



The Biggest Risk is
**KEEPING KIDS
INDOORS**



2015

The ParticipACTION Report Card on
Physical Activity for Children and Youth





The 2015 ParticipACTION Report Card on Physical Activity for Children and Youth

HELP US DO OUR JOB BETTER

The Report Card is based on the best available physical activity data from the previous calendar year. If you have data that is not currently in the Report Card, which could inform the grade for one or more indicators, please contact ParticipACTION (info@participation.com).

In the fall of 2014, Active Healthy Kids Canada and ParticipACTION made a strategic decision to turn leadership of the Active Healthy Kids Canada Report Card over to ParticipACTION, a long-standing partner, and wind down operations of Active Healthy Kids Canada.

ParticipACTION's strategic partner, the Healthy Active Living and Obesity Research Group at the Children's Hospital of Eastern Ontario Research Institute (CHEO-HALO), played a critical role in the research and development of the 2015 Report Card:



Production of the Report Card is possible through funding from:



Additional support is provided by provincial and territorial governments through the Interprovincial Sport and Recreation Council (ISRC). A donation has also been received from IA Clarington Investments.

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ParticipACTION. The Biggest Risk is Keeping Kids Indoors. The 2015 ParticipACTION Report Card on Physical Activity for Children and Youth. Toronto: ParticipACTION; 2015.

The 2015 Report Card and a summary of its findings (the Highlight Report) are available online at www.participationreportcard.com.

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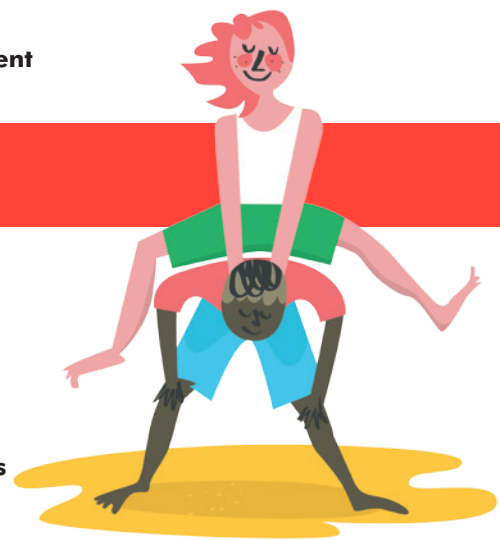
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Date of Publication

June 9, 2015

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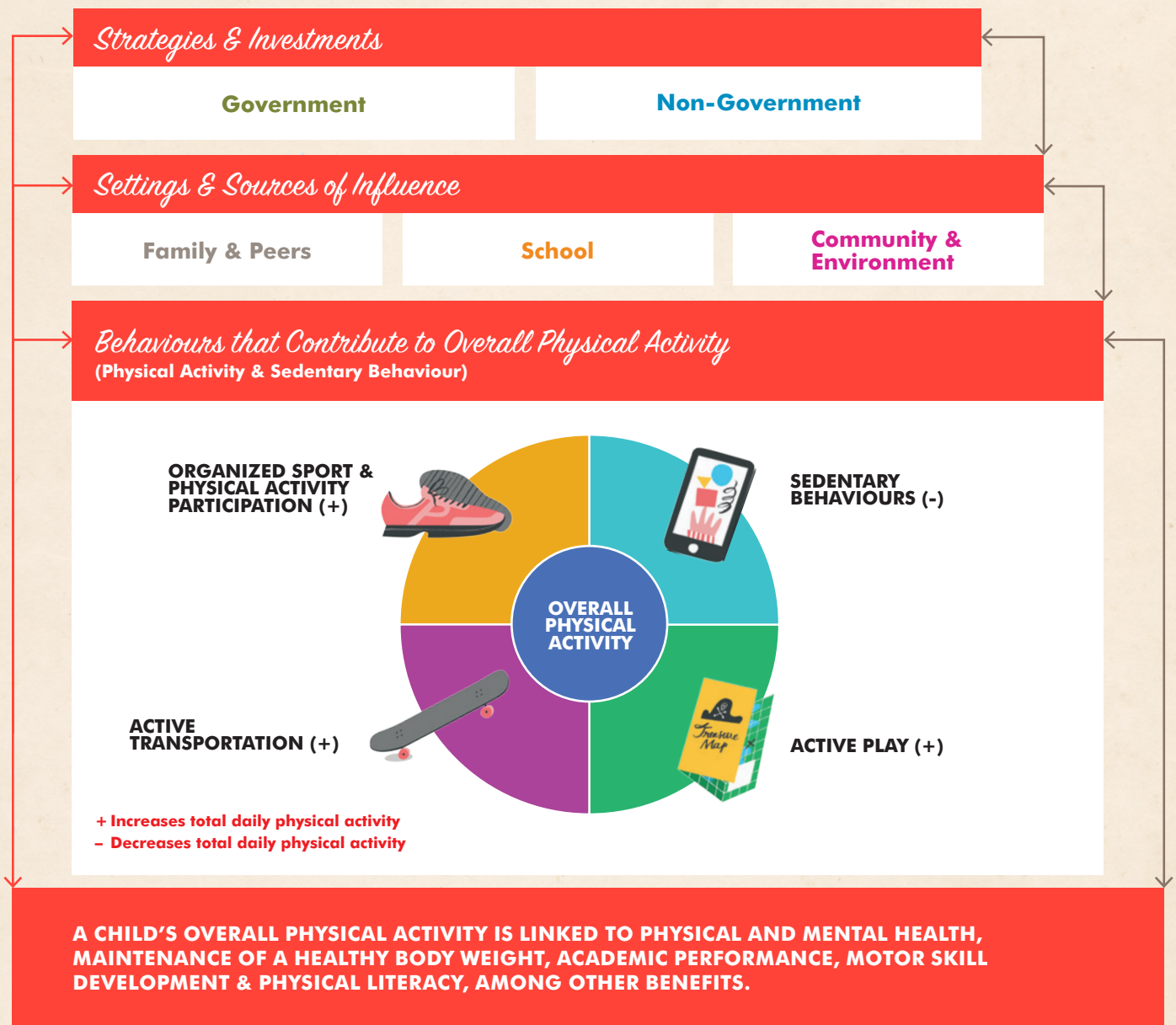


Indicators & Grades

Grades are common to every report card. The 2015 Report Card assigns letter grades to 11 different indicators that are grouped into three categories (Figure 1): **Strategies & Investments** (Government, Non-Government), **Settings & Sources of Influence** (Family & Peers, School, Community & Environment), and the **Behaviours that Contribute to Overall Physical Activity Levels** (Overall Physical Activity, Organized Sport & Physical Activity Participation, Active Play, Active Transportation, Physical Literacy,

Sedentary Behaviours). Letter grades are based on an examination of current data for each indicator against a benchmark along with an assessment of trends over time, and the presence of disparities (e.g., age, gender, disability, ethnicity, socioeconomic status). Together, the indicators provide a complete and robust assessment of how we are doing as a country in promoting and facilitating physical activity among Canadian children and youth.

FIGURE 1. Summary of the 2015 Report Card indicators.



Why Is Physical Activity Important?

The benefits of physical activity in children and youth are far-reaching, with many direct and associated positive outcomes. Regular physical activity at light, moderate and vigorous intensities is associated with more favourable markers of cardiovascular and metabolic health (e.g., lower blood pressure, insulin levels and waist circumference).^{1,2} Typically, the more intense the activity, the greater the health benefit.² In addition to the physical benefits, research shows a positive link between physical activity and aspects of mental (e.g., better academic performance^{3,4}), emotional (e.g., improved anxiety and depression symptoms^{3,5}) and social health (e.g., improved social skills¹⁷).

The Canadian Physical Activity Guidelines for Children and Youth,⁵ which are based on a substantial body of evidence, recommend that 5- to 17-year-olds get at least 60 minutes of daily moderate- to vigorous-intensity physical activity (MVPA). Despite these recommendations, new data from Statistics Canada reveal that only 9% of 5- to 17-year-olds in Canada meets this target (2012-13 CHMS, Statistics Canada). This is a worrying finding given physical inactivity's link with a clustering of cardiovascular disease risk factors (e.g., higher blood pressure, insulin and cholesterol levels).⁶ Additionally, physical inactivity places a significant economic burden in Canada with estimated annual costs in the billions.⁷⁻⁹ The importance of physical activity for children and youth remains as relevant and important as ever before.



Get Out of the Way and Let Them Play

Despite common knowledge that Canadian kids need to sit less and move more, the two lowest grades in this year's Report Card are a D- for Sedentary Behaviours and a D- for Overall Physical Activity.

We may be so focused on trying to intervene in our children's lifestyles to make sure they're healthy, safe and happy, that we are having the opposite effect. We call this **the protection paradox**. We overprotect kids to keep them safe, but keeping them close and keeping them indoors may set them up to be less resilient and more likely to develop chronic diseases in the long run.

Outdoor play is essential because kids are more active when they're outside:

- » Ontario preschoolers spend twice as much time being active when play is outdoors (53% of time active outdoors versus 23% of time active indoors).¹⁰
- » Students take 35% more steps when physical education class is held outdoors.¹¹
- » Canadian kids aged 9-17 who play outside after school get 20 more minutes of heart-pumping activity per day, and are three times more likely to meet the Canadian Physical Activity Guidelines.¹²

It may be no surprise that outdoor time is good for kids—but in wanting them to be safe outdoors, we sometimes over-supervise their play. Kids are more active when they have some freedom to roam and take risks:

- » Grade 5 and 6 students who are often or always allowed to go out and explore unsupervised get 20% more heart-pumping activity than those who are always supervised.¹³
- » 3- to 5-year-old kids are less likely to be active on playgrounds that are designed to be "safer," because many kids equate less challenging with boring.¹⁴
- » Children and youth are less likely to engage in higher levels of physical activity if a parent or supervising adult is present.^{13,15,16}

What many parents recall from their childhoods as thrilling and exciting play is often called "risky play" these days. These are the active games and independent play that tested boundaries and included things like exploring the woods, rough housing, moving fast or playing at heights. We are not suggesting that children be reckless, but we do recognize that some risk is actually good for kids:

- » Kids with ready access to unsupervised outdoor play have better-developed motor skills, social behaviour, independence and conflict resolution skills.¹⁷⁻¹⁹
- » Adventure playgrounds and loose parts playgrounds, which support some exposure to "risky" elements, lead to an increase in physical activity and decrease in sedentary behaviours.²⁰⁻²³

While physical activity injuries to children are common—from all forms of physical activity and not just risky play—the vast majority of these injuries are minor. We need to give kids the freedom to occasionally scrape a knee or twist an ankle.

