Results From Canada’s 2016 ParticipACTION Report Card on Physical Activity for Children and Youth

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Background: The ParticipACTION Report Card on Physical Activity for Children and Youth is the most comprehensive assessment of child and youth physical activity in Canada and provides an update or “state of the nation” that assesses how Canada is doing at promoting and facilitating physical activity opportunities for children and youth. The purpose of this paper is to summarize the results of the 2016 ParticipACTION Report Card. Methods: Twelve physical activity indicators were graded by a committee of experts using a process that was informed by the best available evidence. Sources included national surveys, peer-reviewed literature, and gray literature such as government and nongovernment reports and online content. Results: Grades were assigned to Daily Behaviors (Overall Physical Activity: D−; Organized Sport and Physical Activity Participation: B; Active Play: D+; Active Transportation: D; Physical Literacy: D+; Sleep: B; Sedentary Behaviors: F), Settings and Sources of Influence (Family and Peers: C+; School: B; Community and Environment: A−), and Strategies and Investments (Government: B−; Nongovernment: A−). Conclusions: Similar to previous years of the Report Card, Canada generally received good grades for indicators relating to investment, infrastructure, strategies, policies, and programming, and poor grades for behavioral indicators (eg, Overall Physical Activity, Sedentary Behaviors).

Keywords: advocacy, policy, health communication, child health, knowledge translation

National surveillance data from the last 10 years show that only a small proportion of Canadian children and youth accumulate the recommended amount of moderate-to-vigorous intensity physical activity (MVPA; ≥60 minutes1) on a daily basis.2–4 The high prevalence of physical inactivity in Canadian children and youth is concerning due to the associated health and economic consequences, particularly in adulthood (eg, fourth leading risk factor for mortality worldwide,5 estimated economic cost of $10 billion per year in Canada6–8).

The ParticipACTION Report Card on Physical Activity for Children and Youth is a comprehensive assessment of child and youth physical activity in Canada; an annual update or “state of the nation” that assesses how Canada is doing at promoting and facilitating physical activity opportunities for children and youth.8 ParticipACTION (www.participaction.com) is a national nonprofit organization whose mission is to help Canadians sit less and move more.9 Originally established in 1971, ParticipACTION works with its partners (sport, physical activity and recreation organizations; governments; corporate sponsors) to make physical activity a vital part of everyday life.9 This year marks the 12th year of the Canadian Report Card, and the second year that it has been managed and produced by ParticipACTION.10 From 2005 to 2014, the Report Card was branded the Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth. In 2014, Active Healthy Kids Canada and ParticipACTION made a strategic decision to turn leadership of the Report Card over to ParticipACTION, a long-standing partner, by June 2015.11

The purpose of this paper is to summarize the results of the 2016 ParticipACTION Report Card.12 Grades were based on the best available evidence. Sources included national surveys, peer-reviewed literature, and gray literature such as government and nongovernment reports and online content. In many cases, data were from the previous calendar year. However, older sources were relied upon for indicators where new data were not available. The oldest cycle of data included in this year’s Report Card was from 2012–13.

Methods

In addition to producing the Report Card, ParticipACTION was responsible for the media strategy and dissemination that accompanied the Report Card launch. The Healthy Active Living and Obesity Research Group (HALO; www.haloresearch.ca) at the Children’s Hospital of Eastern Ontario Research Institute was a strategic partner who played a critical role in the research and content development of the 2016 ParticipACTION Report Card. The Report Card Research Committee (RCRC) consisted of 11 experts from various parts of Canada who are affiliated with academic.
government, and nongovernment sectors. They provided content expertise and grade assignments for the Report Card.

