



Fact Sheet

MERCURY AND FISH CONSUMPTION

Fish are an excellent source of high-quality protein and are low in saturated fat which makes them a healthy food choice. However, certain types of fish should be eaten in moderation because mercury levels in those fish sometimes exceed Canada's mercury guideline. Health Canada advises consumers to limit their consumption of swordfish, shark or fresh and frozen tuna to one meal per week. For young children and women of child-bearing age, the recommended limit for swordfish, shark or fresh and frozen tuna is one meal per month. Note that this restriction does not apply to canned tuna.

What is mercury?

Mercury is a naturally-occurring element which is found in soil and rocks and also exists in lakes, streams and oceans. In addition to natural sources, mercury is released into the environment by human activities such as pulp and paper processing, mining operations, and burning garbage and fossil fuels.

We absorb small amounts of mercury from a number of sources, both natural and artificial, in our immediate environment. These include amalgam dental fillings, air and water pollution, and trace amounts in food. Of the different kinds of food we eat, fish is usually the largest source of mercury.

It is well known that high amounts of mercury can damage the nervous system of people and animals. In trace amounts, however, the effects are not clearly known. Long-term studies are being conducted to determine the effects of low levels of mercury, especially on young children.

Mercury in fish

Mercury exists in two different forms, the organic and the inorganic. In the aquatic environment, the most prevalent form of mercury is methyl mercury, the organic form, which binds tightly to the proteins in fish tissue. Most fish have trace amounts of methyl mercury. The level of mercury found in a fish is related to the level of mercury in its aquatic environment and its place in the food chain. Mercury tends to accumulate in the food chain, so large predatory fish species tend to have higher levels than non-predatory fish or species at lower levels in the food chain.

Health Canada's guideline for total mercury content in commercial marine and freshwater fish is 0.5 parts per million (ppm). It was first set in the 1970s and, based on a recent re-evaluation, is still considered appropriate to protect the health of Canadians from the toxic effects of methyl mercury. The Canadian limit is more stringent than the limits set in many other countries, for example the United States, where the limit (for methyl mercury alone) is 1.0 ppm.

The CFIA's role

The CFIA regularly tests commercial fish and shellfish to determine if it meets the Canadian mercury guideline and to establish baseline levels for particular species in particular aquatic environments. Laboratory tests of marine fish consumed in Canada consistently show that average mercury levels are well below the 0.5 ppm limit, with the exceptions of swordfish, shark, and fresh and frozen (not canned) tuna. Since most marine fish species are well below the limit, there are no restrictions on their consumption. This includes the most commonly consumed fish and seafood, such as salmon, cod, pollock, sole, shrimp, mussels, scallops and canned tuna.

The CFIA continues to regularly test both exempted and non-exempted species for mercury.

Exempt species and limits on consumption

Certain fish species sold in Canada, namely, shark, swordfish, and fresh and frozen tuna, contain mercury at levels that are known to exceed the 0.5 ppm guideline. Mercury levels for these species generally remain between 0.5 and 1.5 ppm, allowing for occasional consumption. Therefore, these species (Note: not canned tuna) are exempted from the 0.5 ppm guideline and, in their case, another risk management strategy is followed, namely, issuance of advisories recommending appropriate restrictions on (amounts and frequencies of) consumption. In this way, these species can continue to be enjoyed by consumers as part of an occasional diet.

Consumption of shark, swordfish and fresh and frozen tuna should be restricted to one meal per week. For young children, pregnant women, and women of child-bearing age, consumption should be limited to one meal per month. Because of the nutritional value of fish, these species continue to be available to Canadian consumers, with advice to limit consumption to avoid exposure to hazardous levels of mercury.

It is important to note that this exemption does not apply to canned tuna. The species used in canned tuna tend to be smaller and shorter lived than those used in the fresh and frozen market; therefore, the level of mercury found in canned tuna tends to be lower than that of fresh and frozen tuna.

Freshwater fish

Levels of mercury in freshwater fish vary according to the lake or river system from which they are harvested, and as with marine fish, predatory species tend to have higher levels than non-predators. All commercial, freshwater fishing areas are surveyed and where high levels are found, they are closed to commercial fishing or restrictions are placed on catching and marketing certain species.

With regards to recreational fishing, it is normally the responsibility of provincial governments to monitor mercury levels and to set and publicize safe consumption standards and guidelines. For more information regarding the safety of recreationally-caught freshwater fish for consumption, contact provincial authorities.