

The Daily

Statistics Canada

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Releases

Canadian Health Measures Survey: Lead, bisphenol A and mercury, 2
2007 to 2009

New data from the Canadian Health Measures Survey (CHMS) show that blood lead concentrations in the Canadian population have fallen dramatically since they were last measured 30 years ago. Furthermore, 91% of Canadians aged 6 to 79 had detectable concentrations of bisphenol A (BPA) in their urine and 88% had detectable concentrations of total mercury in their blood. The CHMS analyzed blood and urine samples for indicators of more than 80 environmental contaminants and chemical substances, most of which were measured for the first time in a representative sample of Canadians.

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Lead

Blood lead concentrations were measured at the national level for the first time in 30 years by the CHMS from 2007 to 2009. Less than 1% of Canadians aged 6 to 79 had concentrations of lead at or above the intervention level of 10 micrograms per decilitre of blood.

The geometric mean concentration of blood lead for Canadians aged 6 to 79 was 1.34 micrograms per decilitre.

Blood lead concentrations were higher in adults than in children. Older adults (aged 60 to 79) had the highest concentrations. Children aged 6 to 11 and teens aged 12 to 19 had the lowest.

Controlling for age group and sex, higher concentrations of lead in the blood were associated with lower household income, being born outside Canada, living in a dwelling that was at least 50 years old, current or former smoking, and drinking alcohol at least once a week.

Although lead was detected in 100% of the population, concentrations have fallen dramatically over the past 30 years. The geometric mean lead concentration for people aged 6 to 79 measured by the CHMS between 2007 and 2009 was about one-third of the concentration measured in the 1978/1979 Canada Health Survey for the same age group.

In 1978/1979, about 27% of Canadians aged 6 to 79 had blood lead concentrations at or above the intervention level, compared with less than 1% from 2007 to 2009.

Note to readers

This third release of data from the Canadian Health Measures Survey (CHMS) includes information on more than 80 environmental contaminants and chemical substances that were measured in the Canadian population from 2007 to 2009. These baseline data on the presence of environmental chemicals in the population will help track trends as data from subsequent cycles of the CHMS become available.

This release provides information on laboratory measures related to the environment, such as heavy metals (lead, mercury and cadmium), pesticides, herbicides, PCBs and perfluorinated compounds. These indicators were collected from March 2007 to February 2009 from a representative sample of about 5,600 Canadians aged 6 to 79 years at 15 sites across the country.

Lead is a heavy metal that occurs naturally in the environment. People can be exposed to lead from air, water, food, dust, consumer products and certain occupations and hobbies. High lead levels can increase the risk of nervous system and kidney damage.

Bisphenol A (BPA) is an industrial chemical used primarily in the production of polycarbonate plastic and epoxy resins for food containers, water bottles and protective linings for canned food and beverages. It does not occur naturally in the environment. Some studies on animals suggest that low levels of exposure to BPA very early in life can affect neural development and behaviour; however, there is some uncertainty in interpreting how these findings might be relevant to human health.

Mercury is found throughout the environment. The general population is exposed primarily through consuming fish and seafood. Chronic exposure to elevated levels may cause a number of health effects, including numbness and tingling in the extremities, blurred vision, deafness and intellectual impairment. Prenatal exposure may cause neurological and developmental delays.

Micrograms per litre and micrograms per decilitre are measures of concentration that reflect the number of molecules per litre or decilitre of blood or urine.

A geometric mean is a type of average that is less influenced by extreme values than the traditional arithmetic mean. The geometric mean provides a better estimate of central tendency for highly skewed data. This type of data is common in the measurement of environmental chemicals in blood and urine.

This decline reflects the removal of major sources of lead from the environment. Since the 1970s, lead has no longer been added to automotive gasoline or used as solder in food cans, and lead limits in paint have been reduced.

Bisphenol A (BPA)

Bisphenol A (BPA) concentrations were measured for the first time at a national level in Canada by the CHMS from 2007 to 2009.

Canadians aged 6 to 79 had a geometric mean concentration of urinary BPA of 1.16 micrograms per litre. This is consistent with results from international studies reporting mean or median concentrations of 1 to 3 micrograms per litre.

Concentrations of BPA in urine based on volume were higher for children aged 6 to 11 than they were for adults aged 40 to 79. Moreover, the highest concentrations were measured in teens aged 12 to 19.

Mercury

The CHMS measured total mercury in blood samples provided by participants aged 6 to 79. From 2007 to 2009, total blood mercury was detected in 88% of Canadians in this age group.

The geometric mean concentration across this population was 0.69 micrograms per litre. Mercury concentrations were lower for children and teens aged 6 to 19 than for adults aged 20 to 79.

Definitions, data sources and methods: survey number 5071.

The article "Lead and bisphenol A concentrations in the Canadian population," which is part of today's *Health Reports*, Vol. 21, no. 3 (82-003-X, free), online release, is now available. From the *Key resource* module of our website, choose *Publications*.

Fact sheets on lead, bisphenol A and mercury are also available in *Health Fact Sheets* (82-625-X, free).

The publication *Canadian Health Measures Survey: Cycle 1 Data Tables*, 2007 to 2009, no. 2 (82-623-X, free), is now available from the *Key resource* module of our website under *Publications*.

For more information about the Canadian Health Measures Survey, 2007 to 2009, or to enquire about the concepts, methods or data quality of this release, contact Media Relations (613-951-4636), Communications and Library Services Division. ■

Dairy statistics

June 2010 (preliminary)

Dairy statistics for Canada and the provinces are now available for June.

Available on CANSIM: tables 003-0007 to 003-0012, 003-0029, 003-0033 and 003-0034.

Definitions, data sources and methods: survey numbers, including related surveys, 3430, 3431 and 3432.

The second quarter 2010 issue of *Dairy Statistics*, Vol. 5, no. 2 (23-014-X, free), is now available from the *Key resource* module of our website under *Publications*.

For more information, call Client Services (toll-free 1-800-465-1991). To enquire about the concepts, methods or data quality of this release, contact Sandra Venturino (613-951-9278; sandra.venturino@statcan.gc.ca), Agriculture Division. ■

Steel wire and specified wire products

June 2010

Data on steel wire and specified wire products production are now available for June.

Available on CANSIM: table 303-0047.

Definitions, data sources and methods: survey number 2106.

The June 2010 issue of *Steel, Tubular Products and Steel Wire* (41-019-X, free) will soon be available.

For more information, or to enquire about the concepts, methods or data quality of this release, contact the dissemination officer (toll-free 1-866-873-8789; 613-951-9497; manufact@statcan.gc.ca), Manufacturing and Energy Division. ■

New products and studies

Dairy Statistics, second quarter 2010, Vol. 5, no. 2
Catalogue number 23-014-X (PDF, free; HTML, free)

New Motor Vehicle Sales, June 2010, Vol. 82, no. 6
Catalogue number 63-007-X (PDF, free; HTML, free)

Health Reports, Vol. 21, no. 3
Catalogue number 82-003-X (PDF, free; HTML, free)

Canadian Health Measures Survey: Cycle 1 Data Tables, 2007 to 2009, no. 2
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Catalogue number 82-625-X (HTML, free)

Science Statistics, Vol. 34, no. 4
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