

Health Fact Sheets

Body composition of adults, 2012 to 2013



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The following symbols are used in Statistics Canada publications:

- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable
- 0 true zero or a value rounded to zero
- 0^s value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
- ^P preliminary
- ^r revised
- X suppressed to meet the confidentiality requirements of the *Statistics Act*
- ^E use with caution
- F too unreliable to be published
- * significantly different from reference category ($p < 0.05$)

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Body composition of adults, 2012 to 2013

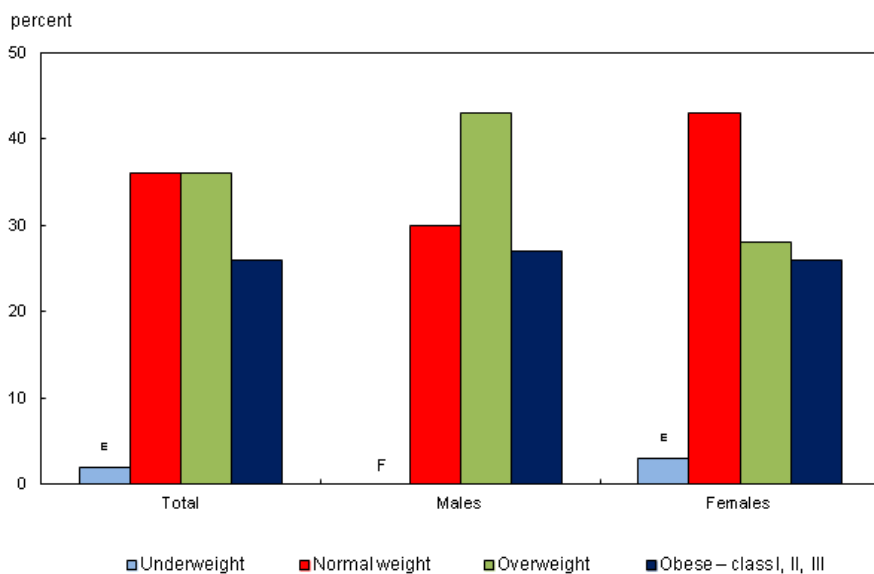
Body composition is an important indicator of the health of individuals and populations. Excess body weight is associated with an increased risk of numerous health problems including type 2 diabetes, hypertension, obstructive sleep apnea, osteoarthritis, many types of cancer (including breast, colorectal and pancreatic), cardiovascular disease (coronary heart disease and stroke),^{1,2} and reduced mental well-being.³ Excess abdominal fat (fat around the waist and upper body) has a greater association with health risks than fat located in the hip and thigh areas.¹ Being underweight is also associated with health problems, including osteoporosis, under-nutrition, infertility and an increased risk of mortality.^{1,4}



Body mass index

Based on the results of directly measured body mass index (BMI) from the 2012 to 2013 Canadian Health Measures Survey (CHMS), almost 2 out of every 3 (62%) Canadian adults aged 18 to 79 were overweight or obese while 2% were underweight and 36% had a normal BMI (body mass index) (Chart 1).

Chart 1
Distribution of adults aged 18 to 79, by body mass index (BMI)¹
and sex, household population, Canada, 2012 to 2013



^E use with caution (data with a coefficient of variation (CV) from 16.6% to 33.3%)

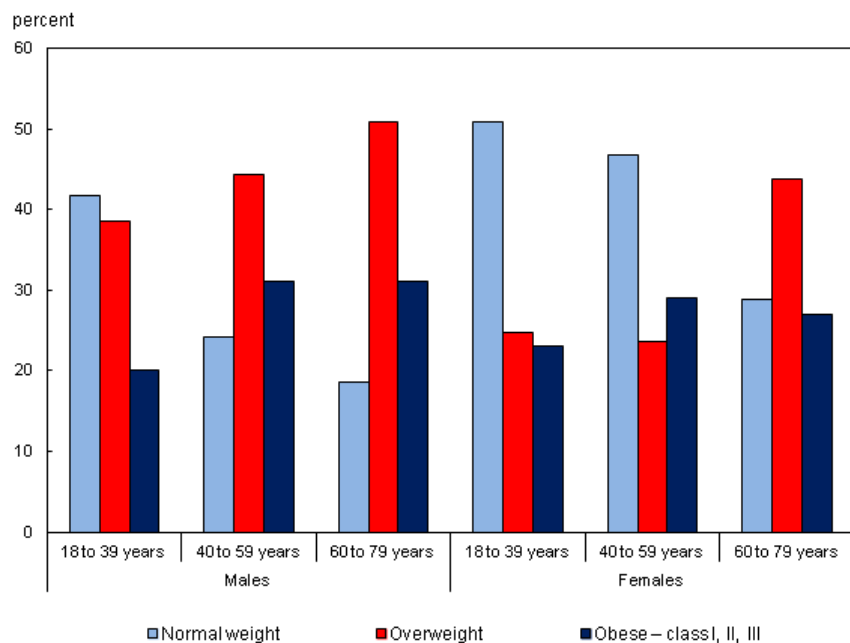
^F too unreliable to be published (data with a coefficient of variation (CV) greater than 33.3%; suppressed due to extreme sampling variability).