The 2016 ParticipACTION Report Card included the 9 core physical activity indicators that are common to the Global Matrix 2.0 (Overall Physical Activity, Organized Sport Participation, Active Play, Active Transportation, Sedentary Behavior, Family and Peers, School, Community and the Built Environment, Government Strategies and Investments). Additional indicators included Physical Literacy, which was introduced for the first time in the 2015 ParticipACTION Report Card; Sleep, which is new to the Report Card this year; and, Nongovernment, which has been included in the Report Card since 2007. Each of these 12 indicators belongs to 1 of 3 categories: Daily Behaviors (Overall Physical Activity, Organized Sport and Physical Activity Participation, Active Play, Active Transportation, Physical Literacy, Sleep, Sedentary Behaviors), Settings and Sources of Influence (Family and Peers, School, Community and Environment), and Strategies and Investments (Government, Nongovernment). The Report Card synthesized data from multiple sources to inform the indicator grades. The data sources relied upon most heavily were national surveys and included the Canadian Health Measures Survey (2012–13 CHMS, Statistics Canada), the Canadian Health Behavior in School-Aged Children survey (2013–14 HBSC, World Health Organization [WHO]/Public Health Agency of Canada [PHAC]), Canada’s Physical Activity Levels Among Youth survey (2014–15 CANPLAY, Canadian Fitness and Lifestyle Research Institute [CFLRI]), the Opportunities for Physical Activity at School study (2015 OPASS, CFLRI), the Physical Activity Opportunities in Canadian Communities survey (2015 PAOCC, CFLRI), the Canadian Assessment of Physical Literacy (2011–16 CAPL, HALO) and the Physical Activity Monitor (2014–15 PAM, CFLRI). See Table 1 for more detail on each survey.

A summary of available data and peer-reviewed literature was prepared by HALO to facilitate the RCRC’s review of the information, which took place at the grade assignment meeting in Ottawa in February 2016. For each indicator, grade assignments were determined based on an examination of the current data and literature against a predefined benchmark or optimal scenario. The grades were generally based on the proportion of children and youth in Canada who were meeting the benchmark(s): \( A = 81\% \) to 100\%, \( B = 61\% \) to 80\%, \( C = 41\% \) to 60\%, \( D = 21\% \) to 40\%, \( E = 0\% \) to 20\%. When appropriate, trends over time, the presence of disparities, and international comparisons helped inform the grades. National data took precedence over subnational and regional data, and objectively measured data took precedence over subjectively measured data. Disparities were primarily based on age (eg, children vs. adolescents), sex, and socioeconomic status (eg, low- vs. high-income households). When evidence of meaningful disparities existed, grades were lowered to reflect the fact that Canada is not reaching all children and youth who may benefit most from physical activity opportunities. Some indicators were stand-alone (Daily Behavior indicators), while others were comprised of several components (eg, the School indicator consisted of physical education and physical activity participation at school and in childcare settings; school policy and programming; and, school infrastructure and equipment).

At the grade assignment meeting, each component of an indicator was assessed, where applicable. During the Report Card’s 12-year history, an attempt has been made to move toward indicators that are broad enough to contain various components in their assessment so that indicators can become more consistent from year to year. This also provides a more succinct message for knowledge translation.

Since 2005 the Report Card has included a cover story that draws attention to a theme or issue related to child and youth physical activity in Canada. The main purpose of the cover story has been to provide a hook for media who might otherwise view a new release of the Canadian Report Card as old news that has already been covered. The 2015 ParticipACTION Report Card included a knowledge product (A Position Statement on Active Outdoor Play) as part of the cover story (“The Biggest Risk is Keeping Kids Indoors”) and this made a significant contribution to the success of the 2015 Canadian Report Card release as gauged by metrics of media uptake (eg, 300 million earned media impressions and 1,000 news stories, exceeding the 2014 Canadian Report Card’s impressions by 35%). ParticipACTION decided to take advantage of this approach again in 2016 by incorporating the first-ever Canadian 24-Hour Movement Guidelines for Children and Youth: An Integration of Physical Activity, Sedentary Behavior, and Sleep as the cover story.

A more detailed account of the Report Card methodology has been published previously.