As stated in the *Position Statement on Active Outdoor Play*, long-term health should be valued as much as safety. We need to consider the possibility that rules and regulations designed to prevent injuries and reduce perceived liability consequences have become excessive, to the extent that they actually limit rather than promote children's physical activity and health. Adults need to get out of the way and let kids play.



Position



Access to active play in nature and outdoors—with its risks—is essential for healthy child development. We recommend increasing children’s opportunities for self-directed play outdoors in all settings—at home, at school, in child care, the community and nature.

Preamble

We conducted two systematic reviews to examine the best available scientific evidence on the net effect (i.e., balance of benefits vs. harms) of outdoor and risky active play. Other research and reviews were also consulted. The Position Statement applies to girls and boys (aged 3-12 years) regardless of ethnicity, race, or family socioeconomic status. Children who have a disability or a medical condition should also enjoy active outdoor play in compliance with guidance from a health professional.

Context

In an era of schoolyard ball bans and debates about safe tobogganing, have we as a society lost the appropriate balance between keeping children healthy and active and protecting them from serious harm? If we make too many rules about what they can and can't do, will we hinder their natural ability to develop and learn? If we make injury prevention the ultimate goal of outdoor play spaces, will they be any fun? Are children safer sitting on the couch instead of playing actively outside? **We need to recognize the difference between danger and risk. And we need to value long-term health and fun as much as we value safety.**

Risk is often seen as a bad word—by parents, neighbours, care providers, insurance providers, schools and municipalities. But in play, risk doesn't mean courting danger—like skating on a half-frozen lake or sending a preschooler to the park alone. It means the types of play children see as thrilling and exciting, where the possibility of physical injury may exist, but they can recognize and evaluate challenges according to their own ability.^{24,25} It means giving children the freedom to decide how high to climb, to explore the woods, get dirty, play hide 'n seek, wander in their neighbourhoods, balance, tumble and rough-house, especially outdoors, so they can be active, build confidence, autonomy and resilience, develop skills, solve problems and learn their own limits. It's letting kids be kids—healthier, more active kids.

Evidence

» **When children are outside they move more, sit less and play longer^{10,11,26-33}—behaviours associated with improved cholesterol levels, blood pressure, body composition, bone density, cardiorespiratory and musculoskeletal fitness and aspects of mental, social and environmental health.^{6,34-42}**

» **Outdoor play is safer than you think!**

- o The odds of total stranger abduction are about 1 in 14 million based on RCMP reports.⁴³ Being with friends outdoors may further reduce this number.
- o Broken bones and head injuries unfortunately do happen, but major trauma is uncommon. Most injuries associated with outdoor play are minor.⁴⁴⁻⁵¹
- o Canadian children are eight times more likely to die as a passenger in a motor vehicle than from being hit by a vehicle when outside on foot or on a bike.⁵²⁻⁵⁴

» **There are consequences to keeping children indoors—is it really safer?**

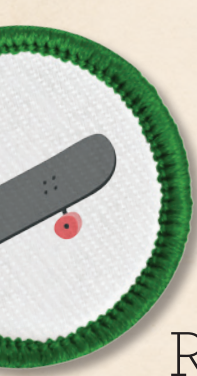
- o When children spend more time in front of screens they are more likely to be exposed to cyber-predators and violence, and eat unhealthy snacks.⁵⁵⁻⁵⁹
- o Air quality indoors is often worse than outdoors, increasing exposure to common allergens (e.g., dust, mould, pet dander), infectious diseases, and potentially leading to chronic conditions.⁶⁰⁻⁶³
- o In the long-term, sedentary behaviour and inactivity elevate odds of developing chronic diseases, including heart disease, type-2 diabetes, some forms of cancer and mental health problems.⁶⁴⁻⁷³

» **Hyper-parenting limits physical activity and can harm mental health.^{15,74-76}**

» **When children are closely supervised outside, they are less active.^{13,16,27,77-85}**

» **Children are more curious about, and interested in, natural spaces than pre-fabricated play structures.⁸⁶⁻⁹⁶ Children who engage in active outdoor play in natural environments demonstrate resilience, self-regulation and develop skills for dealing with stress later in life.^{17,97-114}**

» **Outdoor play that occurs in minimally structured, free and accessible environments facilitates socialization with peers, the community and the environment, reduces feelings of isolation, builds inter-personal skills and facilitates healthy development.^{27,78,87,93,99,115-119}**



Recommendations

- » **Parents:** Encourage your children to engage more fully with their outdoor environments in a variety of weather conditions. When children are supported to take risks, they have more fun and learn how to assess and manage risk in all areas of their lives.^{17,25,120}
- » **Educators and Caregivers:** Regularly embrace the outdoors for learning, socialization and physical activity opportunities, in various weather conditions—including rain and snow. Risky active play is an important part of childhood and should not be eliminated from the school yard or childcare centre.
- » **Health Professionals:** Be influential! Promote every child's connection with nature and the outdoors—identify outdoor play resources and partner with municipalities, parks, nature-related organizations, parent groups and children to support this process.
- » **Injury Prevention Professionals:** Find a balanced approach to health promotion and protection that considers the long-term dangers of a sedentary lifestyle along with the acute potential for injury.
- » **School and Child Care Administrators:** Choose natural elements over pre-fabricated playgrounds and paved areas—and encourage children to play in, and help design, these environments.
- » **Media:** Provide balanced reporting—sensationalizing stories about predators and danger elevates fear; cover success stories related to outdoor and risky active play.
- » **Attorneys General:** Establish reasonable liability limits for municipal governments—this means Joint and Several Liability Reform.
- » **Provincial and Municipal Governments:** Work together to create an environment where Public Entities are protected from frivolous lawsuits over minor injuries related to normal and healthy outdoor risky active play. This protection would no longer restrict Public Entities to using the Canadian Standards Association CAN/CSA Z614 “Children’s Playspaces and Equipment” as a guide for the design of outdoor play spaces and as a requirement for the funding of these spaces. An increased investment in natural play spaces in all neighbourhoods is encouraged.
- » **Schools and Municipalities:** Examine existing policies and by-laws and reconsider those that pose a barrier to active outdoor play.
- » **Federal and Provincial/Territorial Governments:** Collaborate across sectors to find ways to improve children’s access to risky active play in nature and the outdoors.
- » **Society:** Recognize that children are competent and capable. Respect parents’ assessments of their children’s abilities and their decisions to encourage self-directed play in nature and the outdoors. Allow all children to play with and form a lasting relationship with nature on their own terms.

This Position Statement was informed by the best available evidence, interpreted by a group of Canadian experts representing 14 organizations, and reviewed and edited by more than 1,600 stakeholders. Details of the process are published in the *International Journal of Environmental Research and Public Health* [www.mdpi.com/journal/ijerph].

Funding for the development of the Position Statement was provided by The Lawson Foundation, the Healthy Active Living and Obesity Research Group at the Children’s Hospital of Eastern Ontario Research Institute, KidActive and ParticipACTION.



World's First Integrated 24-Hour Movement Behaviour Guidelines for Children and Youth

Physical inactivity and obesity represent pervasive and, arguably, the greatest health challenges to our children and youth today. To maximize success, these serious public health threats need to be addressed with a range of strategies. Historically, the health benefits of MVPA to health have dominated discussions. Emerging evidence indicates that a broader, more inclusive and integrated approach is needed to better understand and address these challenges.

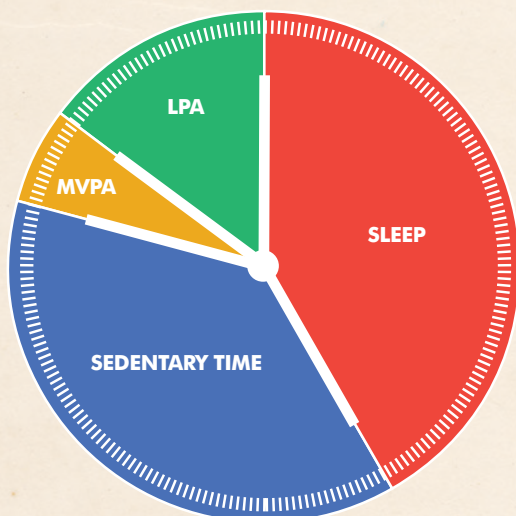
Existing guidelines for children and youth around the world focus on MVPA—and, more recently, sedentary behaviour—despite an accumulating body of evidence that light-intensity physical activity (LPA) such as walking can provide important health benefits. Furthermore, there is accumulating support for the importance of adequate sleep and that these behaviours moderate the health impact of each other. For example, some of the health benefits of MVPA can be lost if children have poor sleep habits and/or engage in excessive sedentary behaviour. Ignoring these other components of the movement continuum (LPA, sleep, sedentary time), which make up approximately 95% of the day, and focusing efforts exclusively on MVPA, which accounts for approximately 5% of the day, limits the potential to optimize the health benefits of movement behaviours.

Is There a Need for 24-Hour Movement Behaviour Guidelines?

Within a 24-hour period, movement occurs on a continuum from sleep (no/low movement) to vigorous-intensity physical activity (high movement). However, current guidelines are missing information on at least 2 important movement behaviours: LPA and sleep. Ignoring important components of the 24-hour day is unfortunate as new research shows that all movement behaviours and their interaction have important health implications. Therefore, it is time that we adopt a paradigm that integrates, not segregates, movement behaviours.