1. The body mass index (BMI) classification is based on the *Canadian guidelines for body weight classification in adults* (Health Canada, 2003)

Source: Canadian Health Measures Survey, 2012 to 2013.

The prevalence of overweight and obese Canadians was greater in the older age groups. Males and females 18 to 39 years of age were more likely to have a normal weight than their older counterparts (aged 40 and older) (Chart 2).

Chart 2
Distribution of adults* aged 18 to 79, by body mass index (BMI),¹
sex and age group, household population, Canada, 2012 to 2013



* Underweight Canadians are excluded from the comparison to meet the confidentiality requirements of the *Statistics Act*.

1. The body mass index (BMI) classification is based on the *Canadian guidelines for body weight classification in adults* (Health Canada, 2003).

Source: Canadian Health Measures Survey, 2012 to 2013.

The prevalence of obesity in the Canadian population has changed since the 1978/1979 Canada Health Survey.³ The prevalence of overweight Canadians did not change, but the proportion considered to be obese doubled (from 13% to 26%). This trend was the same for both males and females, with the proportion of those considered to be obese going from 11% to 27% for males and from 14% to 26% for females. There were no differences between the 2012 to 2013 CHMS and the 2008 Canadian Community Health Survey, in which BMI (body mass index) was also measured.⁶

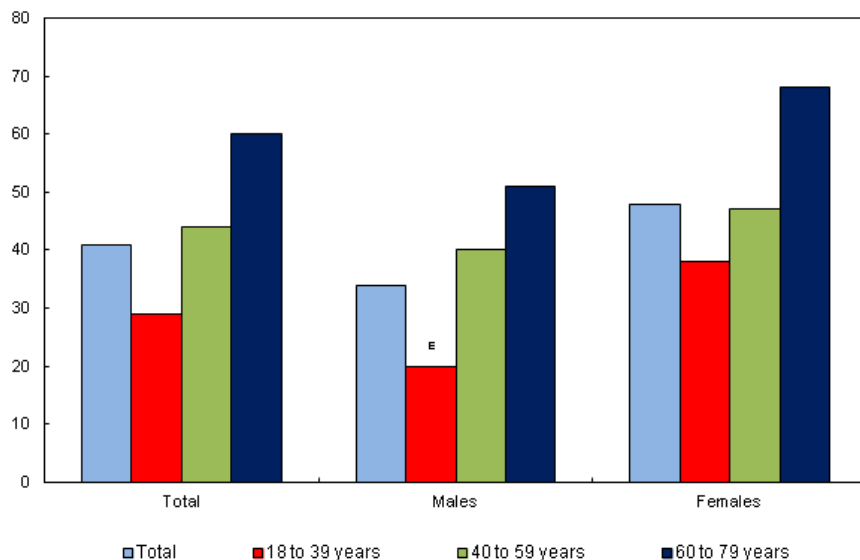
Abdominal obesity

The average waist circumference (WC) of Canadian males aged 18 to 79 was 97.5 cm whereas the result for females was 90.5 cm. The average waist circumference was higher among overweight (95.0 cm) and obese (112.0 cm) Canadians compared to those who were underweight (70.0 cm) or normal weight (81.0 cm).

The proportion of adults considered to have an increased health risk was lower when waist circumference and BMI (body mass index) were considered together (see About body composition). Approximately 41% of the Canadian population aged 18 to 79 (34% of males and 48% of females) were determined to have a body composition associated with increased health risk (Chart 3). Older adults aged 40 to 79 were more likely to have a body composition associated with an increased health risk compared to younger adults aged 18 to 39 years. Younger females aged 18 to 39 were more likely than younger males aged 18 to 39 to have a body composition associated with an increased health risk (38% for females vs. 13% for males). There were no differences between males and females for older adults aged 40 to 79.

