



# Kids CAN PLAY!

ENCOURAGING CHILDREN TO BE ACTIVE AT HOME, AT SCHOOL, AND IN THEIR COMMUNITIES

## Achieving sufficient steps per day among Canadian children and youth

The Canadian Fitness and Lifestyle Research Institute examines the physical activity levels of children and youth through a study called CANPLAY (the Canadian Physical Activity Levels Among Youth Study). CANPLAY uses pedometers to measure daily steps. This bulletin generally represents data collected during the two year time period from 2014-2016, unless identified as trend information representing data collected in the study between 2005 and 2016. Bulletin 1 in this series shows that Canadian children aged 5 to 19 took approximately 11,300 daily steps on average in 2014-2016.

Researchers and policy makers have been concerned with the question about how many steps are sufficient to represent current physical activity guidelines. Several criteria have been explored based on larger Canadian surveys and these are examined in more detail in this bulletin.

### Average 12,000 steps daily criterion

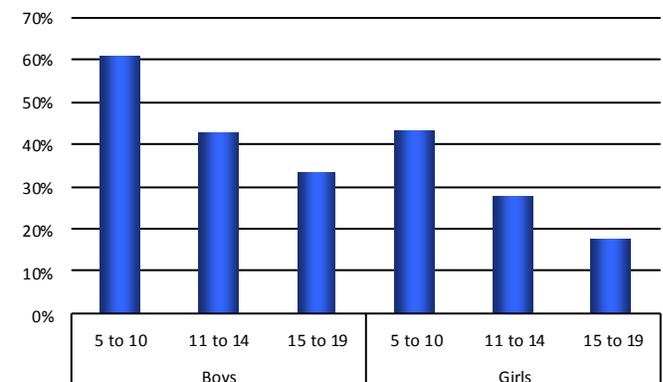
Statistics Canada's Canadian Health Measures Survey has examined the proportion of children and youth who meet the physical activity recommendation contained within the Canadian 24-Hour Movement Guidelines for Children and Youth which specify at least 60 minutes of moderate to vigorous intensity physical activity on a daily basis<sup>1</sup> and determined that 35%-36% of 5 to 17 year olds achieved this amount.<sup>2</sup> In this study, this percentage is measured objectively using accelerometers. In addition, Statistics Canada estimated that approximately 12,000 steps on average would be equivalent to achieving these guidelines. Although the 2014-2016 CANPLAY survey did not assess the intensity of the activity, this analysis has used at least 12,000 steps as an approximate estimate of achieving guidelines based on the number of steps and days of the week.<sup>3</sup> Using this specified number of steps as reported by a pedometer, the 2014-2016 CANPLAY survey indicates that approximately 41% of children and youth aged 5 to 19 achieve at least 12,000 steps per day on average.

### Child characteristics

Using the 2014-2016 CANPLAY survey data, a higher percentage of boys (49%) achieve this criterion compared to girls (32%). The step differences between boys and girls are evident among each age group. In addition, the percentage who met this criterion decreases with increasing age, whereby 52% of 5 to 10 year olds achieve at least 12,000 daily steps on average compared to 26% of 15 to 19 year olds. These age differences generally appear for both boys and girls. Relatively more children and youth who participate in organized physical activity and sport (46%) achieve the step criterion compared to those who do not (22%). Compared to the national average, a lower proportion of children and youth living in Newfoundland and Labrador or New Brunswick achieve at least 12,000 average daily step criterion, whereas relatively more children and youth living in British Columbia and the Yukon meet this criterion.

FIGURE 1

Percent of children and youth achieving at least 12,000 average daily steps by child's age and gender



CANPLAY study, 2014-2016, CFLRI

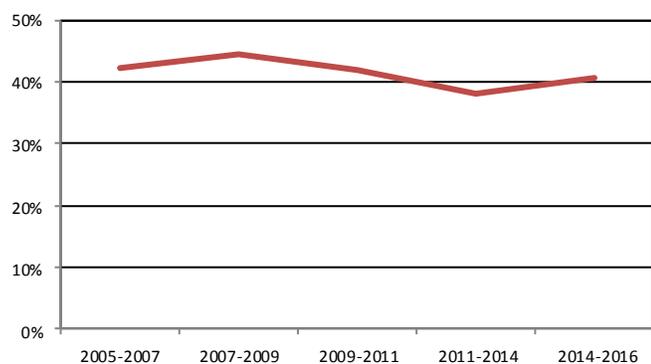


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FIGURE 2

Percent of children and youth achieving at least 12,000 average daily steps, trends over time



CANPLAY study, 2014-2016, CFLRI

### Parent and household characteristics

A greater proportion of children and youth meet at least 12,000 average, daily steps if:

- their parents have a university education versus those who have completed high school or college;
- their parents consider themselves *substantially* more active compared to those whose parents consider themselves *substantially* less active than their own peers;
- they live in the highest income households ( $\geq$ \$60,000/annually) compared to those living in some lower income households (\$20,000 to \$29,999/annually).

### Trends over time

Generally speaking, the percentage of children and youth in Canada achieving at least 12,000 daily steps on average has stayed relatively stable since 2005, with one exception; the percentage in 2011 to 2014 (combined years 7 and 8 of the study) is slightly lower than the rate of previous years.