In order to address this limitation, experts in Canada are currently developing the world's first *Integrated 24-Hour Movement Behaviour Guidelines for Children and Youth (Aged 5-17 Years)*. These guidelines will include all intensities of physical activity (light, moderate, vigorous), sedentary behaviour and sleep. They also follow established protocols for clinical practice guideline development, and involve a large team of researchers, knowledge users and international collaborators. These new guidelines will help children, youth, parents, educators, public health/healthcare professionals and governments easily understand the importance of all movement behaviours in a 24-hour period. This evidence-informed approach will help to advance an integrated healthy active living agenda that has the potential to significantly contribute to the improvement of overall health and well-being among children and youth in Canada and worldwide. Stay tuned!

FIGURE 2. The general distribution of movement behaviours over 24 hours in children and youth (source: adapted from Chaput et al. 2014²²³).



INDICATORS

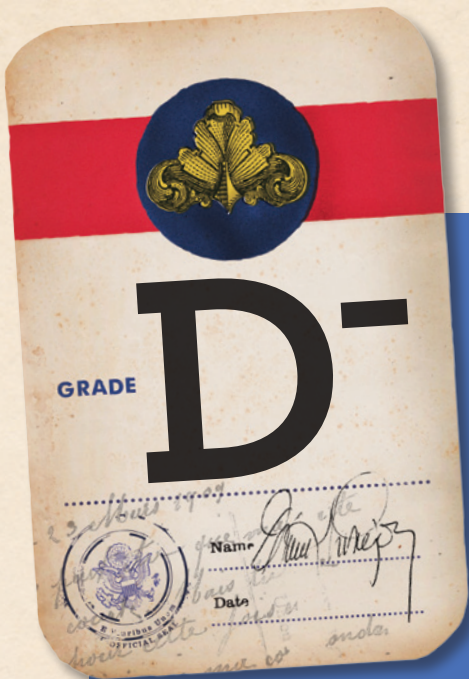


BEHAVIOURS THAT CONTRIBUTE TO OVERALL PHYSICAL ACTIVITY



9% of 5- to 17-year-olds in Canada (14% of 5- to 11-year-olds and 5% of 12- to 17-year-olds) meet the daily recommendation of at least 60 minutes of MVPA (2012-13 CHMS, Statistics Canada). This percentage has remained stable since the 2007-09 CHMS when 7% of 5- to 17-year-olds met the daily recommendation.¹²²

9%



Overall Physical Activity

This year's grade remains a D- for the third year in a row because most children and youth in Canada are not meeting the Canadian Physical Activity Guidelines. The grade reflects the balance between 1 age group that is doing well (3- to 4-year-olds) and 2 age groups that are doing poorly (5- to 11-year-olds and 12- to 17-year-olds).

YEAR	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
GRADE	D	D	F	F	F	F	F	F	D-	D-	D-
BENCHMARK	A 81-100%		B 61-80%		C 41-60%		D 21-40%		F 0-20%		

» Percentage of children and youth who meet the Canadian Physical Activity Guidelines⁵ (3- to 4-year-olds: at least 180 minutes of physical activity at any intensity every day; 5- to 17-year-olds: at least 60 minutes of moderate- to vigorous-intensity physical activity every day).



Key Findings

- » **70% of 3- to 4-year-olds in Canada** meet the daily recommendation of at least 180 minutes of physical activity at any intensity (2012-13 Canadian Health Measures Survey [CHMS], Statistics Canada).
- » **9% of 5- to 17-year-olds in Canada** (14% of 5- to 11-year-olds and 5% of 12- to 17-year-olds) meet the daily recommendation of at least 60 minutes of MVPA (2012-13 CHMS, Statistics Canada). This percentage has remained stable since the 2007-09 CHMS when 7% of 5- to 17-year-olds met the daily recommendation.¹²²
- » **5% of 5- to 19-year-olds in Canada** take at least 12,000 steps every day of the week, which approximates the Canadian Physical Activity Guidelines for Children and Youth (2011-14 Canadian Physical Activity Levels Among Youth Survey [CANPLAY], Canadian Fitness and Lifestyle Research Institute [CFLRI]).¹²³
- » **According to primary caregivers**, 72% of 6- to 11-year-olds in Canada from on-reserve and northern First Nations communities accumulate a daily average of at least 60 minutes of MVPA (2008-10 First Nations Regional Health Survey).¹²⁴

Recommendations

- » **Support children and youth** in adding bouts of physical activity throughout their day—before school, during school, after school, in the evenings and on the weekend. The majority of Canadian children and youth still need to make important changes in their routine physical activity patterns.
- » **Remove barriers for low-income families** by making access to programs simple and dignified (e.g., no proof of income, decrease complicated paperwork).
- » **While the geographic and cultural diversity** of Canada must be recognized, stakeholders at all levels need to work together to make it easier for children and youth to make the active choice more often. This can be done through targeted information and public education to raise awareness of effective strategies that address barriers and increase physical activity; support for the development and enhancement of effective policies and programs; ensuring adequate investment for implementation as well as strategic and sustained investments in community design; and implementing ongoing monitoring and use of evidence to ensure that our efforts are having the desired effect, which is to increase physical activity in children and youth.

Research Gaps

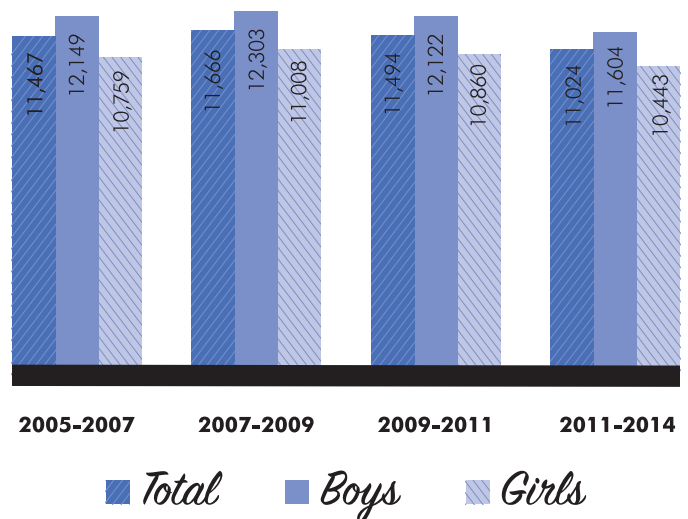
- » **There is a need for more research** on the relationship between physical activity and health indicators in the early years.
- » **Efforts should be made** to harmonize physical activity recommendations for preschool and school-aged children to better understand changes in physical activity during transition years.
- » **Greater focus** continues to be needed in addressing disparities in physical activity participation related to gender, increasing age, ability and socioeconomic status.

Literature Synthesis

Changes in Physical Activity Over Time

A recent review of physical activity in children and youth concluded, based on limited evidence, that there has not been much change in the overall physical activity levels of children and youth in the last 20 years.¹²⁵ The CANPLAY study in Canada, which began in 2005 and has collected 8 cycles of pedometer data on children and youth, is filling in this gap in knowledge. The latest data reveal that 5- to 19-year-olds in Canada take an average of 11,000 steps per day.¹²⁶

FIGURE 3. Trends in average steps over time, overall and by gender (source: adapted from 2005-14 CANPLAY, CFLRI¹²⁶).



2014 Global Summit on Physical Activity of Children

From May 19-22, 2014 Active Healthy Kids Canada hosted the Global Summit on the Physical Activity of Children, in Toronto. The Summit provided a forum to share evidence and best practices from around the world in order to foster coordinated action and initiatives to address the global childhood physical inactivity crisis. One of the unique elements of the Global Summit was the unveiling of the world's first global (report card) matrix. In the year preceding the Global Summit, 15 countries came together to prepare national report cards on physical activity for children and youth using the best available evidence and following harmonized procedures. This exercise allowed for the creation of a global matrix of 9 common indicators, the identification of country-specific strengths and concerns, and the illumination of international differences and disparities. Figure 4 captures some of the highlights from the Global Summit. For more information, visit www.participationreportcard.com.

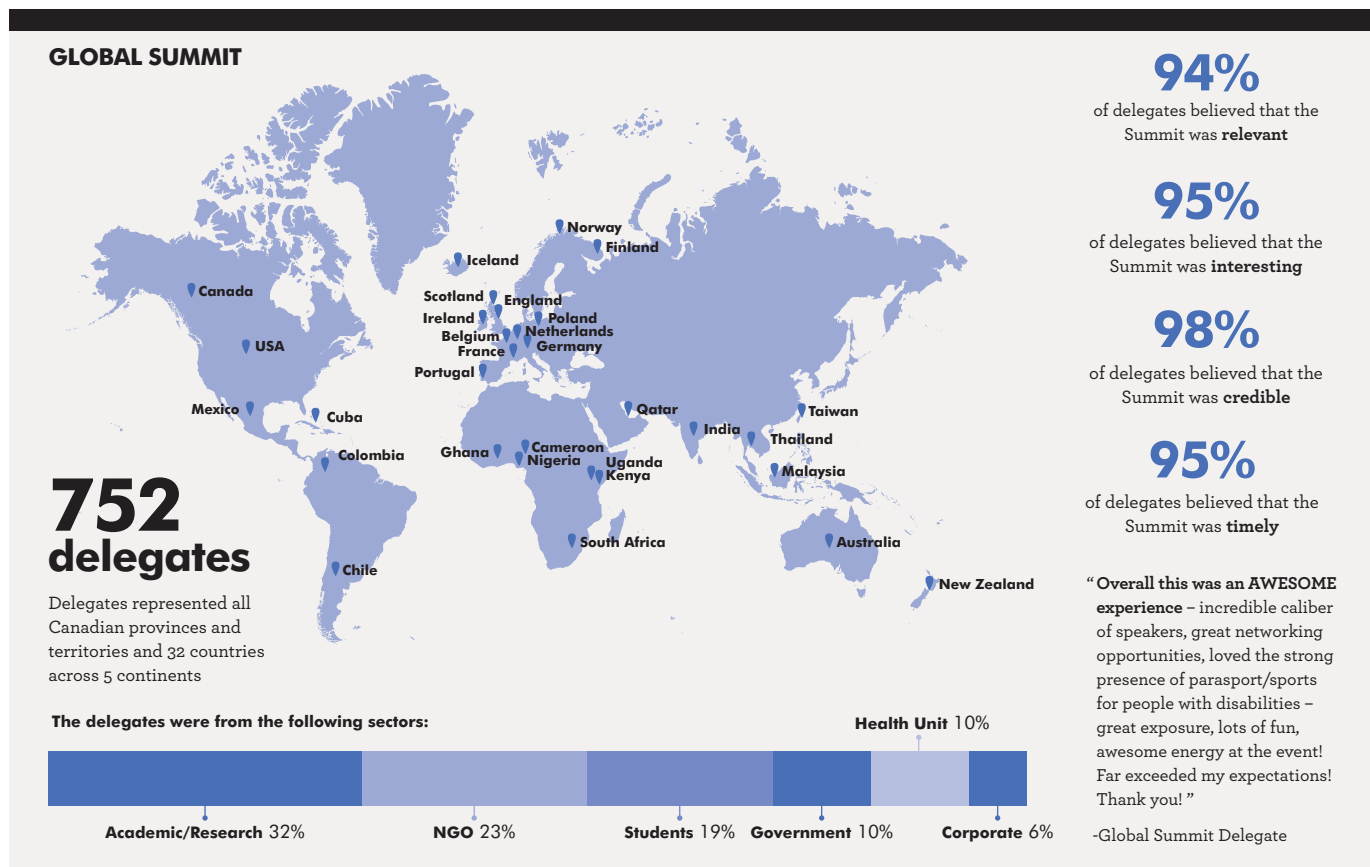
FIGURE 4. Highlights from the Global Summit on the Physical Activity of Children (source: Active Healthy Kids Canada¹²⁷).

