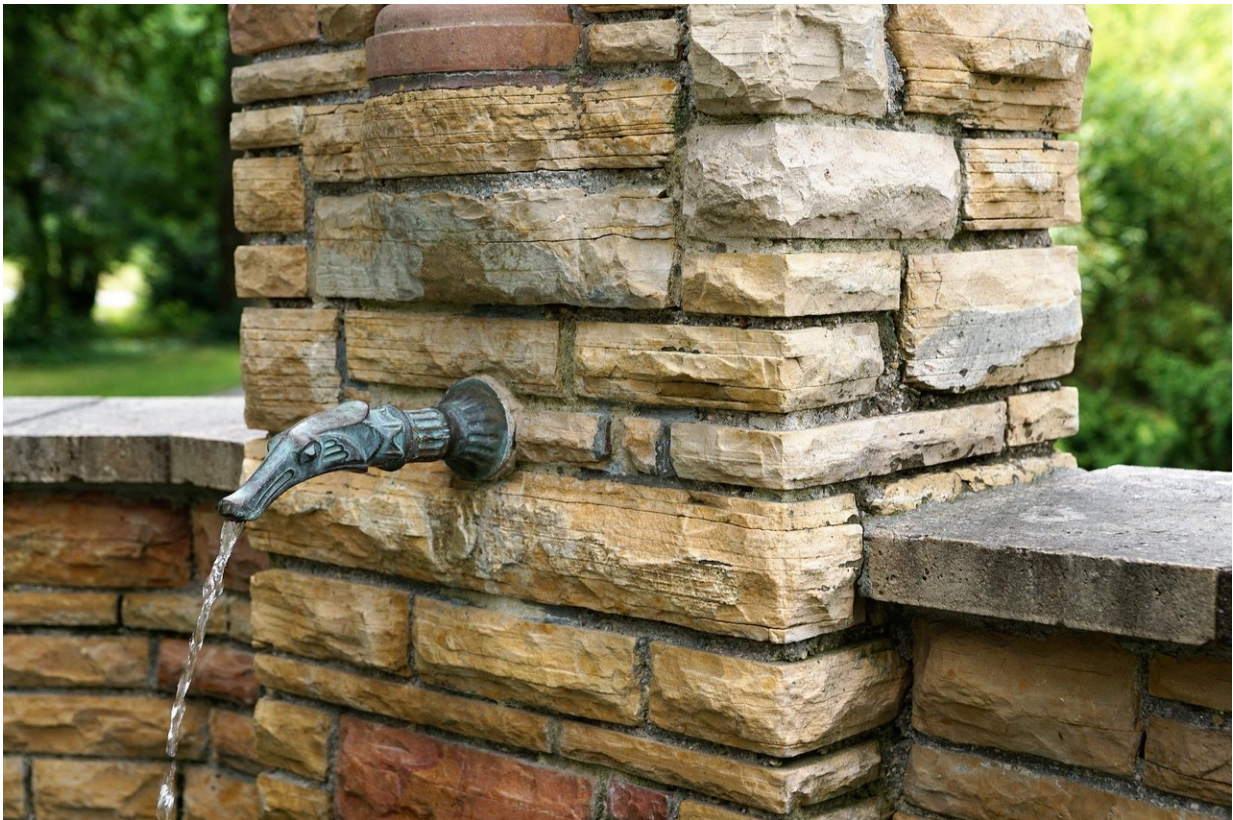


Fluoride levels in pregnant women in Canada show drinking water is primary source of exposure

October 10 2018



Credit: CC0 Public Domain

A new study led by York University researchers has found that fluoride levels in urine are twice as high for pregnant women living in Canadian

cities where fluoride is added to public drinking water as for those living in cities that do not add fluoride to public water supplies.

The study "Community Water Fluoridation and Urinary Fluoride Concentrations in a National Sample of Pregnant Women in Canada" was published today in *Environmental Health Perspectives*. It is the first study in North America to examine how [fluoride](#) in [water](#) contributes to urinary [fluoride levels](#) in [pregnant women](#). The research was conducted as part of a larger study funded by the National Institutes of Health (NIH) investigating whether early life exposure to fluoride affects the developing brain.

"We found that fluoride in drinking water was the major source of exposure for pregnant [women](#) living in Canada. Women living in fluoridated communities have two times the amount of fluoride in their urine as women living in non-fluoridated communities," said Christine Till, an associate professor of Psychology in York's Faculty of Health and lead author on the study.

The Maternal Infant Research on Environmental Chemicals (MIREC) study recruited 2,001 pregnant women between 2008 and 2011. The women lived in 10 large cities across Canada. Seven of the cities (Toronto, Hamilton, Ottawa, Sudbury, Halifax, Edmonton and Winnipeg) added fluoride to municipal water while three (Vancouver, Montreal and Kingston) did not.

Urine samples were collected during each trimester of pregnancy for over 1,500 women. Fluoride levels in municipal water treatment plants that provided water to each woman's home were obtained. Information about each woman's demographics, lifestyle and medical history was also collected.

In addition to fluoridated water, sources of fluoride can include

toothpastes, mouth rinses, as well as processed beverages and food, especially those made with fluoridated water. Beyond water, products such as tea have previously been found to have high concentrations of natural fluoride.

In this study, fluoride level in water was the main determinant of fluoride level in the women's urine. Higher consumption of black tea was also correlated with higher levels of urinary fluoride in pregnant women.

The levels of fluoride among pregnant women living in fluoridated communities in Canada were similar with levels reported in a prior study of pregnant women living in Mexico City where fluoride is added to table salt.

"This finding is concerning because prenatal exposure to fluoride in the Mexican sample has been associated with lower IQ in children. New evidence published today in *Environment International* also reported an association between higher levels of fluoride in pregnancy and inattentive behaviours among children in the same Mexican sample," said Till.

The research team, including experts from Simon Fraser University, Université Laval, Indiana University, University of Montreal and Cincinnati Children's Hospital, is investigating whether prenatal exposure to fluoride in Canadian children results in IQ deficits, similar to the Mexican study.

Fluoride has been added to public drinking water in Canadian and American communities since the 1940s as a means of preventing tooth decay. Today, about 40 per cent of Canadians and 74 percent of the U.S. population on public water supplies receive fluoridated water.

More information: Christine Till et al. Community Water Fluoridation and Urinary Fluoride Concentrations in a National Sample of Pregnant Women in Canada, *Environmental Health Perspectives* (2018). [DOI: 10.1289/EHP3546](https://doi.org/10.1289/EHP3546)

Morteza Bashash et al. Prenatal fluoride exposure and attention deficit hyperactivity disorder (ADHD) symptoms in children at 6–12 years of age in Mexico City, *Environment International* (2018). [DOI: 10.1016/j.envint.2018.09.017](https://doi.org/10.1016/j.envint.2018.09.017)

Provided by York University

Citation: Fluoride levels in pregnant women in Canada show drinking water is primary source of exposure (2018, October 10) retrieved 3 May 2024 from <https://medicalxpress.com/news/2018-10-fluoride-pregnant-women-canada-primary.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--