

### What is lead?

Lead is a heavy, soft bluish-grey metal that occurs naturally in the earth's crust. Lead is used in the manufacture of many consumer products.

### What are the health risks of exposure to lead?

Exposure to lead can cause a wide range of health effects. The effects of lead build up over time. The higher and longer the exposure to lead, the greater the effect on health. Lead can be stored in bone and can be released in times of bone turn over (ex: pregnancy, menopause, injury). Chronic lead exposure may not produce obvious symptoms until levels in the body are very high. Lead can affect digestive and kidney function, harm blood production and increase blood pressure. Additionally, high lead exposure can cause heart disease, depression, reduced fertility, fatigue, nerve damage, memory loss and can affect concentration and sleep. Large exposures (ex: chewing, swallowing an object containing lead or breathing in lead fumes) can result in lead poisoning. In certain occupational groups, high exposures to lead have shown limited evidence for an increased risk of cancer. However, in the general population, blood lead levels have not been associated with cancer.

Human exposure to lead has declined significantly in the last 30 years due to the removal of lead in gasoline and lead in paint. However, recent information indicates that lead can have effects on health at lower levels of exposure than were previously known.

### Who is at higher risk from lead exposure?

Everyone should minimize lead exposure as much as possible.

However, due to lead's effect on the developing brain, children and unborn children are more sensitive to lead exposure. Lead exposure, even at low levels, has been associated with developmental delays of childhood behaviours, a decrease in language skills, reduced intellectual abilities and delayed puberty. Population studies of low levels of exposure in children showed associations with reduced

intelligence quotient (IQ) scores and adverse effects on behaviour compared to children who had less exposure to lead. See Health Canada's *Final Human Health State of the Science Report on Lead 2013* for further information.

Women who may become pregnant are advised to limit their lead exposure to protect their unborn child. Since lead can be stored in bones and bone metabolism is increased in pregnancy and lactation, stored bone lead is released into the mother's blood. Once in the mother's blood, lead can move to the fetus and increase the risk of miscarriage, stillbirth, preterm birth, low birth weight, and harm brain development.

### What are common exposures to lead?

Everyone is exposed to trace amounts of lead through air, soil, household dust, food, drinking water, and consumer products. Traces of lead are found in almost all food. Airborne lead falls onto crops or soil and is absorbed by plants. Cigarette smoke may also contain small amounts of lead. However, there are situations where the potential for exposure to lead can be higher, including in homes, community spaces and the workplace. Some consumer products may also contain lead and may result in increased exposure.

## Home

### Paint

If your home was built **before 1960**, lead-based paint was probably used both inside and outside. For homes built **between 1960 and 1990**, small amounts of lead may be in some of the paint used. Lead-based paint in your home is a serious health hazard if it is chipping or flaking, or if it is within the reach of children who might chew on it. Disturbing old leaded paint during household renovations can cause the renovator or the household inhabitants to inhale or ingest lead dust. Lead exposure during renovations can be very high.

## Drinking water

Homes built before 1950 may have lead pipe service connections, which can increase lead in drinking water in the home. Lead solder in the pipes and lead fixtures may also contribute to lead in drinking water levels. See the provincial [lead in drinking water factsheet](#).

## Community

Community sources of lead exposure include **active** lead smelters, metal recycling companies and automobile battery recycling shops. Some smaller aircraft still use leaded gasoline. Airborne dust exposure from these sources can contribute to increased blood lead levels. Soil contamination due to past industrial activity or past motor vehicle activity around roadways heavily used when leaded gas was common can contribute to lead in yard soil or in house dust. Studies indicate that exposure to increased levels of lead in soil lead may slightly increase blood lead levels. Effective measures to prevent this exposure have not been established. However, there are precautions that can be taken related to home gardening. See the [provincial factsheet on home gardening](#).

## Working with lead

Workers in certain industries may be exposed to high levels of lead. Lead dust may be breathed in. A major use of lead is in the production of (lead-acid) batteries used in automobiles. Lead pigments are added to glass to prevent radiation exposure from television and computer screens and can be found in many other products. Lead fumes can be released when waste oil, coloured newsprint, battery casings or wood covered with lead paint are burned. Lead can also be found in ammunition, fishing weights and solder.

Hobbies may be a source of lead exposure. Consuming game with lead fragments can create high lead exposure. High exposures to lead have been identified in individuals using firing ranges in Manitoba. Please see [Lead Exposure at Manitoba Firing Ranges](#) for more information.

Exposure within a family can occur if household members bring lead home on their clothes or in their vehicles. The use of lead in the home, in an occupation or hobby, such as making stained glass, may cause exposure to harmful lead vapours and dust.