Physical Activity and Concussions

Physical activity is important for the health of children and youth (see *Why is Physical Activity Important?*), but injuries such as concussions can occur during various forms of physical activity. A concussion is a form of traumatic brain injury caused by a blow, contact, or jolt to the head; it can also occur by falling or by an impact to the body that moves the brain within the skull.¹²⁸ Concussion symptoms vary between individuals, but common physical symptoms include headache, dizziness, nausea, impaired vision and increased sensitivity to light or noise.¹²⁸

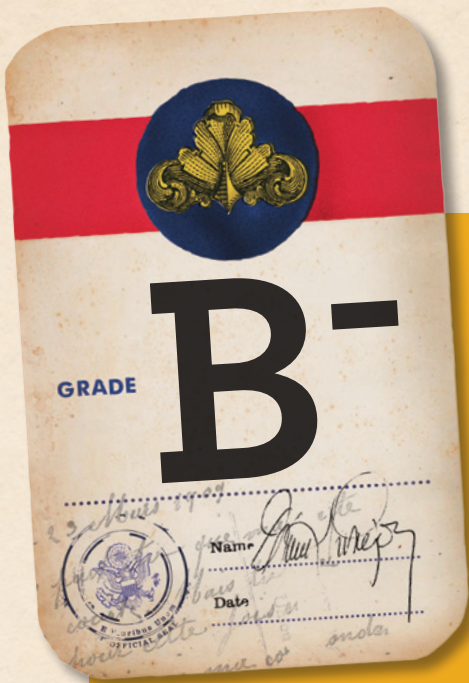
Approximately 29,000 concussions and other brain injuries are reported annually in 12- to 19-year-olds in Canada.¹²⁹ Data from 8 emergency departments across Canada reveal that 1 in 70 visits is for a concussion.¹³⁰ The majority of concussions occur in sports where contact is permitted or where collisions frequently occur (e.g., hockey, football, rugby, soccer, basketball).¹³¹

Given the seriousness of concussions and growing public concern, the release of Guidelines for Diagnosing and Managing Pediatric Concussion by the Ontario Neurotrauma Foundation in 2014 is timely.¹³⁰ These evidence-based guidelines may help inform the decisions of those (e.g., healthcare professionals, parents, caregivers) who suspect that a child or youth has suffered a concussion. For more information on the guidelines, visit onf.org/documents/guidelines-for-pediatric-concussion.



Contributing Factors and Disparities

New data from CANPLAY reveal that a number of disparities have generally persisted since the survey began in 2005: boys take more average daily steps than girls, daily steps decrease with increasing age, and children and youth who participate in organized physical activity and sport take more daily steps than those who do not participate.¹²⁶ Additionally, children and youth from the highest income households tend to take more daily steps on average than those from lower income households.¹²⁶ Emerging data also show disparities in relation to immigration and ethnicity. For example, 15% of Canadian-born youth versus 11% of their peers who were born outside of Canada report at least 60 minutes of daily MVPA.¹³² Only 8% and 9% of youth self-identifying as from East/South East Asia and Latin America, respectively, report at least 60 minutes of daily MVPA.¹³² Lower levels of physical activity in South Asian children who live in Canada have also been reported elsewhere.¹³³



Organized Sport & Physical Activity Participation

This year's grade enters the B range for the first time in the history of the Report Card. The improved grade is due to lessening disparities and new data that reveal encouraging participation rates in children and youth with disabilities.

YEAR	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
GRADE	C+	C-	C	C	C	C	C	C	C	C+	B-
BENCHMARK	A 81-100%		B 61-80%		C 41-60%		D 21-40%		F 0-20%		

» Percentage of children and youth who participate in organized sport and/or physical activity programs.



Key Findings

- » **According to parents**, 75% of 5- to 19-year-olds in Canada participate in organized physical activities and sports (2011-14 CANPLAY, CFLRI).¹³⁴
- » **84% of 3- to 17-year-olds in Canada** participate in sports and 60% of 3- to 17-year-olds participate in organized sports (2014 Canadian Youth Sports Report, Solutions Research Group).¹³⁵
- » **5- to 19-year-olds in Canada** who participate in organized physical activities or sports take approximately 1,700 more daily steps on average than children who do not participate in these types of activities (2011-14 CANPLAY, CFLRI).¹³⁴
- » **According to parents**, 49% of 5- to 19-year-olds in Canada participated in organized physical activity and sport during the afterschool period (2011-14 CANPLAY, CFLRI).
- » **75% of families** with a disabled child report that their child participates in organized sports (2014 CIBC – KidSport™ Report, CIBC and KidSport™).¹³⁶
- » **Just under 30%** of 3- to 21-year-olds in Canada with severe developmental disabilities (e.g., moderate to severe intellectual disabilities, autism spectrum disorders, dual diagnosis, physical disabilities, genetic syndromes) play team sports.¹³⁷

Recommendations

- » **Educate parents**, coaches, officials and participants on the principles of fair play according to the True Sport Principles (<http://truesportpur.ca/true-sport-principles>) and Canadian Sport 4 Life (www.canadiansportforlife.ca).
- » **Encourage program providers** to develop strategies to counter the dropout rate in organized sport and physical activities among youth.
- » **Encourage program providers** to make the development of physical literacy a priority within their program.

Research Gaps

- » **More robust surveillance** of the sport participation of Canadian children and youth is needed.
- » **A better understanding** is needed about the contribution that sport participation makes to MVPA (e.g., what contribution to MVPA should be expected from sport participation?).
- » **There is a need for research** that examines the influence of active play and unorganized activities at younger ages on the development of skills that are useful for sport participation at older ages.

Literature Synthesis

The health benefits of organized sport participation in children and youth have been highlighted in past Report Cards,¹³⁸ and new research continues to reinforce the importance of organized forms of physical activity. A study involving 6-year-olds found that participation in organized sport was significantly associated with reduced body fat, suggesting that organized sport may offer health benefits for participants even at this young age.¹³⁹ In 12- to 17-year-olds, organized sport participation is linked with a greater likelihood of meeting physical activity and screen time guidelines.¹⁴⁰ Although a recent review identified sport as a risk factor for increased alcohol consumption from adolescence into early adulthood, organized sport participation is associated with lower illicit drug use.¹⁴¹ There is evidence that the benefits of organized sport continue across the lifespan: a recent study showed high school varsity sport participation to be the strongest predictor of high physical activity levels and good health after 70 years of age.¹⁴²

Why Do Children and Youth Drop Out of Sport?

Canadian researchers recently reviewed 43 international studies representing nearly 470,000 5- to 19-year-olds and found that structural constraints (e.g., time, injuries, cost, inadequate facilities) are not the leading reasons why children and youth drop out of sport.¹⁴³ Rather, dropout is largely due to a lack of enjoyment, low perceived competence and an increase in family and intrapersonal pressure (e.g., stress).¹⁴³ These findings suggest that organized sport may be too focused on winning to the detriment of having fun, which is in line with reports that 73% of Canadian parents agree that “sports have become too focused on winning”.¹³⁶

New Citizens and Sport Participation

The Institute for Canadian Citizenship released a report in 2014, *Playing Together: New Citizens, Sports & Belonging*, which explored sport participation among new citizens to Canada.¹⁴⁴ 44% of new citizens who are parents report that their children play sports.¹⁴⁴ Parents who registered their child in sports and/or volunteered for their child's sports team reported that it helped them learn about Canadian culture and they felt more connected to their community.¹⁴⁴ To read the full report, visit www.icc-icc.ca/en/insights/sports.php.

