

Canadian Health Measures Survey: Selected laboratory data, 2012 to 2015

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Combined data from cycles 3 and 4 (2012 to 2015) of the Canadian Health Measures Survey (CHMS) showed that 21% of Canadian adults aged 18 and older had metabolic syndrome, a grouping of three or more risk factors for heart disease and metabolic disorders such as diabetes.

Just over 81% of those with metabolic syndrome were also among the 49% of Canadian adults who self-reported having high blood cholesterol or an unhealthy level of measured cholesterol. In addition, 40% of Canadians aged 20 and over had an Omega-3 Index level indicating that they may have an elevated risk of coronary heart disease mortality.

Cholesterol levels of adults

Just under 49% of Canadian adults aged 18 and older reported having high blood cholesterol or unhealthy levels of measured cholesterol. Of those, 56% were male and 44% were female. Research has shown that unhealthy levels of cholesterol increase the risk of cardiovascular disease.

Individuals considered to have unhealthy cholesterol levels had a blood concentration level of low-density lipoprotein cholesterol, commonly referred to as "bad" cholesterol, of 3.5 millimoles per litre (mmol/L) or higher; a total cholesterol level (the sum of low-density lipoprotein cholesterol, high-density lipoprotein cholesterol and other lipid components) of 5.2 mmol/L or higher; and/or a ratio of total cholesterol to high-density lipoprotein cholesterol, an indicator of the amount of "good" cholesterol relative to the amount of total cholesterol, of 5.0 or more.

Unhealthy cholesterol rates varied significantly between age groups, with 30% of 20- to 39-year-olds having unhealthy cholesterol results, while the rate was 56% for 40- to 59-year-olds and 69% for 60- to 79-year-olds.

Canadian adults aged 18 to 79 had an average blood concentration of low-density lipoprotein cholesterol of 2.79 mmol/L. The average total cholesterol level was 4.80 mmol/L and the average total cholesterol to high density lipoprotein cholesterol ratio was 3.8.

Metabolic syndrome in adults

Just over 21% of Canadian adults 18 and older had metabolic syndrome. Of those, 59% were male and 41% female. Metabolic syndrome is the name for a grouping of three or more risk factors that occur together, increasing a person's risk of cardiovascular disease and other health problems, such as type 2 diabetes and stroke. These risk factors include excess body fat around the waist (waist circumference of 102 cm or more for men and 88 cm or more for women); high triglyceride levels, a measure of the amount of a type of fat in blood (triglyceride levels of 1.7 mmol/L or higher); high blood pressure (resting blood pressure of 130/85 millimetres of mercury or more); high blood sugar (fasting blood glucose levels of 5.6 mmol/L or higher) and abnormal cholesterol levels (high-density lipoprotein cholesterol levels below 1.03 mmol/L).

The presence of metabolic syndrome increased with age. For adults aged 20 to 39, 10% were found to have metabolic syndrome compared with 23% of 40- to 59-year-olds and 39% of 60- to 79-year-olds.

Among the risk factors (measured and self-reported when applicable) considered for metabolic syndrome, a high waist circumference was the most prevalent (89%), followed by high triglycerides (81%), high blood pressure (64%), high fasting blood glucose (61%) and low high-density lipoprotein cholesterol (52%).

Just over 40% of Canadian adults had at least two risk factors associated with metabolic syndrome, while just over one-third had no risk factors.



Omega-3 Index in adults

Combined data from cycles 3 and 4 (2012 to 2015) of the CHMS showed that 40% of Canadians aged 20 to 79 had Omega-3 Index levels that put them at high risk for coronary heart disease mortality, 58% were at intermediate risk and less than 2% were considered at low risk.

Omega-3 levels, reported as a percentage by weight of total red blood cell fatty acids, are considered to be a good indicator of the potential risk for coronary heart disease mortality. The risk categories are as follows: high risk (Omega-3 level of 4% or less), intermediate risk (more than 4% to less than 8%) and low risk (8% or more). Research has shown that the risk of cardiac events is up to 90% more likely for the high-risk category than the low-risk category.

A greater proportion of men (44%) had Omega-3 levels in the high-risk category than women (36%).

The average Omega-3 Index level for Canadian adults was 4.5%.

Note to readers

The Canadian Health Measures Survey Cycle 3 was conducted from January 2012 to December 2013 and Cycle 4 was conducted from January 2014 to December 2015.

This release consists of three data files containing information on laboratory measures. It includes information on cardiovascular and metabolic health (e.g., cholesterol and red blood cell fatty acids), chemistry panels (e.g., electrolytes like sodium and potassium as well as enzymes like aspartate aminotransferase), complete blood counts (e.g., hemoglobin and white blood cell count) and diabetes (e.g., glucose).

Weight files and instructions are available for combining cycle 4 Canadian Health Measures Survey data with equivalent data from cycle 3 (where possible).

Available in CANSIM: tables [117-0008](#), [117-0013](#) to [117-0016](#) and [117-0018](#).

Definitions, data sources and methods: survey number [5071](#).

For more information, or to enquire about the concepts, methods or data quality of this release, contact us (toll-free 1-800-263-1136; 514-283-8300; STATCAN.infostats-infostats.STATCAN@canada.ca) or Media Relations (613-951-4636; STATCAN.mediahotline-ligneinfomedias.STATCAN@canada.ca).