

Article

Health Fact Sheet

Blood pressure of Canadian children and youth, 2009 to 2011

Health Statistics Division

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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 <i>Statistics Act</i>
^E	use with caution
F	too unreliable to be published
*	significantly different from reference category ($p < 0.05$)



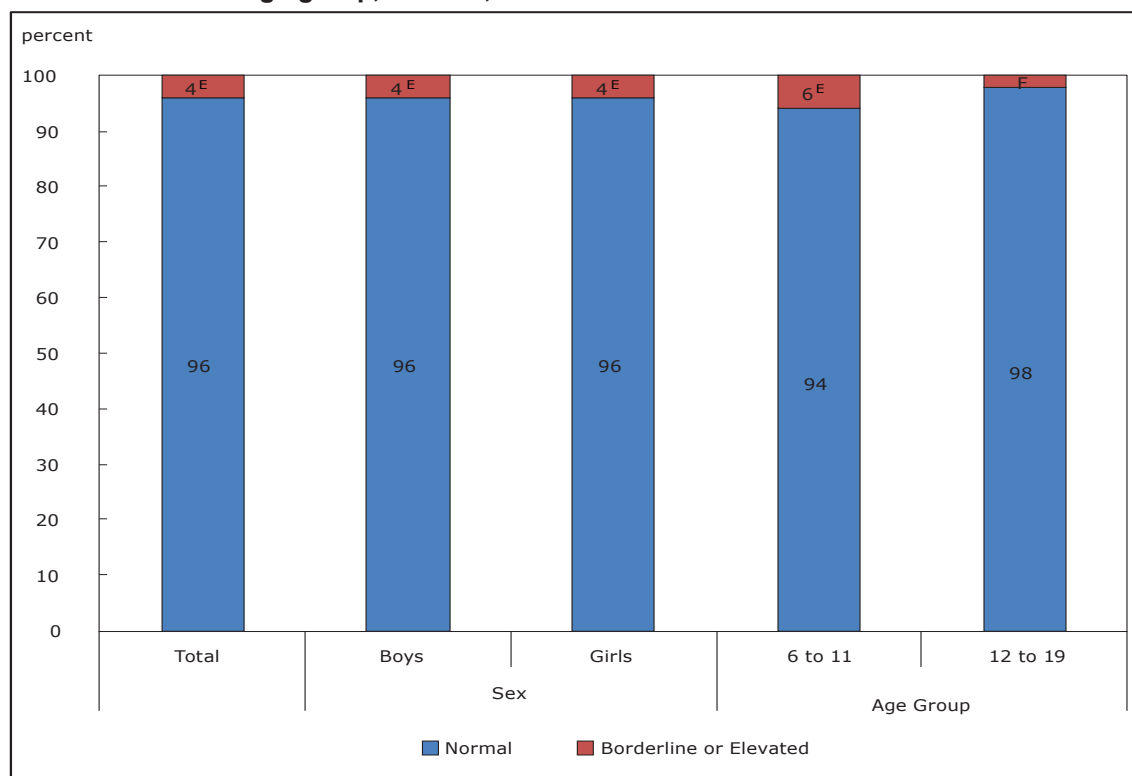
Blood pressure of Canadian children and youth, 2009 to 2011

Among Canadian children and youth, 96% have a measured blood pressure that is considered normal, while the remaining 4% have a measured blood pressure that is considered borderline or elevated. Blood pressure is generally higher among overweight and obese children and youth.

The average resting blood pressure is 94/61 mmHg for Canadian children aged 6 to 11 years and 98/62 mmHg for Canadian youth aged 12 to 19 years based on directly measured blood pressure results from the 2009 to 2011 Canadian Health Measures Survey (CHMS).

Overall, 96% of children and youth have a blood pressure that is considered normal, while the remaining 4% have a measured blood pressure that is considered borderline or elevated (Chart 1) according to the criteria of the National High Blood Pressure Education Program Working Group on High Blood Pressure in Children and Adolescents and the Joint National Committee on Prevention, Detection and Treatment of High Blood Pressure.^{1,2} Boys were no more likely than girls to have borderline or elevated blood pressure.

Chart 1 Distribution of household population aged 6 to 19, by blood pressure classification, sex and age group, Canada, 2009 to 2011



^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)