Table 1  Data Sources for the Canadian 2016 ParticipACTION Report Card on Physical Activity for Children and Youth

<table>
<thead>
<tr>
<th>Survey Name</th>
<th>Data Collection Period</th>
<th>Sample Size</th>
<th>Age Range</th>
<th>Physical Activity Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canadian Assessment of Physical Literacy (CAPL)</td>
<td>2011–16</td>
<td>7600</td>
<td>8- to 12-year-olds</td>
<td>Pedometry, self-report</td>
</tr>
<tr>
<td>Canadian Health Measures Survey (CHMS)</td>
<td>2012–13</td>
<td>5500</td>
<td>3- to 17-year-olds</td>
<td>Accelerometry</td>
</tr>
<tr>
<td>Canadian Physical Activity Levels Among Youth Survey (CANPLAY)</td>
<td>2014–15</td>
<td>3000 to 10,000 depending on the year</td>
<td>5- to 19-year-olds</td>
<td>Pedometry, self-report</td>
</tr>
<tr>
<td>Opportunities for Physical Activity at School Survey (OPASS)</td>
<td>2015</td>
<td>4000 to 10,000 depending on the year</td>
<td>Adults (school administrators)</td>
<td>Self-report</td>
</tr>
<tr>
<td>Physical Activity Monitor (PAM)</td>
<td>2014–15</td>
<td>4000 to 11,000 depending on the year</td>
<td>Adults (municipal administrators)</td>
<td>Self-report</td>
</tr>
<tr>
<td>Physical Activity Opportunities in Canadian Communities Survey (PAOCC)</td>
<td>2015</td>
<td>4000 to 10,000 depending on the year</td>
<td>Adults (municipal administrators)</td>
<td>Self-report</td>
</tr>
</tbody>
</table>
Results and Discussion

ParticipACTION took a leadership role in the development of the cover story for the 2016 Report Card. Potential stories were presented at the indicator and grade assignment meetings, and feedback was sought from the RCRC before the 2016 cover story was finalized. The cover story (“Are Canadian Kids Too Tired to Move?”) is illustrated in Figure 1 and a summary of the 2016 grades is available in Table 2.

Are Canadian Kids Too Tired to Move?

Drawing upon emerging evidence of the important relationships between physical activity, sedentary behavior and sleep, the Canadian 24-Hour Movement Guidelines for Children and Youth make recommendations that pertain to the whole day. They recommend high levels of light and moderate-to-vigorous physical activity, minimal sedentary behavior, and sufficient sleep required for optimal health. The 2016 cover story (“Are Canadian Kids Too Tired to Move?”) drew attention to the evidence base for the Guidelines with particular reference to the research that shows a connection between high levels of sedentary behavior and a creeping “sleep epidemic” in Canadian children and youth. To reflect the importance of the 24-hour period, Sleep was also included as an indicator for the first time.

Overall Physical Activity: D-

Based on the most recent accelerometer data from a nationally representative study (2012–13 CHMS, Statistics Canada), 70% of 3- to 4-year-olds accumulate at least 180 minutes of physical activity at any intensity per day and 9% of 5- to 17-year-olds accumulate at least 60 minutes of MVPA per day.

Newly available pedometer data and self-report data show similar results: 7% of 5- to 19-year-olds take at least 12,000 steps every day of the week (2014–15 CANPLAY, CFLRI; unpublished custom analysis); 20% of 11- to 15-year-olds report at least 60 minutes of MVPA on all 7 days of the week (2013–14 HBSC, WHO/PHAC). The grade for this indicator is a D- for the fourth year in a row and reflects the balance between 1 age group that is doing well (3- to 4-year-olds) and 2 age groups (5- to 11-year-olds and 12- to 17-year-olds) who continue to accumulate daily physical activity below the recommended levels.

Organized Sport and Physical Activity Participation: B

New data from the HBSC show that a high proportion of 11- to 15-year-olds (76%) report participation in organized sport (2013–14 HBSC, WHO/PHAC). Seventy-seven per cent of parents from the 2014–15 data cycle of the CANPLAY (CFLRI) also report that their 5- to 19-year-olds participate in organized physical activity or sport. Though this proportion has remained stable over the last 8 years, it is several percentage points higher compared with the earliest years of the study (2005–07 CANPLAY, CFLRI; unpublished custom analysis). For this reason, the RCRC decided that a slight improvement in the grade was warranted and assigned a grade of B, which is slightly better than the previous B- grade.