RBC SPORTS DAY IN CANADA

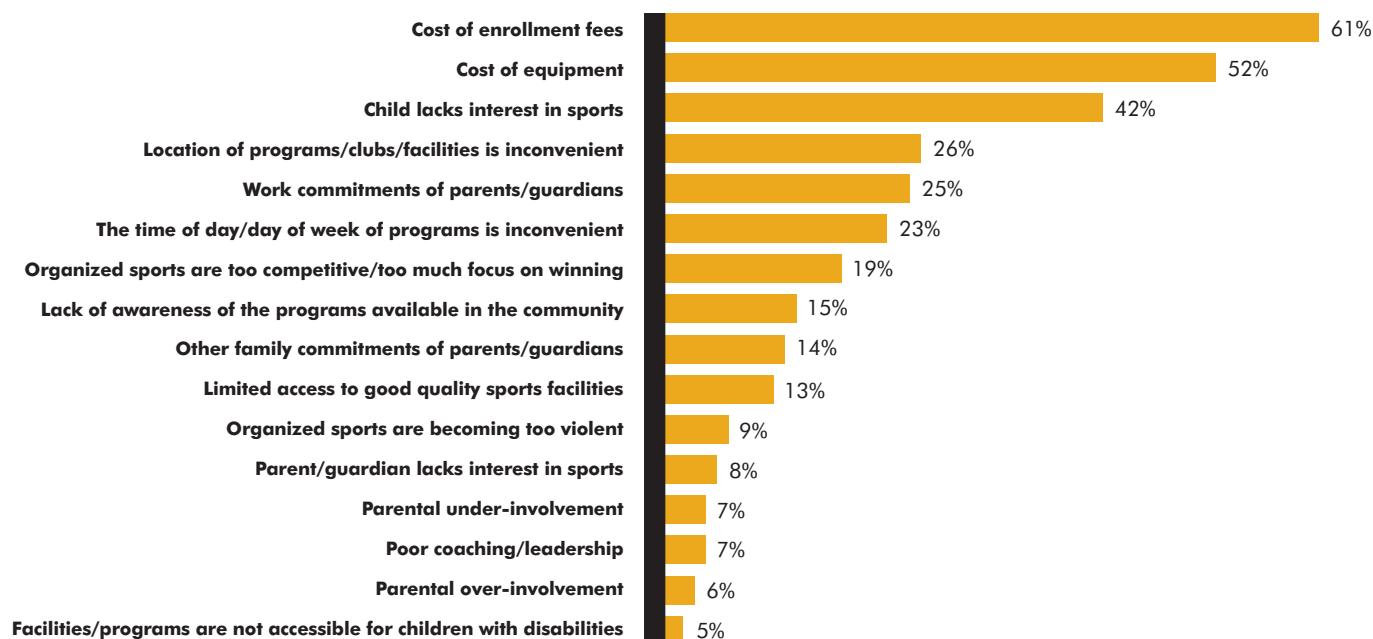
The 5th annual RBC Sports Day in Canada took place on November 29th, 2014.¹⁴⁵ Over 800,000 Canadians participated in more than 200 registered sporting events across the country.¹⁴⁵ Results from a survey of community organizations (53% education, 29% recreation, 37% sport) that hosted a Sports Day event in 2012 reveal a number of benefits that outlasted the event itself: an increase in awareness and interest in sports programs offered by their organization (43%); an increase in awareness and interest in their organization (38%); and an increase in participation or registration in the program (38%).¹⁴⁶ The benefits suggest that events like RBC Sports Day in Canada may provide an additional opportunity for community organizations to promote physical activity to children and youth.

Contributing Factors and Disparities

Based on data collected between 2011 and 2014, there was no significant difference in organized sport and physical activity participation rates by gender among 5- to 19-year-olds in Canada, but participation decreased with increasing age.¹³⁴ During this same time period, participation rates were generally higher with increasing household income and parental education levels.¹³⁴

The cost of enrollment is the largest barrier to sport participation: 90% of parents agree that organized sports are too expensive.¹³⁶ Canadian families spend an average of \$953 annually for one child to play in organized sport.¹³⁶ Families in Alberta spend the most in Canada (\$1,428 annually per child) and families in Quebec spend the least (\$886 annually per child).¹³⁶

FIGURE 5. Barriers that prevent 3- to 17-year-olds in Canada from participating in organized sports (source: adapted from 2014 CIBC – KidSport™ Report¹³⁶).





Active Play

This year's grade remains an incomplete. Although children and youth spend several hours per week participating in unorganized physical activity, this equates to less than an hour per day. The target of several hours of active play per day is relatively arbitrary, and further research is required to identify an evidence-based benchmark before this indicator can be graded.

YEAR	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
GRADE	-	-	-	INC	INC	F	F	F	INC	INC	INC
BENCHMARK	A 81-100%		B 61-80%		C 41-60%		D 21-40%		F 0-20%		

- » Percentage of children and youth who engage in unstructured/unorganized active play for several hours a day.
- » Percentage of children and youth who report being outdoors for several hours a day.



Key Findings

- » **According to parents**, 76% of 5- to 19-year-olds in Canada participate in unorganized physical activities or sports during the afterschool period, that is, between the end of the school day and supertime (2011-14 CANPLAY, CFLRI).
- » **According to parents**, 68% of 5- to 19-year-olds in Canada participate in outdoor play during the afterschool period (2011-14 CANPLAY, CFLRI). In another survey, 65% of Canadian parents report that their 5- to 17-year-olds play outdoors during the afterschool period (2010-11 Physical Activity Monitor [PAM], CFLRI).¹⁴⁷
- » **Canadian children and youth** who participate in unorganized physical activities or sports during the afterschool period take approximately 1,300 more daily steps than those who do not participate (2011-14 CANPLAY, CFLRI). Additionally, those who play outdoors during the afterschool period take 2,100 more daily steps on average than those who do not (2011-14 CANPLAY, CFLRI).
- » **7- to 17-year-olds in Canada** report spending an average of 92 minutes per day outdoors (122 minutes in 7- to 11-year-olds and 72 minutes in 12- to 17-year-olds) (2012-13 CHMS, Statistics Canada).
- » **Canadian children** burn more than 8 times as many calories meeting the benchmark for active play (several hours a day of unstructured/unorganized active play which was operationalized as 3.8 hours in this particular study) than they do meeting the benchmarks for organized sports and school-based physical education.¹⁴⁸

Recommendations

- » **Increase parents' and caregivers' awareness** and understanding of the benefits versus the risks of outdoor play.
- » **Parents should ensure a balance** between scheduled activities and free time during which children can engage in active play.
- » **Challenge municipal by-laws** and school policies that restrict opportunities for active outdoor play.

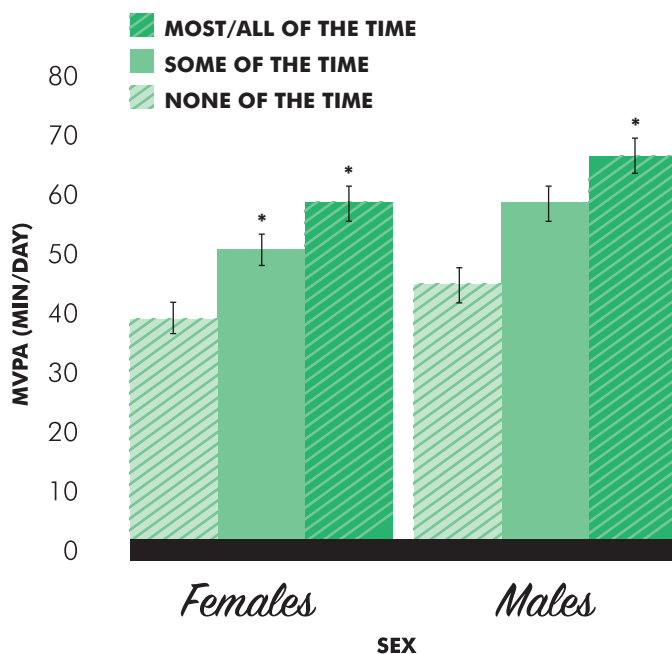
Research Gaps

- » **More research is needed** to establish a definition of active play.
- » **Further research is required** to identify an evidence-based benchmark for this indicator. For example, should LPA and outdoor time be part of the benchmark? How many hours of active play per day are needed for improved health?
- » **Interventions promoting active play** remain to be developed and evaluated.

Literature Synthesis

Outdoor time/play is associated with a number of benefits such as improved social skills,¹⁷ motor skill development (e.g., climbing and jumping),¹⁹ lower levels of overweight and obesity,¹⁴⁹ and increased overall physical activity.^{12,150} One recent study also found that as the time 9- to 17-year-olds spent outdoors after school increased, daily MVPA increased and daily sedentary time decreased.¹² Those who spent most or all of their afterschool time outdoors got approximately 20 more minutes of MVPA per day and were about 3 times more likely to achieve the Canadian Physical Activity Guidelines, which recommend at least 60 minutes of daily MVPA.⁵ This additional MVPA translates to an approximate 40% reduction in the risk of high normal blood pressure and a 15% reduction in the risk of being overweight or obese.¹⁵¹

FIGURE 6. Minutes of MVPA per day in 9- to 17-year-olds in Alberta, by gender and amount of time spent outdoors after school (source: adapted from Schaefer et al. 2014¹². * Significantly different from “none of the time” (p < .05).



Contributing Factors and Disparities

In a recent review of qualitative research of independent active free play, a number of factors were found to have an influence on participation rates.¹⁵² For example, older children and those perceived by their parents to be more streetwise were more likely to be permitted to engage in independent active free play.¹⁵² Boys were generally allowed to play outdoors more frequently, later into the day and further from home than girls.¹⁵² The most widely reported finding was that parental safety concerns (e.g., worry about strangers, bullies and traffic) are the primary barrier to independent active free play.¹⁵²

Outdoor MVPA decreases with age in children and youth,¹⁵³ and overall declines in children's outdoor play have been documented worldwide.^{154,155} Current research suggests that a supportive family environment is a key determinant of regular outdoor play.¹⁵⁰ Furthermore, children who are granted at least some independent mobility (freedom to travel/play in public spaces without adult supervision⁸⁵) have more favorable physical activity profiles.^{84,85} Dog walking may provide an accessible and safe option for improving levels of independent mobility¹⁵⁶ and, consequently, outdoor play.⁸⁵



Active Transportation

In the absence of data on active transportation to/from destinations other than school, this year's grade remains a D due to the low percentage of children and youth who use active transportation to get to/from school. The decline in active transportation to/from school over the past decade also informs the grade.

YEAR	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
GRADE	-	D	-	D	D	D	D	D+	D	D	D
BENCHMARK	A 81-100%		B 61-80%		C 41-60%		D 21-40%		F 0-20%		

» Percentage of children and youth who use active transportation to get to and from places (e.g., school, park, mall, friend's house).



