

Bottled vs tap water

In spite of the substantial amounts invested by Canadian governments in the provision of top-quality municipal drinking water, bottled water has gained in popularity over the last decade.

In British Columbia, 23% of residents receive more than 75% of their daily water intake from bottled water.¹ Last September, Metro Vancouver ran a campaign promoting the consumption of tap water. Bottled or tap water? Knowing the facts is essential to making informed decisions respecting water consumption.

Bottled water includes natural mineral water and water drawn from springs and wells, but could also include purified water, which is often treated municipal water. Bottled water is regulated as a food product under Health Canada's Food and Drug Act.² The Canadian Food Inspection Agency inspects domestic manufacturers and importers.² Products are subjected to a monitoring program focusing on the microbiological component, but the details provided of the analysis for chemicals is usually very limited. Manufacturers are not legally bound to test for trace toxic contaminants or

to report laboratory analyses to any authority. No licence is required to sell bottled water in Canada² but companies must adhere to provincial regulations when taking water at source. Lastly, regulations are directed to the quality of water in sealed bottles, but no direction is given concerning proper use or storage.

In BC, tap water principally originates from surface water. Quality standards related to municipal water are established by Health Canada through the guidelines for Canadian drinking water quality. Municipal water quality is regulated under the Ministry of Healthy Living and Sport's Drinking Water Protection Act.³ The Ministry of Environment plays a lead role in source water protection activities.³ Water suppliers are subjected to comprehensive monitoring and reporting programs. Drinking water is tested for chemicals using a monitoring regime based on specific concerns. Monitor-

ing has generally focused on microbiological samples collected from treatment plants and distribution systems, at a frequency increasing with the number of people served.³ Water systems are inspected and operators are trained and licensed.³ Adverse water quality notification is mandatory.

BC's Drinking Water Protection Act requires municipalities to publicly report water quality monitoring results to their consumers on an annual basis,³ including all chemicals and microbiological parameters. For bottlers, transparency is restricted to the limited information reported on the label. Health Canada is presently reviewing these labeling requirements.²

Microbial monitoring results may not be typical of the entire water volume. Only a small amount of water is checked and the use of indicators might not reflect the presence of certain pathogens such as protozoa. Bottled water is put on the shelves after microbiolog-



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improvement. Nomination forms and more detailed nomination criteria can be found at www.bcma.org

Nominations must be received by Monday, May 11, 2009.

For more information, please contact Sharon Shore, Senior Manager of Communications and Media Relations, BCMA, at 604-638-2832 or toll free at 800-665-2262 ext. 2832, or sshore@bcma.bc.ca

ical tests are completed, while drinking water reaches the consumer tap before the laboratory results come back.

Unlike municipal water, bottled water contains no chlorine residual. Therefore, proper transport, use, and storage is essential to preserve its microbiological integrity.^{2,4} On the other hand, a chlorine residual must be maintained in the distribution for tap water.

Health Canada noted that no known waterborne disease outbreaks have been associated with the consumption of bottled water in Canada,² though it would be more difficult to detect outbreaks due to bottled water than for a community water system with all users located close to each other.

Plastic bottles are not environmentally friendly, are expensive to transport, create waste that is costly to recycle, and are expensive to purchase. For example, Metro Vancouver's tap water costs 80 cents per 1000 L, while 1000 L of bottled water costs \$527 or more. Why pay extra for treated municipal water sealed in a bottle?

On balance it is clear that there are substantial health and environmental benefits from consuming municipal drinking water rather than bottled water. Municipal drinking water, unlike bottled water, is monitored and disinfected. Unlike bottled water, dis-

tribution and storage of municipal drinking water does not involve any risk of contamination. Also, storing and distributing bottled water is environmentally damaging because it uses large numbers of plastic bottles and is distributed by truck. Both the manufacture of plastic bottles and the use of motor vehicles result in consumption of petroleum products and emission of greenhouse gases. In addition, plastic bottles constitute a long-term environmental hazard as they are not biodegradable and reactions between them and various chemicals in the environment may result in the emission of gases that are hazardous to human health.

Wherever there is a properly monitored, maintained, and regulated municipal drinking water supply system, such as in Greater Vancouver and Greater Victoria, steps should be taken to encourage the consumption of tap water rather than bottled water. Consuming designer bottled water may be trendy, but it is harmful to the environment, poses a potential health hazard, and should be actively discouraged. The BCMA and its members need to mount a campaign to inform the public and counter the advertising campaign being carried out by the bottled water industry.

—Ray Copes, MD, FRCPC
—Garth M. Evans
Environmental Health Committee
—Sophie Verhille, PhD
**National Collaborating Centre for
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References

1. Jones AQ, Majowicz SE, Edge VL, et al. Drinking water consumption patterns in British Columbia: An investigation of associations with demographic factors and acute gastrointestinal illness. *Sci Total Environ* 2007;388:54-65.
2. Health Canada. Food and nutrition: Questions and answers on bottled waters. 2007. www.hc-sc.gc.ca/fn-an/securit/facts-faits/faqs_bottle_water-eau_embouteillee-eng.php (accessed 21 February 2009).
3. British Columbia. Provincial Health Officer. Progress on the action plan for safe drinking water in British Columbia. 2006. www.health.gov.bc.ca/pho/pdf/WaterReport.pdf (accessed 21 February 2009).
4. Raj SD. Bottled water: How safe to drink? *Water Environ Res.* 2005;77:3013-3018.
5. Hrudey SE. Chlorination disinfection by-products (DBPs) in drinking water and public health in Canada. A primer for public health practitioners reviewing evidence from over 30 years of research. National Collaborating Center for Environmental Health; 2008.