

Globe Life

Ontario fluoride may make minor difference

The province's widespread fluoridation appeared to offer little advantage over treatment-wary Quebec

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When it comes to fluoridating drinking water, Ontario and Quebec couldn't be further apart. Ontario has the country's highest rate of adding the tooth-enamel-strengthening chemical into municipal supplies, while Quebec has one of the lowest, with practically no one drinking fluoridated water.

But surprisingly, the two provinces have very little difference in tooth-decay rates, a finding that is likely to intensify the ongoing controversy over the practice of adding fluoride to water as a public health measure.

Quebeckers have more cavities than people in Ontario, but the difference is slight. Among children 6 to 19, considered the most decay-prone part of the population, the rate in Ontario was lower by less than half a cavity per child.

In the 6-11 age group, Ontario kids have 3.5 per cent fewer cavities than those in Quebec: 1.7 cavities compared to 1.76 in Quebec.

In the 12-19 age group, Ontario youths have 15.8 per cent fewer cavities than those in Quebec: 2.35 cavities compared to 2.79.

Details of the cavity rates in the two provinces have been compiled by [Statistics Canada](#) in a study it conducted recently into the health status of Canadians. Experts peered into the mouths of more than 5,000 Canadians from 2007 to 2009, tallying the number of cavities and teeth with filings, to try to get an idea of the state of oral health of the nation.

After a request from The Globe and Mail for a breakdown of the cavity rates by province, Statistics Canada tabulated the figures for Ontario and Quebec, where it said it had a sufficient number of people to be a representative sample.

Statscan said it couldn't compile meaningful data for [British Columbia](#) and Alberta, which are in a similar situation. British Columbia has practically no one drinking fluoridated water, while nearly three-quarters of Albertans rely on municipal supplies where the chemical is added.

The paper sought the information to see what light it would shed on the effectiveness of fluoridation, which has been touted by the U.S. Centers for Disease Control and Prevention as one of the top 10 great public health achievements of the 20th century, and is endorsed by all dental associations in the country and by Health Canada.

But the results showed that if fluoridation is the only major difference between the two provinces, the chemical is preventing fewer than half a cavity per child in Ontario.

Health Canada downplayed the significance of the findings.

“While accurate,” the data on the children are “an incomplete picture of the tooth decay situation... [and] cannot be used to form conclusions regarding the efficacy of fluoride use in water,” Health Canada said.

The federal department said firm conclusions can't be drawn from the Statscan survey because it didn't collect assessments on individual intakes of the chemical. To make a proper assessment, Health Canada said it would need detailed information on whether people in the two provinces differ in their intake fluoride supplements, drink tap water or bottled water, and use fluoridated toothpaste.

But fluoridation is one major and obvious difference between the provinces. More than three-quarters of Ontario residents live in areas where municipal water supplies contain the chemical. In Quebec, 94 per cent have water free of the additive, according to figures published by Health Canada in 2007.

Since then, Quebec City has voted to stop fluoridating, indicating that the difference between the two provinces is currently even more pronounced.

Some critics of fluoridation say the survey does raise questions about the practice.

“Fluoridation is no longer effective,” contends Hardy Limeback, head of the preventive dentistry program at the University of Toronto, who says adding the chemical to water is “more harmful than beneficial.”

Although fluoridation is touted as an unalloyed benefit by public health agencies, which estimate it cuts cavity rates by 20 per cent to 40 per cent, many community groups have sprung up across Canada lobbying to stop the practice, which is subject to repeal by local referendums. Some health professionals are worried fluoridation may have under-appreciated risks.

While fluoride toughens the outside of teeth to make them more resistant to bacteria-causing decay, a number of medical journal studies have linked exposure to altered thyroid function, and to reduced IQ levels in children, although the intellectual impairments were found at levels of the chemical in water well above those used for municipal supplies.

The most worrisome study, by Harvard researchers, appeared in 2006 in the journal *Cancer Causes and Control* and found that boys aged 7 exposed to high levels of fluoridated water were about four times more likely to develop childhood osteosarcoma. It's a rare bone cancer that felled Canadian icon Terry Fox and almost always leads to amputations.

There has also been a worldwide reduction in cavity rates, regardless of whether countries use the chemical, suggesting factors other than adding it to water supplies are at work.

One theory is that most people are already getting adequate exposure to fluoride through toothpastes, so the amounts in water aren't making much difference in tooth decay rates.

“The parallel reduction in caries [cavities] incidents in countries with a lot of fluoridation and countries with not much fluoridation is quite dramatic,” says Warren Bell, former head of the Canadian Association of Physicians for the Environment, a group that questions the practice.

Dr. Limeback said factors that might be preventing caries include increased exposure to vitamin D, better oral hygiene, less sugar consumption, and even antibiotics.

When fluoridation started 60 years ago, doctors thought swallowing the chemical was beneficial by strengthening teeth from the inside out. Dr. Limeback said more recent research shows that if there is a benefit, it is from the topical application of fluoride to the surface of teeth, which suggests that brushing with a toothpaste is more effective than drinking water containing the chemical.

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