Mercury exposure in Canada's northern indigenous communities

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Mercury exposure is common in communities in Canada's north, especially in indigenous peoples who consume fish and other wild food with high mercury content, yet current clinical guidelines are not adequate for this population. A review in *CMAJ Canadian Medical Association Journal* provides guidance for health care providers on the effects of mercury exposure and how to manage it in patients who consume diets high in fish and marine animals.

"Communities that frequently consume predatory fish and/or marine mammals have elevated mercury exposure," states Dr. Catherine Pirkle, Office of Public Health Studies, University of Hawaii, Manoa, Honolulu, United States. "It is important for clinicians to be clear on the potential risks, the complexity of the underlying epidemiological data, and how to approach, in a culturally sensitive manner, communities where mercury exposure may be a concern."

People are usually exposed to mercury through diets of fish and other marine animals. Because the diets of some indigenous people in northern Canada are high in fish and marine mammals, these people are at greater risk of the negative health effects of mercury.

Mercury exposure in pregnant women can have multiple effects in children, affecting brain development. In adults, mercury poisoning can cause vision changes, numbness in extremities, muscle weakness, cognitive changes and even death. Symptoms of mercury poisoning are often difficult to detect and vary between people, requiring diagnosis by

a toxicologist or neurologist.

The Nunavik Child Development Study, conducted by Laval University professor Gina Muckle, which for nearly 20 years has been following a cohort of children recruited before birth, found blood mercury concentrations above the Canadian guidance value in 16.9% of school-aged children. In another study of Inuit women aged 18-39 in northern Quebec, 53.3% had blood levels above the guidance value; the average in Canadians is 2.2% (Canadian Health Measures Survey).

Mercury levels vary widely in wild foods and are influenced by location, according to Melanie Lemire, professor with the Department of Social and Preventive Medicine at Université Laval in Quebec. To help health care providers recommend appropriate consumption levels, the authors have included tables with consumption guidelines and blood mercury levels and information on how to test.

The authors caution that there should be a balance between appropriate consumption and overconsumption of wild foods with mercury; if physicians recommend complete avoidance, people may not have enough nutritious food to eat.

"Mercury exposure is one of many health concerns facing northern Canadian communities," write the authors. "Counselling to reduce exposure must recognize and address wider food security issues and nutritional challenges, or it will unlikely be effective."

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