Active Play: D+

The benchmarks for this indicator pertain to the proportion of children and youth who engage in unstructured/unorganized active play for several hours per day, and who play outdoors for several hours per day. For the first time, data were available that matched one of these benchmarks: 37% of 11- to 15-year-olds in Canada report playing outdoors for more than 2 hours per day outside of school hours (2013–14 HBSC, WHO/PHAC). The grade of D+ represents the first time this indicator has been assigned a grade by the RCRC since 2012.
Active Transportation: D

According to new data from 2 national surveys, approximately a quarter of Canadian children and youth use active transportation to get to and from school; 25% of parents in Canada report that their 5- to 17-year-olds use only active transportation to and from school (subsample of the 2014–15 PAM, CFLRI; unpublished custom analysis); 26% of 11- to 15-year-olds in Canada report using active transportation on the main part of their trip to school (2013–14 HBSC, WHO/PHAC). These results are similar to data from previous years; therefore, the RCRC assigned a grade of D for the fourth year in a row.

Physical Literacy: D+

The benchmark for this indicator is the proportion of children and youth who meet the recommended levels of physical literacy (physical competence, daily behavior, motivation and confidence, and knowledge and understanding). Currently, the only available data to inform the grade were from the Canadian Assessment of Physical Literacy study (2011–16 CAPL, HALO), which has physical literacy data from a convenience sample of more than 2000 children (8- to 12-year-olds) from 6 provinces in Canada. Although 44% of these participants meet the recommended levels of physical literacy, sex disparities exist for each domain. The RCRC decided that these disparities prevent the grade from entering the C range and assigned a D+ grade. The physical literacy indicator has only been a part of the ParticipACTION Report Card since 2015 and this is the first year it has been graded.

Sleep: B

This year marks the first time the ParticipACTION Report Card includes a Sleep indicator. This coincides with the release and introduction of the Canadian 24-Hour Movement Guidelines for Children and Youth—which is the first national Canadian framework to incorporate a Sleep indicator. This coincides with the release and introduction of the Canadian 24-Hour Movement Guidelines for Children and Youth—which is the first national Canadian framework to incorporate a Sleep indicator. According to most school administrators in Canada, indoor and outdoor physical activity infrastructure is largely available at schools and/or off-site near schools. This infrastructure includes gymnasiums (94%), playing fields (88%), other green spaces or play areas (88%), and areas with playground equipment (71%) (2015 OPASS, CFLRI). Most schools/school boards/ministries report having partially- or fully-implemented school policies relating to physical activity. For example, 73% provide a range of physical activities for students, 69% have a policy providing daily physical education (PE) to all students and 62% hire teachers with university qualifications to teach PE or physical activity (2015 OPASS, CFLRI). Three-quarters of schools (elementary and secondary) report that they use a PE specialist to teach PE, but the percentage of students obtaining instruction and the frequency of instruction from the specialist varies (2015 OPASS, CFLRI; unpublished custom analysis). This year’s assigned grade of B is an improvement over the 2014 and 2015 grades (C+) and reflects more available data on school infrastructure and PE provision.

Sedentary Behaviors: F

New data from multiple surveys indicate that few children and youth in Canada achieve the recommended levels of screen time. For example, only 10% of 11- to 15-year-olds report no more than 2 hours of screen time on an average day (2013–14 HBSC, WHO/PHAC). Three per cent of grades 9 to 12 students meet these recommendations, spending an average of 8.2 hours per day in screen-based sedentary behavior. Although older, available data on 3- to 4-year-olds show that only 15% meet the recommendation of less than 1 hour of screen time per day (2012–13 CHMS, Statistics Canada; unpublished custom analysis). This year’s grade returned to the F range where it has been since 2009, with the exception of last year when the grade was a D-.

Family and Peers: C+

Throughout the 12-year history of the Canadian Report Card, there has been—and continues to be—a lack of peer influence data to inform the grade for this indicator; therefore, the grade this year was based on data relating to parental support and role modeling of physical activity. A recent survey of 3000+ parents in Ontario revealed that a high proportion (280%) report playing a facilitative/supportive role in the physical activity of their children (eg, 82% enroll their child in sports, clubs or community programs; 86% encourage their child to walk or bike to destinations that are reasonably close; 94% take their child to places where they can be physically active). Though not nationally representative, these results are comparable to what has been found in past cycles of the PAM study (CFLRI), which has informed the grade in previous Report Cards. Data on parental role modeling of physical activity are less favorable and help explain why the grade was not in the A or B range. For example, new data from a subsample of the 2014–15 PAM study (CFLRI; unpublished custom analysis) show that only 36% of Canadian parents report playing active games with their kids (5- to 17-year-olds). Although a more indirect measure of role modeling, the proportion of Canadian adults of parenting age who are sufficiently active on a weekly basis is also low: only 32% of 18- to 39-year-olds and 18% of 40- to 59-year-olds meet the Canadian Physical Activity Guidelines for Adults, which recommend at least 150 minutes of MVPA per week (2012–13 CHMS, Statistics Canada). Based on these results, the RCRC assigned a grade of C+ for the second year in a row. The indicator has been in the C range since 2013.

