Limit to once a month – All other adults (Norway)
Sebastes marinus	Redfish	Avoid – Pregnant and breastfeeding women (Norway) Limit to once a month – Other groups (Norway)
Lutjanidae	Red snapper	Limit to 3 times a week – Women intending to become pregnant, pregnant and breastfeeding women, and young children (United States, FDA)
Istiophorus platypterus	Sailfish	Avoid – Women intending to become pregnant, breastfeeding women, women of childbearing age, and young children
	Salmon, wild (Baltic Sea, including Gulf of Bothnia)	Limit to once a month – Women of childbearing (Sweden and Finland)
Salmo trutta	Salmon trout, wild (Baltic Sea, including Gulf of Bothnia)	Limit to once a month – Women of childbearing age (Sweden)

LARGE PREDATORS/HIGHER LEVEL

LATIN NAME	ENGLISH NAME	RECOMMENDATION
Sander vitreus vitreus	Sander or pike-perch (zander, walleye)	Avoid – Women of childbearing age, pregnant and breastfeeding women, and young children (Czech Republic) Limit to once a week – All consumers (Sweden)
Lepidopus caudatus Aphanopus carbo	Scabbard fish	Limit – Pregnant and breastfeeding women (Germany)
Dicentrarchu	Sea bass	Limit – Pregnant and breastfeeding women (Germany)
Pagellus species	Sea bream (or pandora)	Avoid – Women intending to become pregnant, breastfeeding women, women of childbearing age, and young children
All species	Shark (all species)	Avoid – Women intending to become pregnant, breastfeeding women, women of childbearing age (Sweden). Children (Ireland, The Netherlands, United Kingdom and Czech Republic), women in childbearing age (United States, FDA/EPA)
	Snake mackerel (or escolar)	Limit to once a week – Women intending to become pregnant, pregnant women, infant and children under the age of 14 (Denmark)
Acipenser species	Sturgeon	Avoid – Women intending to become pregnant, breastfeeding women, women of childbearing age, and young children
Xiphias gladius	Swordfish	Avoid – Women intending to become pregnant, breastfeeding women, women of childbearing age and children (Ireland, The Netherlands, United Kingdom and Czech Republic), women in childbearing age (United States, FDA/EPA) Limit to once a week – All others (Ireland)
Caulolatilus species	Tilefish – Golden bass or golden snapper (Gulf of Mexico)	Avoid – Women of childbearing age, pregnant and breastfeeding women, and young children (United States, FDA/EPA)
	Trout (large)	Avoid – Pregnant and breastfeeding women. (Norway) Limit to once a month – Other groups (Norway)
Thunnus species	Tuna, Tunny (albacore tuna or “white tuna”, bluefin, bigeye, yellowfin tuna)	Avoid - Women intending to become pregnant, breastfeeding and pregnant women (Sweden), children (The Netherlands)

SMALL PREDATORS AND NON-PREDATORS/LOWER LEVEL

LATIN NAME	ENGLISH NAME	MERCURY LEVEL
Engraulis encrasicolus	Anchovy	Low level
Cyprinus carpio	Carp	Low level
Mercenaria mercenaria, Mya arenaria	Clams	Low level
Gadus Morhua, Gadus macrocephalus	Cod (Atlantic and Pacific)	Check local/national fish consumption guidelines
All species	Crab	Low level
All species	Crayfish	Low level
Order Sepiida	Cuttlefish	Low level
Plaice, pleuronectes platess, pleuronectes limande, leuronectes flesus	Flatfish (flounder, plaice, sole)	Low level
Melanogrammus aeglefinus	Haddock	Low level
Genus Urophycis	Hake	Check local/national fish consumption guidelines
Clupea harengus	Herring (Baltic Sea, including Gulf of Bothnia)	Check local/national fish consumption guidelines. Limit to once a month – Women of childbearing age (Sweden)
All species	Mussels	Low level
Hoplostethus species	Orange roughy (deep sea perch)	Check local/national fish consumption guidelines
Ostrea	Oyster	Low level
Pollachius pollachius	Pollock	Low level
Oncorhynchus mykiss	Rainbow trout (farmed)	Low level
Mullus surmuletus	Red mullet	Low level
All species	Salmon (farmed)	Low level
Sardina pilchardus	Sardine	Low level
All species	Scallop	Low level
All species	Shrimp	Low level
Loliginidae, ommastrephidae	Squid/Calamari	Low level
Oreochromis spp	Tilapia	Low level
Cynoscion regalis	Weakfish (sea trout)	Low level

