



# CHEMICALS AND CHILDREN'S HEALTH

## What are chemicals?

Chemicals are the basic building blocks that make up all living and non-living things on Earth. Many chemicals occur naturally in the environment, and may be found in our air, water, food and homes. Some chemicals are synthetic and are used in every day products from medicines to computers to fabrics and fuels. Other chemicals are not made deliberately but are by-products of chemical processes.

Many chemicals are used to improve the quality of our lives and most are not harmful to the environment or human health. However, some chemicals have the potential to cause harm, in certain amounts, and should only be used when their risks can be appropriately managed.

## Why are children potentially more vulnerable?

Children are more vulnerable than adults to chemicals found in the environment because:

- children typically have a higher intake of air, water and food in relation to their body weight;
- children's bodies and body systems are still developing and they may be less able to process or eliminate some chemicals. This could make them more sensitive to harm from these substances;
- exposure to certain environmental chemicals during pregnancy or early childhood, when they may be sensitive to developmental effects, may result in negative effects on children's health;
- children spend more time in direct contact with surfaces when they crawl and will often put things (toys, dirt, etc.) in their mouths. Both of these behaviours mean they can accidentally ingest harmful chemicals;
- young children tend to have a less varied diet than adults. As a result, they may eat larger quantities, on a body weight basis, of a smaller range of foods. This unique diet may result in a greater exposure to certain chemicals if present in food;
- exposure to environmental chemicals beginning at a young age can potentially lead to longer-term cumulative exposures over a lifetime which could then result in effects. Some childhood exposures could affect health in adulthood;
- children are largely unaware of and have minimal or little control over the hazards to which they may be exposed.



## What are the health risks to children associated with chemicals?

Children may be exposed to chemicals in indoor and outdoor air, water, soil, house dust, food and consumer products, in the settings where they live, learn and play. In addition, the fetus may possibly be exposed to chemicals during pregnancy, as certain chemicals can cross the placenta. Nursing infants may also be exposed to chemicals that may be present in breast milk.

The health risks associated with a specific chemical depend on the hazard (its potential to cause health effects) and the dose (the amount of chemical to which you are exposed). The timing of the exposure is also very important. For example, specific stages of pregnancy are now recognized as critical windows of susceptibility to the effects of some chemicals. For information on reducing exposures to chemicals please see the “What can I do to protect children’s health?” section of this fact sheet.

## What is the government doing to protect children’s health from potential risk from chemicals?

The Government of Canada plays a key role in protecting Canadians’ health. In Canada, the manufacture, import and use of chemicals is regulated by a number of laws, including the *Canadian Environmental Protection Act, 1999*, the *Hazardous Products Act*, the *Food and Drugs Act*, and the *Pest Control Products Act*.

In 2006, the Government of Canada launched the Chemicals Management Plan (CMP) to further enhance its role in protecting Canadians and their environment from exposure to harmful chemicals. The Chemicals Management Plan protects human health and the environment by assessing chemicals used in Canada, and putting in place measures to reduce the risks that are identified. For example, in October 2008 the Government of Canada became the first in the world to conclude bisphenol A (BPA) posed a risk to human health and the environment. In June 2009 the Government introduced regulations to prohibit the importation, sale and advertising of baby bottles containing BPA. The Government continues to work with industry to reduce the amount of BPA contained in infant formula cans.

Because the Chemicals Management Plan is jointly managed by Environment Canada and Health Canada, the Chemicals Management Plan is a highly integrated program that addresses environmental and health risks under the various frameworks noted above.

When assessing the potential risks from chemical substances, the various ways children might be exposed are considered. Some chemicals may be of higher concern than others because of the likelihood that children may come into contact with them.

The Government of Canada works closely with provinces and municipalities to help reduce the risks of harmful chemicals. In addition, because pollution does not stop at borders, the Government of Canada works with other countries to build a consistent international and regional approach to the safe management of chemicals.

Science keeps progressing, and in the process provides the Government of Canada with new knowledge to better protect children and adults from exposure to chemicals.

## What can I do to protect children's health?

The easiest place to reduce children's exposure is in the home where chemical products such as cleaning liquids and powders, polishes, drain cleaners, paint thinners, windshield washing fluid and pesticides are commonly found.

1. Keep all chemical and drug products out of sight and reach of children.
2. Read warnings on the labels and follow package instructions.
3. Make sure that child-resistant containers are working.
4. Use solvents in well-ventilated areas and never mix chemicals together as some mixtures can produce harmful gases.
5. Keep household chemicals, pesticides and drug products in their original containers and store paints, varnishes and other similar products outside, away from the house and in suitable containers.

## Where can I get more information?

For more information on the Chemicals Management Plan, including the list of chemicals being assessed, visit the Chemical Substances Web site at:

[www.chemicalsubstanceschimiques.gc.ca](http://www.chemicalsubstanceschimiques.gc.ca)

For more information on what you can do to provide a healthy environment for your children, see the Health Canada brochure *Healthy Environments for Children – What You Can Do* that is available at:

[www.hc-sc.gc.ca/hl-vs/pubs/child-enfant/safe-sain/index-eng.php](http://www.hc-sc.gc.ca/hl-vs/pubs/child-enfant/safe-sain/index-eng.php)