School: B

According to most school administrators in Canada, indoor and outdoor physical activity infrastructure is largely available at schools and/or off-site near schools. This infrastructure includes gymnasiums (94%), playing fields (88%), other green spaces or play areas (88%), and areas with playground equipment (71%) (2015 OPASS, CFLRI). Most schools/school boards/ministries report having partially- or fully-implemented school policies relating to physical activity. For example, 73% provide a range of physical activities for students, 69% have a policy providing daily physical education (PE) to all students and 62% hire teachers with university qualifications to teach PE or physical activity (2015 OPASS, CFLRI). Three-quarters of schools (elementary and secondary) report that they use a PE specialist to teach PE, but the percentage of students obtaining instruction and the frequency of instruction from the specialist varies (2015 OPASS, CFLRI; unpublished custom analysis). This year’s assigned grade of B is an improvement over the 2014 and 2015 grades (C+) and reflects more available data on school infrastructure and PE provision.

Community and Environment: A-

More than 75% of administrators of Canadian municipalities with at least 1000 residents report the presence of targeted physical activity programming and scheduling for various groups (2015 PAOCC, CFLRI). Sixty-four per cent and 53% of administrators report that targeted physical activity programming and scheduling is in place for children and families, respectively, and that they...
are operated by both municipal and nonmunicipal groups (2015 PAOCC, CFLRI). A high proportion of municipalities also report shared-use agreements with school boards (81% and 52% in relation to resources and programming respectively) and sport organizations/physical activity clubs (88% and 64% in relation to facilities and resources/programming respectively) (2015 PAOCC, CFLRI; unpublished custom analysis). Less than 20% of Canadian parents report that crime or safety are issues in their neighborhood (subsample of the 2014–15 PAM, CFLRI; unpublished custom analysis). The homicide rate for all ages in Canada in 2014 is 17% lower than in 2011 (1.45 vs. 1.74 per 100,000) (2011–14 Uniform Crime Reporting Survey, Statistics Canada). The RCRC decided that a higher grade was warranted for this indicator because of the improvements in community policy/programming and measures of crime and safety that were captured in these new data. The assigned grade of A– is an improvement over the 2014 and 2015 grades (B+).43

**Government: B–**

With the formation of a new federal government in Canada following the Liberal Party of Canada’s win in the October 2015 election, Prime Minister Justin Trudeau issued mandate letters to his ministers, several of which contained specific call-outs to the physical activity, sport and recreation sectors (Minister of Sport and Persons with a Disability, Minister of Infrastructure and Communities, Minister of Environment and Climate Change). Several federal agencies and branches have leveraged and spent millions of dollars on physical activity and sport promotion including the Public Health Agency of Canada ($34 million since 2013) and Sport Canada ($16 million in 2015–16). The federal government also revealed plans in its 2016 budget to eliminate the Child Fitness Tax Credit in 2017 “to simplify the tax code and better target support for families with children.” Provincial and territorial governments in Canada were also actively involved in physical activity promotion in various ways in 2016 (eg, launch of action plans, investment in physical activity initiatives, provision of financial assistance to sport and recreation organizations, hosting of conferences). These efforts are highlighted in the 2016 ParticipACTION Report Card. The grade for this indicator improved last year due primarily to governmental promises and projected work that has now come to fruition. The grade remained a B– this year due to a lack of new activity (eg, increased funding, new policy implementation).

