

Technical Notes

The following is an excerpt from the [Mercury in Fish in Alberta Water Bodies 2009-2013](#) report:

To protect public health, Health Canada has proposed mercury guidelines, and advisories for different fish consumer groups (Health Canada, 1979; Feeley and Lo, 1998; Health Canada 2007, Feeley 2008) based on total mercury (THg) or methylmercury (MeHg). These values are expressed either in units of mg THg or MeHg per g of fish flesh or as a Provisional Tolerable Daily Intake (pTDI) in units of mg THg or MeHg per kg of consumer body mass per day:

- 1. 0.5 mg THg/g for all commercial fish/seafood (Guideline);*
- 2. 1.0 mg THg/g for certain commercial fish species such as fresh and frozen tuna, shark, swordfish, escolar, marlin and orange roughy which are known to be consumed less frequently (Advisory); and*
- 3. 0.2 mg THg/g for subsistence consumers (Advisory)*
- 4. 0.2 mg MeHg/kg bw/d pTDI for women of reproductive age and young children (Guideline);*
- 5. 0.47 mg MeHg/kg bw/d pTDI for the general population (Guideline).*

The guidelines for commercial fish/seafood are used as a general screening criterion, with the knowledge that most species of commercial fish usually contain lower levels (< 0.1 mg/g) of mercury. This guideline is enforceable by the Canadian Food Inspection Agency (CFIA) for commercial fish. For example, the CFIA has been monitoring total mercury (THg) levels in commercial fish caught from Lake Athabasca in Alberta since the early 1990s. The recommendation for subsistence consumers proposed by Health Canada was put in place in the 1970's when the Medical Services Branch became aware of long term fish consumption patterns of over 100 g/day (Health Canada 1979). The recommendation is for First Nations and Inuit people relying on subsistence fresh water fishing. First Nations and Inuit subsistence consumers should limit their fish consumption if the mercury levels in the fish they are eating are over 0.2 mg THg/g of fish tissue. Consumption of fish containing over 0.5 mg THg/g of fish tissue should be avoided by all consumers. Fish consumption advisories are developed based on these pTDIs. These advisories provide the public with a warning of potential health risk resulting from consuming local mercury containing fish. Fish consumption advisories are designed to minimize the potential health risks to fish consumers who can voluntarily restrict their fish consumption.

The criteria for issuing fish consumption advisories are:

- 1. If mercury levels are higher than 0.5 mg/kg (commercial fishing guideline), the advisory would be to "avoid consuming fish";*
- 2. If mercury levels are between 0.2 - 0.5 mg/kg (Health Canada recommendation for subsistence consumers), the advisory would provide "consumption limits";*
- 3. If mercury levels are less than 0.2 mg/kg, an advisory would not be issued;*
- 4. If the fish sample size is less than 5 fish per location sampled, an advisory would not be issued; and*
- 5. If the lakes are used for commercial fishing, advisories would not be issued until after consulting with the Canadian Food Inspection Agency.*

For more information and abovementioned references please see the [Mercury in Fish in Alberta Water Bodies 2009-2013](#) report.