Key Findings

- » **According to parents**, 24% of 5- to 17-year-olds in Canada use only active modes of transportation to/from school, 62% use only inactive modes, and 13% use both active and inactive modes (2010-11 PAM, CFLRI).¹⁵⁷
- » **Between 2000 and 2010**, the percentage of Canadian children and youth using only inactive modes of transportation to/from school increased from 51% to 62%. During the same period, the proportion of children and youth using only active transportation decreased from 28% to 24% (2010 PAM, CFLRI).¹⁵⁸
- » **51% of 12- to 19-year-olds in Canada** report walking between 1 and 5 hours per week to/from school and work, and while doing errands; 27% report less than 1 hour; and 22% report more than 5 hours (2007-09 CHMS, Statistics Canada).¹⁵⁹
- » **10% of 12- to 19-year-olds** report cycling at least 1 hour per week to/from school and work, and while doing errands. 9% report less than 1 hour, and 81% report not using cycling for transportation (2007-09 CHMS, Statistics Canada).¹⁵⁹
- » **In a small sample of 7- to 12-year-olds** from across Canada, the percentage who walk or bicycle at least 5 days per week is low and varies by destination: to school in the morning (28%), to home from school in the afternoon (28%), to the house of a friend/neighbour/relative (14%), to sports venues (5%), to parks and playgrounds (13%), to convenience and variety stores (4%), to fast food restaurants and coffee shops (7%), to other shops and destinations (4%).¹⁵

Recommendations

- » **School travel planning interventions** should be implemented at a larger scale.
- » **School board transport policies** need to recognize and consider ways to support active forms of travel such as walking and cycling, rather than serving as purely a “bussing” policy.
- » **Policy-makers should pay careful attention** to areas with known safety risks in which a greater percentage of children engage in active transportation.^{53,160} Such policies may include lower speed limits, greater provision of sidewalks and bike lanes, traffic calming and crossing guards near schools.^{161,162}
- » **Novel initiatives** to encourage active transportation among children living in suburban and rural areas are needed. While school may be located too far away to enable active transportation for the entire trip, walking may still be promoted for part of the journey.¹⁶³

Research Gaps

- » **Further research is needed** on the effectiveness and sustainability of interventions to promote active transportation, such as school travel plans and walking school buses.
- » **More research is needed** on how children and youth travel to destinations other than school (e.g., parks, shops, friends’ and relatives’ houses, sport fields). These destinations may provide additional opportunities for active transportation. To date, only the Canadian Health Measures Survey provides national data on trips to some of these destinations.¹⁵⁹
- » **The factors associated** with children’s independent mobility require more investigation. This research is important because independent mobility may foster active transportation, outdoor play and overall physical activity.^{84,164}

Literature Synthesis

Active travelers to school are more active throughout the entire day than their peers who are driven to/from school.^{159,165-170} They accumulate as much as 45 additional minutes of MVPA per day.¹⁶⁵ Children and youth who cycle to/from school also have greater cardiovascular fitness than those who are driven to/from school.¹⁶⁵ Youth who cycle for transportation purposes at least 1 hour per week have been shown to get more MVPA, have higher cardiovascular fitness, have a lower body mass index and waist circumference, and have a more favourable cholesterol profile than those who report no cycling.¹⁵⁹ Active transportation may also have positive effects on mental health.¹⁷¹

School Travel Plans

A recently published evaluation of school travel plans (strategies to promote active school travel based on the local school context) in 103 schools found that 17% of parents reported driving their children to/from school less often as a result of the school travel planning intervention.¹⁷⁰ Of those parents who reported driving less, the large majority (83%) had switched to active transportation, thus highlighting the potential of school travel planning interventions to increase active transportation in parents and their children.¹⁷⁰

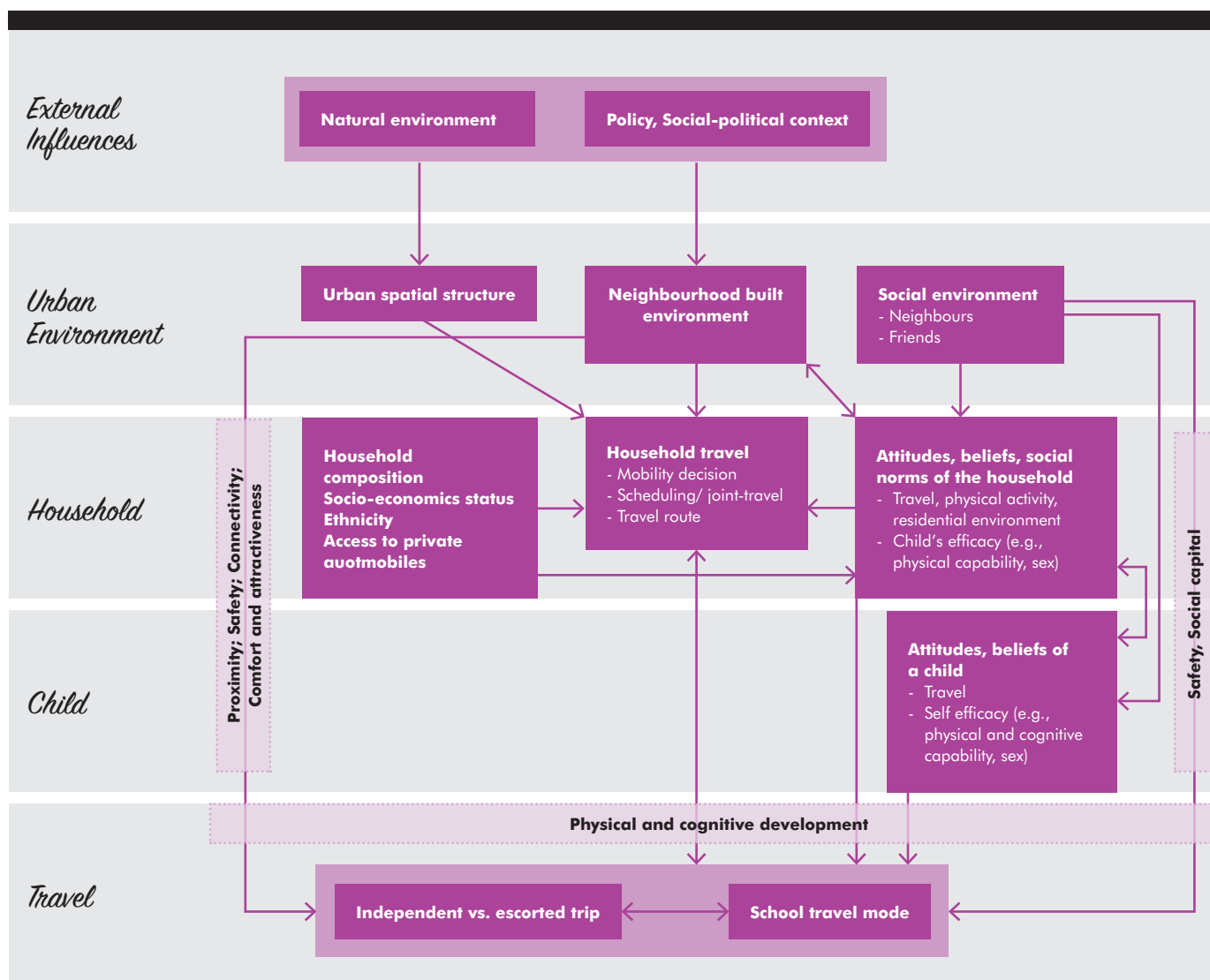
Contributing Factors and Disparities

As illustrated in Figure 7, a wide range of factors influence whether children and youth engage in active or motorized travel. The issue of school travel is remarkably more complex than typically assumed. Canadian studies have concluded that active transportation is more likely among:

- » Children living closer to the school that they attend.¹⁷²⁻¹⁷⁴
- » Children in primary school compared to youth in secondary school.¹⁷⁵

- » Children with greater freedom to travel in their neighbourhood without adult supervision (e.g., independent mobility).^{84,173}
- » Boys compared to girls.^{176,177} This is particularly the case for cycling.¹⁵⁹
- » Children living in an urban area, compared to a suburban or rural area.^{167,169,172,176,178}
- » Children living in western provinces compared to eastern provinces.^{176,178}
- » Children living in more deprived areas.^{160,178,179}

FIGURE 7. Factors that influence whether children and youth actively commute to/from destinations (source: adapted from Mitra 2013¹⁸⁰).





Physical Literacy

The grade for this new indicator in the Report Card is an incomplete due to the limited amount of data on physical literacy that currently exists for children and youth in Canada.

YEAR	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
GRADE	-	-	-	-	-	-	-	-	-	-	INC
BENCHMARK	A 81-100%		B 61-80%		C 41-60%		D 21-40%		F 0-20%		

» Percentage of children and youth who meet the recommended levels of physical competence, knowledge, motivation and daily behaviours needed for a physically active lifestyle.

Key Findings

- » **39% of 8- to 12-year-olds** meet or exceed the minimum level recommended for physical literacy (2011-15 Canadian Assessment of Physical Literacy [CAPL], Healthy Active Living and Obesity Research Group [HALO]).
- » **26% of 8- to 12-year-olds** meet or exceed the minimum level recommended for the physical competence domain of physical literacy (2011-15 CAPL, HALO).
- » **41% of 8- to 12-year-olds** meet or exceed the minimum level recommended for the daily behaviour domain of physical literacy (2011-15 CAPL, HALO).
- » **35% of 8- to 12-year-olds** meet or exceed the minimum level recommended for the motivation and confidence domain of physical literacy (2011-15 CAPL, HALO).
- » **59% of 8- to 12-year-olds** meet or exceed the minimum level recommended for the knowledge and understanding domain of physical literacy (2011-15 CAPL, HALO).
- » **Note: if readers have access to physical literacy data that could inform this grade, please forward to ParticipACTION (info@participaction.com).**

Recommendations

- » **Widely communicate** the common definition of physical literacy, in order to enhance the overall understanding of physical literacy and each of the elements.
- » **Based on the definition**, create key messages written in plain language that describe physical literacy in the context of each sector and in a way that makes it understandable to leaders and the general public.
- » **Identify and share** initiatives and strategies that develop all elements of physical literacy, not just fundamental movement skills.