**Nongovernment: A–**

This year’s grade was informed, in part, by a survey of ParticipACTION’s network partners including nongovernment, nonprofit, and for-profit organizations. The majority of responding organizations indicated their investment in physical activity promotion had either increased or remained stable compared with the previous fiscal year. Of particular note was the work of several nongovernment organizations (the Healthy Active Living and Obesity Research Group, the Canadian Society for Exercise Physiology, ParticipACTION and the Conference Board of Canada) with support from the Public Health Agency of Canada, that led to the development of the Canadian 24-Hour Movement Guidelines for Children and Youth: An Integration of Physical Activity, Sedentary Behavior, and Sleep. The Lawson Foundation launched its new Outdoor Play Strategy in January 2016, which included $2.7 million for 14 community projects from diverse sectors undertaking a variety of approaches to supporting outdoor play. In 2015, RBC—in partnership with ParticipACTION, Sport for Life, and the Public Health Agency of Canada—provided more than $2,040,000 in grants (ranging from $1000 to $25,000) to organizations across multiple sectors. An additional $150,000 in grants was awarded to system change pilot initiatives. The RCRC assigned this indicator an A– grade for the third year in a row because the available data around leadership and commitment, allocation of funds, and policy work did not signal an upgrade or downgrade of the grade.

**Strengths and Limitations**

The 2016 ParticipACTION Report Card benefits from a RCRC consisting of a diverse group with expertise in all areas of physical activity covered in the Report Card. In addition to the expertise this group brings to the ParticipACTION Report Card, some members have access to important physical activity datasets and are able to run custom analyses that directly address 1 or more benchmarks for a given indicator that, in some cases, could not otherwise be graded (eg, Active Play).

While all 12 indicators were assigned a grade in the 2016 ParticipACTION Report Card, research gaps remain that, if addressed, would better inform the grades. For example, the data for the Organized Sport and Physical Activity Participation indicator continue to be self-report in nature. Thus, more objective monitoring (eg, sport memberships) would assist in providing a more complete picture of child and youth sport participation in Canada. At present, there may be data at the provincial/territorial level, but it is not certain that the definition of a member is consistently applied and no efforts are currently underway to consolidate the data.

In 2014, research gaps pertaining to the Active Play indicator were mentioned. Specifically, a lack of clarity existed around the definition and measurement of active play. The benchmark was also relatively arbitrary (proportion of children and youth who engage in unstructured/unorganized physical activity for several hours per day) and lacking an evidence base. These challenges remain in the 2016 ParticipACTION Report Card. The sporadic and unorganized nature of active play makes it particularly difficult to measure compared with other behaviors that contribute to overall physical activity.

The Active Transportation indicator is broad enough to include data on all modes of active transportation and destinations yet the only data that have informed the grade over the years relate to the trip to and from school. Research on active transportation to and from a broader range of destinations (eg, parks, shops, sports fields) is needed and would do much to complete our understanding of active transportation behaviors among children and youth in Canada.

The Sedentary Behaviors indicator was informed by national data on self-reported screen time, yet several research gaps remain and were mentioned in the 2016 ParticipACTION Report Card: Research needs to (1) better differentiate the effects of screen-based vs. nonscreen sedentary behaviors and their influence on health indicators; (2) better understand the impact of total sedentary time on health relative to the proportion of time spent in physical activity and sleep, using novel analyses (such as compositional analyses); (3) use monitors to capture posture in studies objectively measuring sedentary time to minimize misclassification between light physical activity, sedentary behavior and sleep; (4) examine smaller screen devices, such as tablets and smartphones, to understand whether these devices are used primarily while seated and how the use of these popular devices impact physical, social and mental health; and (5) account for multitasking of different types of sedentary behavior.

As noted in 2014, the Family and Peers indicator grade was based solely on data relating to family physical activity due to the
lack of gradable data on peer influence. A lack of peer data continues to be a research gap in this Report Card.

Conclusion

The proportion of Canadian children and youth who achieve the recommended levels of physical activity and screen time on a daily basis is low. This coincides with a perplexingly favorable physical activity landscape in Canada characterized by substantial government and nongovernment investments, and good availability of facilities, policies and programs at the municipal/community and school levels. This may signal the need for a more coordinated strategic approach to physical activity promotion efforts before noticeable and positive changes will be seen in the movement behaviors of Canadian children and youth.

Acknowledgments

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References


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