

Arsenic

FactSheet



Saskatchewan
Ministry of
Health



What is arsenic?

Arsenic is a natural element commonly found in the Earth's crust. It is present in small amounts in all living matter. Arsenic compounds are also used for a wide variety of commercial and industrial purposes.

Arsenic can enter groundwater through erosion and weathering of soils, minerals, and ores. Arsenic compounds are used in the manufacture of a variety of products and may enter the environment directly from industrial effluents and indirectly from atmospheric deposition.

Arsenic exists in different chemical forms, which can be classified into two groups: organic arsenic and inorganic arsenic. Inorganic arsenic can be a concern to human health.

How can I be exposed to arsenic?

Since arsenic is a natural part of our environment, everyone is exposed to small amounts. Sources of inorganic arsenic exposure include:

- foods (trace amounts)
- smoke from burning wood, coal and tobacco products
- dust from some industrial processes
- drinking water that contains arsenic
- arsenic-treated wood
- soil ingestion

What are the health effects of arsenic?

Despite its reputation as a poison, arsenic's effect on human health depends on factors such as the level and length of exposure.

Arsenic is absorbed by the body when consumed in drinking water. Individuals can also be exposed to arsenic through food or soil ingestion or inhalation of cigarette smoke. Exposure to arsenic through skin contact is very low.

Exposure to high levels of inorganic arsenic over a lifetime can increase the risk of some cancers such as bladder, liver, kidney, lung and skin cancer. Long-term exposure to high levels of inorganic arsenic over many years or decades may also cause thickening and discoloration of the skin, nausea and diarrhea, decreased

production of blood cells, abnormal heart rhythm, blood vessel damage or numbness of the hands and feet. These health effects are not commonly associated with levels of inorganic arsenic found in average daily arsenic exposures.

How can exposure to arsenic be measured?

Tests of hair or fingernails can determine exposure to high levels arsenic over the past 6–12 months, but these tests are not very useful in detecting low-level exposures. Arsenic is removed from the body mostly through urine. Measuring urinary inorganic arsenic levels is the best way to determine short term exposure to this form of arsenic. Urinary arsenic levels can vary over time depending on recent exposures.

What level of arsenic in my urine is of concern?

For workers in the U.S., the occupational health limit is set at 35 ug/L for inorganic arsenic. Health effects are not commonly associated with the levels of inorganic arsenic below 35 ug /L. A guideline level for non-occupational exposure to inorganic arsenic has not been established.

What can you do to reduce your/ your children's exposure to arsenic?

- Levels of inorganic arsenic found in food sold in Canada are generally very low, and as such there is no need to change dietary habits to reduce exposure to arsenic. Health Canada continues to recommend that Canadians consume a variety of foods from each food group according to *Eating Well with Canada's Food Guide*.
- Stop smoking and minimize exposure to second hand tobacco smoke.
- If you drink well water, test your well for the presence of arsenic.
- Reduce your/your children's contact with soil known to possibly contain arsenic and arsenic-treated wood.
- If there is arsenic in the workplace of a household member, follow appropriate workplace safety guidelines to prevent the transfer of contaminants into home environments.

How can I reduce my exposure to arsenic in soil?

The following precautionary measures can help reduce exposure to soil that may contain arsenic:

- Wash your hands after outside activities, such as playing and gardening, before handling and eating food or smoking.
- Remind children to keep their hands out of their mouths when playing outside.
- Wear gloves when working outside.
- Wear certain clothing only for outdoor play, work and gardening. Remove this clothing after going inside.
- Keep children's toys, play areas and surfaces clean.
- Remove shoes and boots at the door.
- Clean stroller and bike wheels to avoid tracking soil indoors. Wet mop or wet wipe when dusting where possible (vacuuming and sweeping can raise dust levels).
- Clean heat ducts and furnace filters regularly.
- Brush and/or wash pets often and outdoors, removing dirt before they enter the home.

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For more information

General Information

Agency for Toxic Substances and Disease Registry (ATSDR). Toxicological profile for arsenic. Atlanta GA, 2007.

Available from:

<http://www.atsdr.cdc.gov/toxprofiles/tp2.html>

Health Canada

For more information on arsenic in drinking water, refer to Health Canada's website online at

<http://www.hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/guide/index-eng.php>

For more information on arsenic in food, refer to Health Canada's website online at

<http://www.hc-sc.gc.ca/fn-an/sectur/chem-chim/viron/arsenic-eng.php>

Manitoba

Health Links-Info Santé: 788-8200 or 1-888-315-9257 (toll-free)

Saskatchewan

Saskatchewan HealthLine: 1-877-800-0002