Research Gaps

- » **A common definition**, written in plain language, is needed to inform the development of programs, resources and measurement of physical literacy, by different sectors.
- » **Tools and subsequent data** are needed on physical literacy in children under 8 years of age and above 12 years of age.

Literature Synthesis

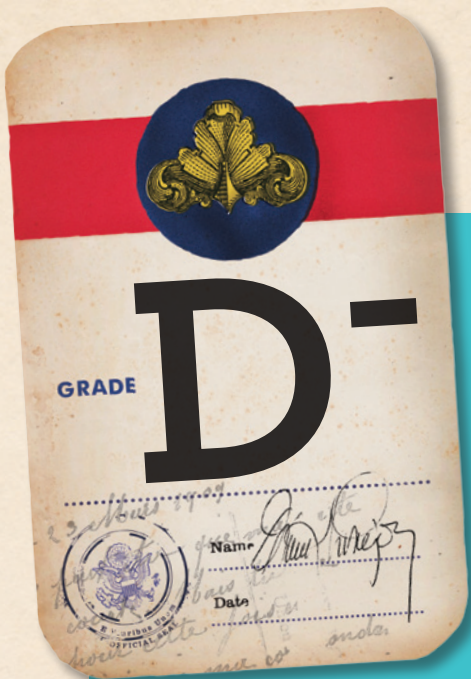
Physical literacy is a relatively new concept describing an individual's capacity to be physically active. The definition being proposed by harmonization efforts in Canada and following the International Physical Literacy Association is as follows: "Physical literacy is the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life."¹⁸¹

Physical literacy has been gaining traction among physical activity stakeholders, but is not always well understood. The concept extends beyond an individual's physical abilities and includes one's motivation and confidence, and knowledge and understanding of physical activity.^{182,183}

Over the past few years, several physical activity stakeholders in Canada have recognized the importance of physical literacy. A few groups have developed tools to monitor and assess the physical literacy of children. Here are examples of the more widely used physical literacy assessments in Canada:

- » **Passport for Life**¹⁸⁴ has been developed by Physical Health and Education Canada and looks at the 4 domains of physical literacy through: active participation (self-reported physical activity), living skills (confidence and competence), fitness skills (cardiovascular endurance, core strength, and dynamic balance) and movement skills (locomotor skills, upper limb movement, lower limb movement and balance).
- » **Physical Literacy Assessment for Youth (PLAY)**¹⁸⁵ has been developed by Canadian Sport for Life and focuses on the ability and confidence of a child when they perform basic movement skills (e.g., running, throwing, balance, kicking).
- » **The Canadian Assessment of Physical Literacy (CAPL)**¹⁸⁶ has been developed by HALO and is a valid and reliable physical literacy assessment for 8- to 12-year-olds.¹⁸⁷ The CAPL examines the 4 domains of physical literacy through: daily behaviour (average daily step count, self-reported physical activity and sedentary time), physical competence (cardiovascular endurance, grip strength, flexibility, core strength, motor skills, body mass index percentile, and waist circumference), knowledge and understanding, and motivation and confidence.

These examples demonstrate the increasing attention that physical literacy is receiving in Canada. Given the current low levels of physical activity¹³⁸ and fitness¹⁸⁸ among children, perhaps a different approach is required to help them become more active – an approach that includes physical literacy. In support of this, preliminary evidence suggests one aspect of physical literacy, high motor proficiency, in 6-year-olds is positively related to leisure-time physical activity at age 26.¹⁸⁹



Sedentary Behaviours

This year's grade is a D- because most children and youth in Canada are not meeting the Canadian Sedentary Behaviour Guidelines. The presence of age disparities also contributes to the grade.

YEAR	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
GRADE	C-	D-	D-	D	F	F	F/INC*	F/INC*	F	F	D-
BENCHMARK	A 81-100%		B 61-80%		C 41-60%		D 21-40%		F 0-20%		

» Percentage of children and youth who meet the Canadian Sedentary Behaviour Guidelines⁵ (3- to 4-year-olds: less than 1 hour of screen time per day; 5- to 17-year-olds: no more than 2 hours of screen time per day).
Note: the Guidelines currently provide a time limit recommendation for screen-related pursuits, but not for non-screen-related pursuits.

* In 2011 and 2012 there were 2 separate indicators: Screen-Based Sedentary Behaviours and Non-Screen Sedentary Behaviours. Following 2012, these indicators were collapsed into a single indicator.



Key Findings

- » **15% of 3- to 4-year-olds in Canada** meet the Canadian Sedentary Behaviour Guidelines for the Early Years, which recommend that daily screen time (i.e., use of computers, television, etc.) be limited to less than 1 hour (2012-13 CHMS, Statistics Canada).
- » **During waking hours**, 3- to 4-year-olds in Canada spend an average of 7.5 hours per day being sedentary (2012-13 CHMS, Statistics Canada).
- » **24% of 5- to 17-year-olds in Canada** (24% of 5- to 11-year-olds and 24% of 12- to 17-year-olds) meet the Canadian Sedentary Behaviour Guidelines for Children and Youth, which recommend daily screen time of no more than 2 hours (2012-13 CHMS, Statistics Canada).
- » **During waking hours**, 5- to 17-year-olds in Canada spend an average of 8.5 hours per day being sedentary (7.6 hours in 5- to 11-year-olds and 9.3 hours in 12- to 17-year-olds) (2012-13 CHMS, Statistics Canada).
- » **According to parents**, 54% of 5- to 19-year-olds in Canada sit and watch less than 1 hour of television during the afterschool period (2011-12 CANPLAY, CFLRI).¹⁹⁰ 33% watch between 1 and less than 2 hours of television, and 13% watch 2 or more hours of television during the afterschool period.¹⁹⁰
- » **According to parents**, 50% of 5- to 19-year-olds in Canada sit and participate in other sedentary pursuits (e.g., reading, playing computer games) for less than 1 hour during the afterschool period (2011-12 CANPLAY, CFLRI).¹⁹⁰ 35% sit and participate in other sedentary pursuits for between 1 and less than 2 hours while 15% do so for 2 or more hours during the afterschool period.¹⁹⁰

Recommendations

- » **Reducing screen time** and using television-limiting devices are promising methods for reducing overall sedentary time.¹⁹¹ Limiting the number of screens available in the house, particularly in the bedroom, and restricting screen time near bedtime may also be effective.^{192,193}
- » **Provide parents** with the Canadian Sedentary Behaviour Guidelines and other resources as early as possible.¹⁹³
- » **Educators should plan** for opportunities to break up sedentary time throughout the day.

TABLE 1. Top 3 favorite online activities of 6- to 17-year-olds in Canada, by age group (source: The Strategic Counsel, 2013).

6- TO 8-YEAR-OLDS	9- TO 11-YEAR-OLDS	12- TO 14-YEAR-OLDS	15- TO 17-YEAR-OLDS
1. Watching TV 35% 2. Playing video games 34% 3. Watching movies 18%	1. Playing video games 40% 2. Watching TV 25% 3. Listening to music 12%	1. Playing video games 34% 2. Listening to music 21% 3. Watching TV 16%	1. Playing video games or listening to music 25% each 2. Surfing the Internet 14% 3. Texting 13%

Research Gaps

- » **Research needs to better differentiate** the effects of screen-based vs. non-screen sedentary behaviours and their influence on health indicators.
- » **Methodologies to assess** non-screen-time sedentary behaviour are needed.

Literature Synthesis

Sedentary behaviours such as television viewing, seated video game playing and prolonged sitting are associated with increased risks for obesity and cardiometabolic disease in children and youth.¹⁹⁴ In light of this, the Canadian Sedentary Behaviour Guidelines were developed to provide parents and caregivers with evidence-based and age-specific daily limits on screen-time viewing.⁵ Some parents find these guidelines confusing because some sedentary behaviours (e.g., reading, coloring) seem to offer benefits to mental and social development.¹⁹⁵ Indeed, new research reveals a positive link between academic-related sedentary behaviours and reading fluency in grades 1-3 schoolchildren.¹⁹⁶

Although it is important to distinguish types of sedentary behaviours that carry some positive health benefits, research continues to clarify the negative outcomes associated with screen-based sedentary behaviours in children and youth. Negative outcomes linked to television, video game, cellphone and Internet use include disordered sleeping,^{192,193} higher overall levels of sedentary behaviour¹⁹⁷ and measures related to obesity (e.g., higher body fat percentage, waist-to-hip ratio and body mass index).¹⁹⁸⁻²⁰³ Longer periods of sedentary behaviour appear to be of particular concern for obesity-related outcomes. For example, the number of sedentary periods of 5-19 minutes has been linked to higher body mass index in children with low levels of MVPA.¹⁹⁹ Given that frequent interruptions in sedentary time are associated with lowered risk for cardiometabolic risk factors,²⁰⁴ children and youth need to be encouraged to break up their daily sedentary time.

Contributing Factors and Disparities

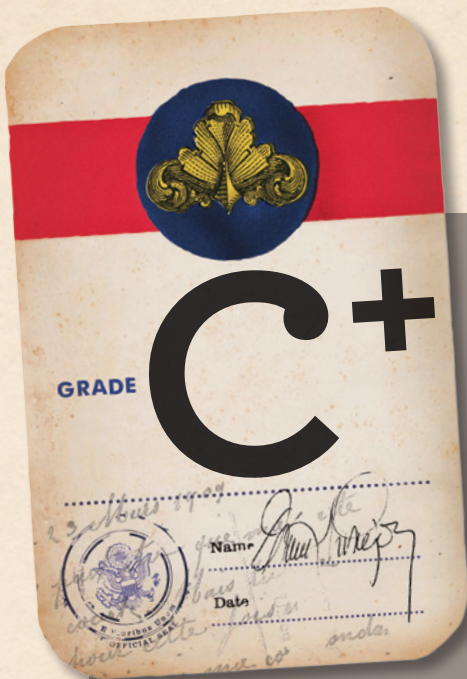
The percentage of 5- to 19-year-olds in Canada who spend at least 2 hours per day sitting while watching television or engaging in other sedentary pursuits during the afterschool period increases with age.¹⁹⁰ A greater percentage of those who do not participate in organized physical activity or sport also spend greater durations of time in these sedentary pursuits during the afterschool period.¹⁹⁰ Parents with a university education and from the highest household incomes (\geq \$100,000 per year) are generally less likely to report that their child engages in these sedentary pursuits for at least 2 hours during the afterschool period compared to parents without a university education and from the lower household incomes respectively.¹⁹⁰

SETTINGS & SOURCES OF INFLUENCE



95%

95% of mothers in Canada with a 5- to 11-year-old child agree that “unstructured activities, like outdoor play with friends, are an effective way for kids to get the physical activity they need each day” (2014 Bring Back Play Campaign Assessment, ParticipACTION).



