

Question and Answers

Manganese in Drinking Water

November 2018



Q. What is manganese?

A. Manganese is an essential nutrient in air, food, consumer products, soil and water. According to Health Canada, manganese is most easily absorbed in the body from drinking water. The main source of manganese for most people is their diet and, in addition to drinking water, is present in nuts, beans, fruits and leafy green vegetables. Health Canada indicates that consuming small amounts of manganese is necessary to maintaining your overall health. **However, recent studies have shown that increased levels of manganese can pose greater health risks when consumed in water rather than food.**

Q. Why is too much manganese a problem?

A. Manganese can cause discolouration in water and stain laundry and plumbing fixtures. According to Health Canada's recent studies, consuming water with high levels of manganese may have health effects to infants. Health Canada has indicated that **infants are at greater risk from manganese in drinking water** than children and adults because:

- their brains are developing rapidly;
- they drink more water based on body weight;
- and they absorb more manganese and are less likely to remove it from their bodies.

Health Canada's analysis has determined that infants consuming formula reconstituted with high levels of manganese in drinking water are particularly at risk, and recommend that drinking water that contains levels of manganese above their guideline is not used to prepare infant formula. These new guidelines are anticipated to be issued by Health Canada in early 2019.

Q. What guidelines does Health Canada anticipate changing?

A. As part of Health Canada's Guidelines for Canadian Drinking Water, results of its recent scientific studies show that health effects may be related to higher levels of manganese in drinking water. This information was used as their basis for identifying **maximum acceptable concentration (MAC)** for manganese in drinking water. These drinking water guidelines are designed to protect the health of the most vulnerable members of society, such as children and the elderly.

Health Canada's drinking water guidelines of an acceptable level, currently called an aesthetic objective (AO), is 0.05 milligrams per litre (mg/L). Health Canada has indicated that in 2019 they intend to introduce a MAC for manganese in drinking water, which our water users should be aware of.

Q. Why is the Village issuing this update?

A. The Village is aware that Health Canada may issue their updated Guidelines for Canadian Drinking Water Quality in early 2019. We would like our community to have the same information that we have so far. We are anticipating more information from Health Canada in early 2019.

Q. What are the health risks with too much manganese?

- A.** According to Health Canada's current study, consuming water with high levels of manganese may pose health risks to brain development, particularly for infants. **Infants are at greater risk** than older children and adults because their brains are rapidly developing, they drink more water based upon their body weight and they absorb more manganese that they are unable to remove from their bodies. Further, according to Health Canada, infants consuming formula that is reconstituted with water containing high levels of manganese are particularly at risk and Health Canada recommends that water with higher levels of manganese not be used to prepare infant formula.

Q. How can I reduce manganese from my drinking water?

- A.** As one of many nutrients in water distribution systems and in private wells, manganese reduction, such as at points-of-entry into the home or at the point-of-use with taps or faucets, remains the most effective way to minimize exposure to manganese. Whether you receive water through our distribution system, through private wells or through portable water stations, there are water filtration and reverse osmosis systems that reduces manganese.

When purchasing a water filtration device, Health Canada and Northern Health recommends purchasing one that has been certified by the Standards Council of Canada (SCC) and devices that meet the International/American National Standards Institute (NSF/ANSI) standard for drinking water treatment.

Q. How can I test the water at my tap?

- A.** If you observe water discolouration or want to test for mineral content in your water, you can contact Northern Health or the First Nations Health Authority as applicable to you:

Northern Health: Contact your local Drinking Water Officer (DWO) at (250) 565-2150 or email php@northernhealth.ca.

First Nations Health Authority: Drinking Water Safety Program at 1 (866) 913-0033 or visit <http://www.fnha.ca/what-we-do/environmental-health>.

Q. What is the Village doing about water quality overall?

- A.** We have completed our Water Treatment Plant Pilot Study, Water Treatment Plant Design Engineering and our grant application is currently being reviewed. We have also completed Geological Study Phases 1 and 2, conducted the Gerow Island Well Assessment and Pump Test and have completed our Gerow Island Wellhead improvements. We are hoping to proceed with a new Water Treatment Plant in 2019. The Village continues to invest in infrastructure as part of its three-year strategy (2017-2018-2019).

Q. How do I obtain more information?

- A.** Please visit our webpage for more information and links to a number of resource materials: <http://office.burnslake.ca/public-works/water> or call us at 250-692-7587.