

Lead Levels in Drinking Water

Questions and Answers for Patients

You may have been made aware that school water sample testing conducted in some northern B.C. municipalities have found elevated lead concentration levels in their drinking water. Drinking water generally does not contain lead, and if lead is present in water, the concentrations are usually extremely low. When elevated lead levels are found in drinking water it is due to a combination of water chemistry, plumbing materials (containing lead or brass), and extended contact time between the water and plumbing materials. Coastal communities tend to have water properties that leach lead from older piping infrastructure.

What is lead?

Lead is a metal that is found naturally in the earth's crust. Everyone is exposed to low levels of lead through food, tap water, air, dust, soil, and some consumer products. Lead was once used in products like toys, paint and plumbing materials, but the Government of Canada now restricts its use in many products.

Why has lead been found in tap water at some schools in the north?

The combination of (favorable) water chemistry, presence of lead containing plumbing materials in older schools, and (extended) contact time determine the amount of lead that leaches into tap water. Exposure to lead through tap water at the schools tested is expected to be low because water samples are usually tested in the worst case scenario (water sitting stagnant in pipes overnight and water consumption in schools is sporadic and not continuous).

Should I be concerned about the levels of lead in the tap water in my home?

When elevated lead levels are found in drinking water it is due to a combination of water chemistry, plumbing materials (containing lead or brass), and extended contact time between the water and plumbing materials. Coastal communities tend to have water properties that leach lead from older piping infrastructure. The overall exposure of lead through drinking water is generally low, relative to other sources of lead. Overall blood lead levels in children have gone down significantly over the past decades owing to the removal of leaded indoor paint and leaded gas in Canada. The health impacts of lead exposure depend on many factors including the frequency, duration, and dose of the exposures to a variety of lead sources, as well as individual factors such as age, previous exposure history, nutrition and health. However, as there is no "good" amount of lead and as long term exposure could impact growth and development in young children, we always strive to reduce the amount of exposure to lead from all sources (including drinking water) to as low as possible, wherever we can. This is especially true for young children and pregnant women. Lead exposure is most of a concern for young children and developing fetuses because they absorb lead more easily than adults and are more susceptible to its harmful effects.

For more information on the health effects of lead, visit Health Canada website below:

<http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/lead-plomb-eng.php>

How can I find out if I have high lead in my tap water at home?

Lead is less likely to be present in buildings constructed after 1989. If you decide to test your water, please contact an accredited lab (see Table 1) to arrange for water sample collection (bottles and forms), submission, and processing (testing for lead). Depending on the age of your home and plumbing materials, you may decide not to sample.

Please forward a copy of the lab result(s) to the local Environmental Public Health office (see Table 2). We can assist with the evaluation and interpretation of the lab result(s) against the *Guidelines for Canadian Drinking Water Quality* for lead.

What can I do to reduce my family's exposure to lead?

It is important to remember other sources of potential lead exposure for children that may be much more significant, such as lead paint.

- If your home was built before 1978 and has never been repainted, there is a good chance it has lead-based paint. Clean your house regularly to remove dust and particles that may contain lead. This is especially important for surfaces that young children might touch often.
- Do not keep food or drinks in lead crystal containers for any length of time. Do not serve pregnant women or children drinks in crystal glasses. Babies should never drink from lead crystal.
- If you own glazed glass or ceramic dishes bought outside of Canada, do not use them for serving food or drinks. They may contain higher levels of lead than are allowed in Canada.
- If you have children six years of age or under, remove any horizontal PVC (plastic) mini-blinds made in Asia or Mexico from your home.
- Discourage children from putting things into their mouths unless they are intended to be mouthed (like food and pacifiers).
- If you work in a smelter, refinery or any other industry where you are exposed to high levels of lead, shower and change your clothing before going home. Make sure you have your blood lead level checked regularly.
- Never burn waste oil, coloured newsprint, battery casings or wood covered with lead paint in or near your home, because lead fumes may be released. Dispose of them through your city or town's hazardous waste program.
- If you use lead solder in a hobby (like making stained glass), use a good quality breathing mask, keep surfaces clean and keep children and pregnant women out of the area. Wash hands after handling lead solder.
- Avoid eating wild animals that have been shot with lead bullets. Use non-lead bullets and shots when hunting for food.
- Lead exposure from tap water home settings vary. If lead contamination of drinking water is a concern based on the age of your plumbing (1989 or older) or water testing results there a number of actions that can be taken to mitigate risk. The options may include both short and long-term solutions. Long-term solutions include replacing old/lead containing plumbing components. Short-term solutions may include:
 - **Flushing:** Flush their drinking water taps each morning until the water runs cold and you notice a temperature drop in the water. To conserve water jugs can be stored in the fridge. Use cold, flushed water for drinking and preparing food. Water from the hot water tap should not be consumed as it contain more (or higher level of) lead.

- Bottled water
- Installing point-of-use lead filtration units

What is Northern Health's role?

Northern Health is committed to ensuring that the water provided to northern BC residents is safe.

If you have any questions, please call your local Environmental Health Officer (see Table 2).

Yours sincerely,

Dr. Raina Fumerton MPH FRCPC
Medical Health Officer
Northwest HSDA

Table 1 – List of Accredited Laboratories in British Columbia

NAME OF LABORATORY	PHONE	FAX
AGAT Laboratories (Burnaby)	778-452-4000	778-452-4074
ALS Environmental (Kamloops)	250-372-3588	250-372-3670
ALS Environmental (Fort St. John)	250-261-5517	250-261-5587
ALS Environmental (Vancouver)	604-253-4188	604-253-6700
CARO Analytical Services (Kelowna)	250-765-9646	250-765-3893
EXOVA Canada Inc. (Surrey)	604-514-3322	604-514-3323
MAXXAM Analytics (Burnaby)	604-734-7276	604-731-2386
MAXXAM Analytics (Victoria)	250-385-6112	250-382-6364
MB Laboratories Ltd. (Sidney)	250-656-1334	250-656-0443
Northern Laboratories (2010) Ltd (Prince Rupert)	250-627-1906	250-627-8214

Table 2 – Public Health Protection – Office Contact Numbers

OFFICE LOCATIONS	PHONE	FAX
Prince Rupert	250-622-6380	250-622-6391
Smithers	250-847-6400	250-847-5908
Terrace	250-631-4222	250-638-2209
Prince George	250-565-2150	250-565-2144
Quesnel	250-983-6810	250-983-6857
Vanderhoof	250-567-6900	250-567-6170
Dawson Creek	250-719-6500	250-719-6513
Ft. Nelson	250-774-7092	250-774-7096
Fort St. John	250-263-6000	250-263-6086