Relationships between the percentage of children and youth who achieve the criterion of at least 12,000 average steps per day and certain child, parent, and household factors have generally remained consistent over time, such as:

- a greater proportion of boys achieve at least 12,000 daily steps on average compared to girls;
- the proportion achieving the step criterion decreases with increasing age;
- a higher percentage of children and youth who participate in organized physical activity and sport achieve at least 12,000 daily steps on average compared to those who do not;
- differences in the proportion of children and youth meeting the criterion exist with respect to household income;

- lower percentages in Newfoundland and Labrador and higher percentages of children and youth meeting the criterion in British Columbia and the Yukon compared to the national average.

### Achieving at least 12,000 steps on most to all days of the week criterion

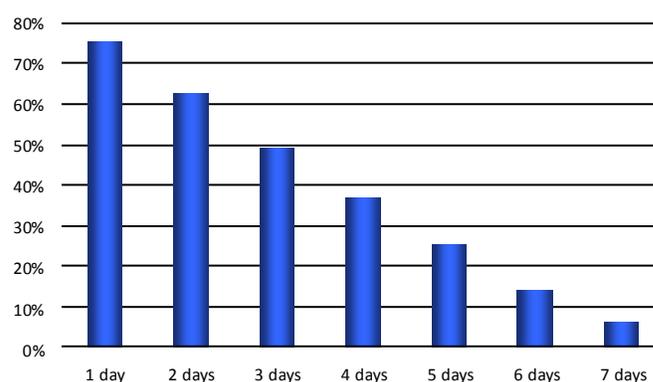
The 12,000 steps criterion was also examined in relation to the *number of days of the week* in which at least 12,000 steps were achieved, given the suggestion of the guidelines that physical activity should be done on a regular, daily basis. Using this specified number of days that a child or youth achieves at least 12,000 steps per day as measured by a pedometer, the 2014-2016 CANPLAY survey indicates that there is an inverse relationship between achieving at least 12,000 steps by increased number of days. Approximately:

- 78% achieve at least 12,000 steps on 1 day of the week
- 63% meet this criterion 2 days of the week
- 49% meet this criterion 3 days of the week
- 37% achieve this 4 days per week
- 25% meet this criterion 5 days per week
- 14% achieve this 6 days of the week
- 6% meet this criterion 7 days per week.

Compared to the national average, a lower proportion of children and youth living in Newfoundland and Labrador achieve at least 12,000 steps on most (at least 4) days of the week, whereas relatively more children and youth living in British Columbia achieve at least 12,000 steps on at least 4 days. Similarly, relatively more living in the Yukon meet at least 12,000 steps on 4 or 5 days per week, and relatively more children living in the Northwest Territories achieve at least 12,000 steps on at least 6 days per week when compared to the national average.

FIGURE 3

Percent of children and youth achieving at least 12,000 steps on number of days of a week



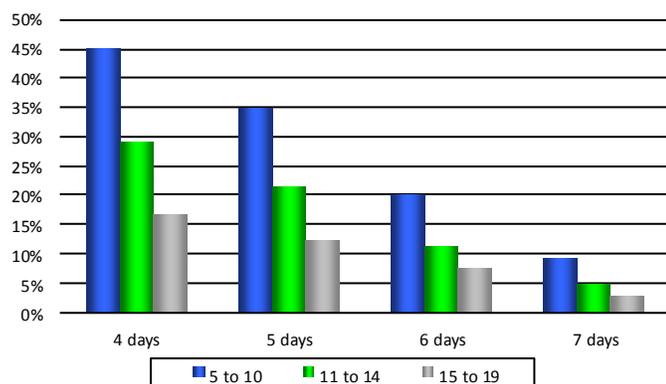
CANPLAY study, 2014-2016, CFLRI

### Child characteristics

A higher percentage of boys achieve at least 12,000 steps on most days of the week (4 days or more) compared to girls. The percentage of children and youth who achieved at least 12,000 steps on most days of the week (4 days or more) generally decreases with increasing age. A greater proportion of children and youth who participate in organized physical activity and sport achieve the step criterion compared to those who do not on at least 4 days of the week.

FIGURE 4

Percent of children and youth achieving at least 12,000 steps by most days of a week



CANPLAY study, 2014-2016, CFLRI

### Parent and household characteristics

A greater proportion of children and youth whose parents have a university education achieve at least 12,000 steps on 4 or 5 days per week compared to those whose parents have a high school education. In a similar fashion, a higher proportion of children and youth living in the highest income households ( $\geq \$100,000$ /annually) achieve at least 12,000 steps on 4, 5 or 6 days per week compared to those in some lower income households.

### References

1. Canadian Society for Exercise Physiology. Canadian 24-hour Movement Guidelines for Children and Youth (ages 5-17 years). 2017. Available from: <https://csepguidelines.ca/children-and-youth-5-17/> (Accessed on Dec. 7, 2018).
2. ParticipAction. The ParticipAction Report Card on Physical Activity for Children and Youth. 2018. Available from: <https://www.participaction.com/en-ca/resources/report-card> (Accessed on Dec. 7, 2018).
3. Colley RC, Janssen I, Tremblay M. Daily step target to measure adherence to physical activity guidelines in children. *Med Sci Sports Exerc.* 2012; 44(5):977-82.

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