Chart 3
Distribution of household population aged 18 to 79 with a body composition associated with a greater risk of developing health problems,¹ by sex and age group, Canada, 2012 to 2013

percent



Use with caution (data with a coefficient of variation (CV) from 16.6% to 33.3%)

1. The assessment of risk for developing health problems is based on body mass index (BMI) and waist circumference cut-points from Ardern et al.

Source: Canadian Health Measures Survey, 2012 to 2013.

About body composition

Body mass index (BMI) is defined as the ratio of person's weight in kilograms by their height squared in meters (kg/m²). BMI (body mass index) represents an estimate of fatty tissue based on weight related to height.¹ It is important to note that the BMI (body mass index) does not directly measure body fat and can lead to some misclassification of health risk. For example, a person with greater fat-free mass (e.g. (for example) muscle or bone)¹ might be categorized as overweight based on their BMI (body mass index), but

the actual health risk for that person would be lower than someone with the same BMI (body mass index) who has more fat mass. Waist circumference is therefore used as an indicator of abdominal fat mass to further refine health risk classification in adults. Excess fat around the waist and upper body is associated with greater health risks than fat located in the hip and thigh areas.¹

The CHMS measured waist circumference based on the National Institutes of Health (NIH) protocol.

The BMI and BMI-waist circumference cut-offs are as follows:⁷

Body mass index (kg/m ²)	Classification	Body mass index risk	Waist circumference (cm)		Body mass index - waist circumference risk
			Males	Females	
< 18.5	Underweight	Increased
18.5 to 24.9	Normal	Least	≥ 90	≥ 80	High
25.0 to 29.9	Overweight	Increased	≥ 100	≥ 90	Very high
30.0 to 34.9	Obese I	High	≥ 110	≥ 105	Extremely high
35.0 to 39.9	Obese II	Very high	≥ 125	≥ 115	Extremely high
40.0 and over	Obese III	Extremely high	≥ 125	≥ 125	Extremely high
... not applicable					

Notes

- 1 Health Canada. 2003. *Canadian Guidelines for Body Weight Classification in Adults*. Ottawa.
- 2 Public Health Agency of Canada, Canadian Institute for Health Information. 2011. *Obesity in Canada*. Ottawa.
- 3 Luppino, F.S., de Wit, L.M., Bouvy, P.F., Stijnen, T., Cuijpers, P., Pennix, B.W.J.H., and F. G. Zitman. 2012. "Overweight, obesity, and depression: A systematic review and meta-analysis of longitudinal studies." *Archives of General Psychology*. Vol. (volume) 67, no. (number) 3, p. (page) 220 to 229.
- 4 Orpana, H., Berthelot, J.M., Kaplan, M.S., Feeny, D.H., McFarland, B., and N.A. Ross. 2010. "BMI (body mass index) and mortality: results from a national longitudinal study of Canadian adults." *Obesity*. Vol. (volume) 18, no. (number) 1, p. (page) 214 to 218.
- 5 Statistics Canada. 1979. *Canada Health Survey (CHS)*. <http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=3217> (accessed: September 15, 2014).
- 6 Statistics Canada. 2009. "Table 105-0507 - Measured adult body mass index (BMI), by age group and sex, household population aged 18 and over excluding pregnant females, Canada (excluding territories)." CANSIM (database) (accessed: September 15, 2014).
- 7 Ardern, C.I., Janssen, I., Ross, R., and P.T. Katzmarzyk. 2004. "Development of health-related waist circumference thresholds within BMI (body mass index) categories." *Obesity Research*. Vol. (volume) 12, no. (number) 7, 1094 to 1103.

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- Ardern, C.I., Janssen, I., Ross, R., and P.T. Katzmarzyk. 2004. "Development of health-related waist circumference thresholds within BMI (body mass index) categories." *Obesity Research*. Vol. (volume) 12, no. (number) 7, 1094 to 1103.
- Health Canada. 2003. *Canadian Guidelines for Body Weight Classification in Adults*. Ottawa.
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Statistics Canada. 2009. "*Table 105-0507 - Measured adult body mass index (BMI), by age group and sex, household population aged 18 and over excluding pregnant females, Canada (excluding territories).*" CANSIM (database) (accessed: September 15, 2014).

Data

Additional data from the Canadian Health Measures Survey are available from CANSIM tables 117-0001 to 117-0011.

For more information on the Canadian Health Measures Survey, please contact Statistics Canada's Statistical Information Service (toll-free 1-800-263-1136; 514-283-8300; infostats@statcan.gc.ca).