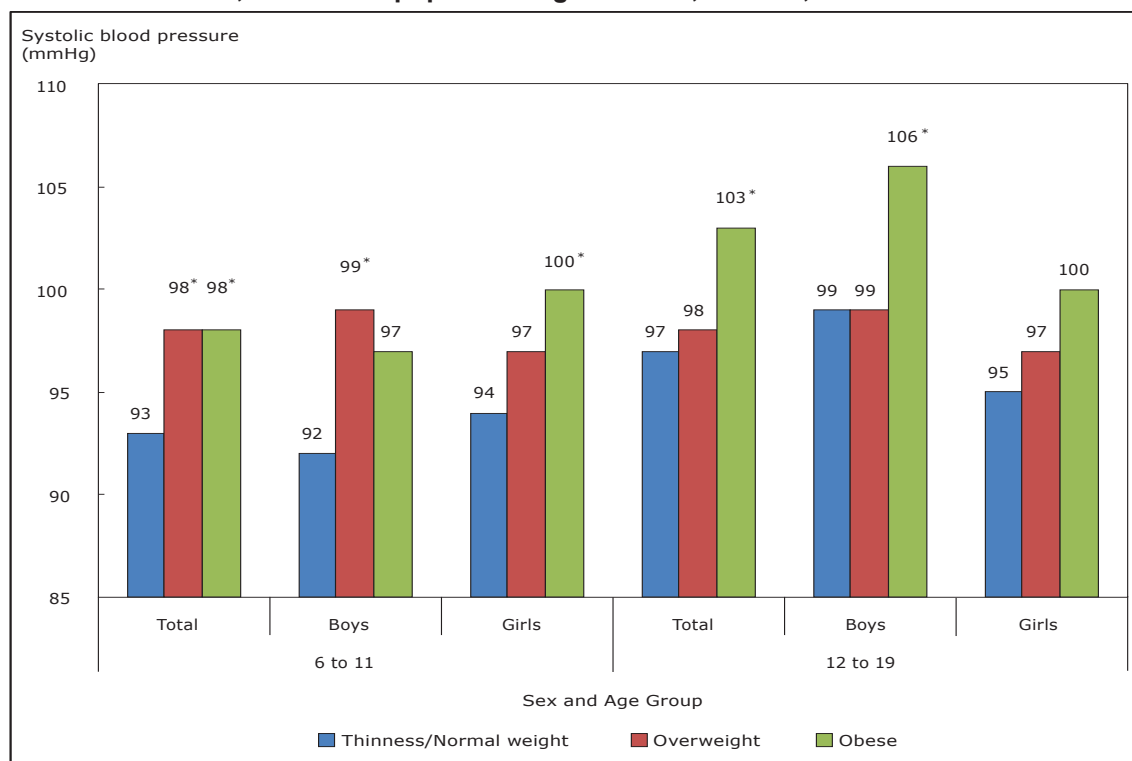
Source: Canadian Health Measures Survey, 2009 to 2011. The CHMS collects health information on the Canadian household population aged 3 to 79.



Blood pressure and body composition

Children and adolescents with higher body mass index tend to have higher systolic blood pressure (SBP) (Chart 2). Average SBP was significantly higher in overweight and obese children aged 6 to 11, and in obese adolescents aged 12 to 19, when compared to their normal weight counterparts. Differences in diastolic blood pressure (DBP) were not as strong; only overweight boys aged 6 to 11 had a significantly higher DBP compared to those of normal weight.

Chart 2 Average systolic blood pressure, by body mass index classification,[†] age group and sex, household population aged 6 to 19, Canada, 2009 to 2011



* Significantly different from estimate for 'Thinness/normal weight' for the same age and sex

[†] Body mass index classification according to the World Health Organization³

Source: Canadian Health Measures Survey, 2009 to 2011. The CHMS collects health information on the Canadian household population aged 3 to 79.



About blood pressure

Blood pressure (BP) is a measure of the force of blood against the artery walls, and is expressed as systolic pressure (SBP)/diastolic pressure (DBP) in millimetres of mercury (e.g., 120/80 mmHg). The systolic pressure (top number) is the pressure when the heart contracts and pushes the blood out and the diastolic pressure (bottom number) is the lowest pressure when the heart relaxes between beats.

Blood pressure has many implications for health. High systolic blood pressure and/or high diastolic blood pressure can cause damage to the blood vessels and can result in heart attack or stroke, which are leading causes of hospitalization and death in Canada. Elevated blood pressure in childhood is a risk factor for the development of hypertension in adulthood and is more likely in those with elevated body mass index.

Blood pressure classifications in children and adolescents

	Ages 6 to 17 ¹	Ages 18 and 19 ²
Normal	SBP and DBP < 90 th percentile	Mean SBP/DBP < 120/80 mmHg
Borderline	SBP or DBP ≥ to the 90 th percentile, but < the 95 th percentile OR Measured mean SBP/DBP > 120/80 mmHg	Mean SBP of 120-139 mmHg and mean DBP of 80-89 mmHg OR Mean SBP of 120-139 mmHg and mean DBP of < 80 mmHg OR Mean SBP < 120 mmHg and mean DBP of 80-89 mmHg
Elevated	SBP or DBP ≥ 95 th percentile OR Respondent reported using BP medication within the past month	Mean SBP/DBP of ≥ 140/90 mmHg OR Respondent reported using BP medication within the past month

References

1. National High Blood Pressure Education Program Working Group on High Blood Pressure in Children and Adolescents. The fourth report on the diagnosis, evaluation, and treatment of high blood pressure in children and adolescents. *Pediatrics*. 2004;114(2 Suppl. 4th report):555-76.
2. Chobanian AV, Bakris GL, Black HR, et al. Seventh report on the Joint National Committee on the Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. *Hypertension*. 2003;42(6):1206-52.
3. de Onis M, Onyango AW, Borghi E, Siyam A, Nishida C, Siekmann J. Development of a WHO growth reference for school-aged children and adolescents. *Bulletin of the World Health Organization*. 2007;85(9):660-7.

For more information on the Canadian Health Measures Survey, please contact Statistics Canada's National Contact Centre (toll-free 1-800-263-1136; 613-951-8116; infostats@statcan.gc.ca).