HEAL & HCWH Recommendations

Addressing the mercury problem involves several measures. We need to raise public awareness so that vulnerable groups have the opportunity to reduce their methylmercury intake. While it is important to recognise that eating fish provides excellent nutrition, certain kinds of fish now contain high levels of mercury. Until mercury contamination can be reduced, sensitive groups in the population can best protect their health by avoiding certain kinds of fish and eating other kinds of fish instead. Formulating and agreeing such advice should be a priority for European environmental and health policy. In addition, mercury pollution and global use need to be reduced, which will lead to lower mercury levels in fish.

The Health & Environment Alliance and Health Care Without Harm Europe believe that more protective recommendations than those currently existing should be issued and promoted by EFSA and national governments for women of childbearing age, pregnant women, breastfeeding women, and children. These vulnerable groups should be advised not to consume large predatory fish, including shark, swordfish, marlin, king mackerel, orange roughy, grouper, or albacore tuna. There are also fish with medium mercury content, which should be consumed in limited amounts and frequency.

It should be made clear to the general public that just one serving of fish that is high in mercury may fill an advised mercury quota for several days or even weeks. This message may conflict with other guidance on weekly food consumption. Most high-mercury fish are not particularly good sources of fish oil. It may therefore be better to eat smaller fish, which are lower in the food chain and therefore accumulate less mercury. These smaller fish are excellent sources of protein and provide omega 3 fatty acids that are important to cardiac function and good health.

National governments should start, or continue, the testing of both local and imported fish for mercury. They should also begin, or continue, investigations on mercury levels in their populations, particularly women and children, through human biomonitoring activities. This will help better assess exposure and guide the formulation of recommendations on fish consumption.

Finally, we believe that methyl mercury should be one of the chemicals that is tracked in the European-wide biomonitoring pilot project.

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What can you do?

1. The largest source of mercury emissions into the environment is from coal combustion. Join with your neighbors to reduce fossil-fuel based energy consumption by moving to clean energy generation and consumption.
2. Find out whether your Health Agency has issued fish consumption recommendations.
3. Ask your Health or Food Safety Agency whether they have tested local and imported fish for mercury levels.
4. Check with your local school to see if meals meet recommended guidelines for mercury exposure in children.
5. Ask your supermarket/fishmonger to post information about mercury in fish.
6. Ask your doctor to provide information about mercury in fish.

Resources

European Food Safety Authority Precautionary:

Advice given to vulnerable groups.

www.efsa.eu.int/press_room/press_release/258_en.html

What You Need to Know About Mercury in Fish and Shellfish, US Dept of Health & EPA:

www.cfsan.fda.gov/~dms/admehg3.html

MercuryActionNOW:

Sponsored by NGO Physicians for Social Responsibility

www.mercuryaction.org

Safe Fish CHEC List For Children, Teens and All Women of Child-bearing Age:

www.checnet.org/healthehouse/education/quicklist-detail.asp?Main_ID=716



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"Stay Healthy, Stop Mercury" campaign

Health and Environment Alliance (HEAL) and Health Care Without Harm Europe (HCWH) are joining forces to mobilise the health community in Europe for a global ban on mercury. The activities are focused on raising awareness of the risks to health, especially for babies and pregnant women, and on working with women and health care professionals on how they can protect themselves and the environment from mercury exposure.