## Products

Some traditional medicines, health products, spices (turmeric) or cosmetics may not meet Canadian safety standards for lead. Imported toys, utensils or food receptacles can also contain lead. Lead can enter food, especially acidic food such as fruit juice, from lead-based glazes on glassware and ceramics. Canadian regulations limit the amount of lead that can leach from glazes on glass and ceramic products sold in Canada, if they are intended for use in preparing, serving or storing food. However, glazed ceramic or glass dishes bought in other countries may contain enough lead to be a hazard to health.

Candles that contain lead in their wicks may also release harmful levels of lead vapour when burned. Lead crystal containers may be a source of lead exposure. Lead may be present in horizontal PVC (plastic) mini-blinds made in Asia or Mexico and pose a hazard to small children.

## Other sources

Breast milk is rarely an important source of exposure to lead, but can be if a mother was exposed to high lead levels in the past. Low levels of iron and/or calcium may increase lead levels, and low vitamin C may decrease the excretion of lead. Correcting these issues can help reduce lead levels in the body.

## Tips to protect you and your family from lead exposure

### Manage lead paint

If you think the paint in your home may contain lead, have it tested. A certified inspector can measure paint lead levels in your home, or you can mail paint chip samples to a testing laboratory. To find an inspector or laboratory in your area, contact the [Standards Council of Canada](#) or the [Canadian Association for Laboratory Accreditation](#). Search online or check your local telephone directory for *Laboratories - Analytical and Testing*.

Be sure to contact the lab first, and follow all directions for gathering and sending the paint chips. If the lead-based paint is in good condition and is not on a surface that a child might chew, the risk is minimal. It's best to leave it alone, paint over it, or cover it with wallpaper, wallboard or paneling. If the lead-based paint is cracking, chipping, flaking or

peeling, or if it is on a surface that a child might chew, action may need to be taken. See Health Canada's factsheet [Lead-based Paint](#) before starting any renovation project in an older home.

## Keep lead away from young children

Sucking, chewing or swallowing an item made of lead may result in lead poisoning. Avoid the use of lead containing products in your home. Do not put food or beverages 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 baby bottles. Assess your drinking water for the sources of lead and take action if drinking water lead levels are above the Canadian Drinking Water Guideline.

## Use precautions when working with lead

When working with lead products or in situations where lead exposure may occur, follow all safety precautions. Women of childbearing age may wish to avoid occupations with the potential for high lead exposure. If lead solder is used in a hobby, such as stained glass-making, use a good quality-breathing mask, keep surfaces clean, change your clothes, wash after working, keep children and pregnant women out of the area and the lead products away from children. If you work with lead, take precautions to prevent bringing lead dust home. If harvesting game shot with lead bullets, remind your meat processor to avoid meat with excessive shot damage and to trim generous distances from wound channels. If you shoot at a firing range, use appropriate precautions.

## Steps to take if you think that you have had an increased lead exposure

The treatment for increased lead exposure is to stop the ongoing exposure to lead. Body lead levels will decline gradually over time. If you are concerned about lead exposure, talk to your healthcare provider. Your healthcare provider can conduct a blood test to measure your blood lead level if you are concerned about a significant lead exposure.

## For more information:

- Health Canada: Final Human Health State of the Science Report on Lead

[www.hc-sc.gc.ca/ewh-semt/pubs/contaminants/dhhsrll-rpecscepsh/index-eng.php](http://www.hc-sc.gc.ca/ewh-semt/pubs/contaminants/dhhsrll-rpecscepsh/index-eng.php)

## Information for the public

- Health Links–Info Santé : 204-788-8200 or 1-888-315-9257 (toll-free)
- [Lead Exposure at Manitoba Firing Ranges – Environmental Health - Factsheet \[français\]](#)
- [Manitoba Lead in Drinking Water Factsheet](#)
- [Healthy Canadians: Reduce Your Exposure to Lead](#)
- [Health Canada Product Recall List](#)
- [Health Canada: Minimizing Exposure to Lead from Drinking Water Distribution Systems](#)
- [Health Canada: Lead-based Paint](#)
- [Environmental Protection Agency Guidelines for Lead Removal – Renovations and Painting](#)

## Gardening and soil contaminants

- [Provincial factsheet on home gardening and soil contaminants](#)
- [Environmental Protection Agency – Growing Gardens in Urban Soils](#)

## Information for operators of firing ranges in Manitoba

- [Lead Exposure at Manitoba Firing Ranges – Information for Operators - Factsheet \[français\]](#)