Family & Peers

The benchmarks for this indicator relate to family physical activity and peer influence. Since there continues to be a lack of gradable data for peer influence, the grade is informed by family physical activity data. This year's C+ grade is a slight improvement over last year due to new data showing that parents understand the importance of physical activity for children and youth.

YEAR	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Family Physical Activity Grade	D/C ^{-*}	D-/D/D [*]	D	D/B [*]	C+	D	D+	D+	C	C	C ⁺
Peer Influence Grade	-	-	-	-	INC	INC	INC	INC	INC		
BENCHMARK	A 81-100%		B 61-80%		C 41-60%		D 21-40%		F 0-20%		

- » Percentage of parents who facilitate physical activity and sport opportunities for their children (e.g., volunteering, coaching, driving, paying for membership fees and equipment).
- » Percentage of parents who meet the Canadian Physical Activity Guidelines for Adults.⁵
- » Percentage of parents who are physically active with their kids.
- » Percentage of children and youth with friends and peers who encourage and support them to be physically active.
- » Percentage of children and youth who encourage and support their friends and peers to be physically active.

* In 2005 there were 2 separate indicators: Family Physical Activity and Ensuring Kids are Active. In 2006 there were 3 separate indicators: Family Physical Activity, Ensuring Kids are Active and Parent Perspectives on Activity. In 2008 there were again 2 separate indicators: Family Perceptions & Roles Regarding Physical Activity and Ensuring Kids are Active.



Key Findings

Family Physical Activity

- » **79% of parents** report contributing financially to their kids' physical activity (e.g., purchasing equipment, paying membership fees) (2010-11 PAM, CFLRI).²⁰⁵
- » **19% of 18- to 39-year-olds** and 13% of 40- to 59-year-olds in Canada meet the Canadian Physical Activity Guidelines for Adults, which recommend at least 150 minutes of weekly MVPA (2007-11 CHMS, Statistics Canada).²⁰⁶
- » **37% of parents** report playing active games with their kids often or very often (2010-11 PAM, CFLRI).²⁰⁵
- » **90% of high school students** (grades 9-12) in Ontario and Alberta report that their parents are very supportive or supportive of them being physically active (2013 COMPASS, University of Waterloo).²⁰⁷
- » **70% of high school students** (grades 9-12) in Ontario and Alberta report that their parents encourage or strongly encourage them to be physically active (2013 COMPASS, University of Waterloo).²⁰⁷
- » **95% of mothers in Canada** with a 5- to 11-year-old child agree that "unstructured activities, like outdoor play with friends, are an effective way for kids to get the physical activity they need each day" (2014 Bring Back Play Campaign Assessment, ParticipACTION).
- » **26% of mothers in Canada** with a 5- to 11-year-old child ranked participation in daily physical activity as the most important priority for their child (2014 Bring Back Play Campaign Assessment, ParticipACTION).
- » **The majority of moms** with a 5- to 11-year-old child are generally confident in their ability to influence their child to participate in physical activity without infringing on the child's time spent doing things with the family (89%), without infringing on the child's time spent doing the things s/he wants to do (88%), and by limiting screen time (85%) (2014 Bring Back Play Campaign Assessment, ParticipACTION).
- » **Grades 5-6 students in Toronto** who were allowed to go out and explore on their own or with friends often or always spent 19.5% more time in daily MVPA compared to their peers who were not allowed to go out and explore on their own or with friends.¹³

Peer Influence

- » **40% of high school students** (grades 9-12) in Ontario and Alberta report that they have 5 or more friends who are physically active. 17% report having no or only 1 friend who is physically active (2013 COMPASS, University of Waterloo).²⁰⁷

Recommendations

- » **Parents are encouraged** to reduce their own and their children's sedentary time, particularly sedentary time in front of screens.
- » **Parents are encouraged** to regularly plan for physical activities for their children and family on evenings, weekends and holidays.
- » **Since physical inactivity is a problem** for Canadians of all ages, interventions could encourage families as a whole to be physically active and reduce sedentary time together.

Research Gaps

- » **Research is needed** on the types of things children and youth find supportive for physical activity from their friends and peers.
- » **The influence of parental** and peer support on physical activity has received relatively less research attention in Canada than in other countries. In particular, prospective research is needed to examine whether changes in parental and peer support explain changes in physical activity over time.
- » **Peer-based physical activity interventions** need to be developed and evaluated.

Literature Synthesis

The Influence of Parents on Physical Activity and Sedentary Levels in Children

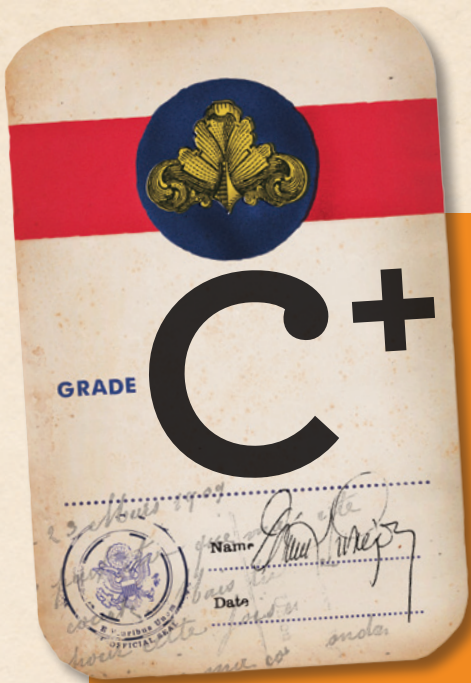
Parents and family can impact the health and physical activity levels of children and youth in a variety of ways. For example, when schoolchildren perceive that at least 1 of their parents is physically active, they are more likely to meet physical fitness standards.^{208,209} Children with families that are supportive and believe strongly in the importance of physical activity are also more likely to engage in physical activity.²¹⁰ Parents can also play a role in the sedentary behaviour of their children. There is evidence that children with mothers who spend a greater amount of time in screen-based activities are more likely to spend a greater amount of time being sedentary on weekends.²¹¹ This reinforces the importance of physical activity promotion targeted not just at children and youth but parents as well.²¹⁰

Friendship Networks and Physical Activity

In a recent review of research that looked at the relationship between friendship networks and physical activity in children and youth, every study found that physical activity levels were similar among friends within a group.²¹² This may be the result of individuals adopting the attitudes and behaviours of the group (peer influence), or it may be the result of individuals selecting friends who are similar to them in terms of attitudes and behaviours (friend selection).²¹² Several longitudinal studies that tracked friendship networks over time found that the physical activity of individuals changed over time and became more similar to that of their friends with higher physical activity levels, suggesting that peer influence and not just friend selection accounts for the similarity in physical activity levels within a friendship network.²¹²

Contributing Factors and Disparities

Based on a large sample of high school students (grades 9-12) in Ontario and Alberta from the COMPASS study, grade-related differences exist in family physical activity and peer influence.²⁰⁷ For example, 33% of grade 9 students report that their parents strongly encourage them to be physically active compared to 21% of grade 12 students. Similarly, 53% of grade 9 students report that their parents are very supportive of them being physically active compared to 42% of grade 12 students. This downward trend with increasing grade is also seen in the proportion of students who report having 5 or more friends who are physically active (46% of grade 9 students vs. 34% of grade 12 students). There is also a gender difference for the proportion of students reporting 5 or more physically active friends (50% of boys vs. 31% of girls).



School

The benchmarks for this indicator relate to physical education and physical activity opportunities at school and in childcare settings, school policy and programming, and school infrastructure and programming. In the absence of new data that can inform the indicator, this year's grade remains a C+.

YEAR	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Physical Education & Physical Activity Participation at School & in Childcare Settings	F/INC*	-/INC*	-/C*	-/C*	C-/B*	C-/C*	C-/B*	C/B*	C		
School Policy & Programming Grade	-/INC**	-/INC**	-/C**	-/C*	C/B**	C/C**	C/B**	C-/B**	C	C+	C+
School Infrastructure & Equipment Grade	-	-	-	INC	B	B	B	B+	B+		
BENCHMARK	A 81-100%		B 61-80%		C 41-60%		D 21-40%		F 0-20%		

- » Percentage of schools with active school policies (e.g., daily PE, daily physical activity, recess, “everyone plays” approach, bike racks at school, traffic calming on school property, outdoor time).
- » Percentage of schools where the majority (≥ 80%) of students are taught by a PE specialist.
- » Percentage of schools where the majority (≥ 80%) of students are offered at least 150 minutes of PE per week.
- » Percentage of schools that offer physical activity opportunities (excluding PE) to the majority (≥ 80%) of their students.
- » Percentage of parents who report their children and youth have access to physical activity opportunities at school in addition to PE classes.
- » Percentage of schools with students who have regular access to facilities and equipment that support physical activity (e.g., gymnasium, outdoor playgrounds, sporting fields, multi-purpose space for physical activity, equipment in good condition).

* From 2005 to 2012 there were 2 separate indicators: Physical Education and Sport & Physical Activity Opportunities at School. In 2013 these indicators were collapsed into a single indicator.

** From 2009 to 2012 there were 2 separate indicators: School Policy and Sport & Physical Activity Opportunities at School. In 2013 these indicators were collapsed into a single indicator.



Key Findings

Physical Education & Physical Activity Participation at School & in Childcare Settings

- » **In 2010-11**, 77% of parents reported their children's (5- to 17-year-olds) school offers programs outside of physical education (PE) classes for sport and physical activity, which is an increase from 68% in 2000 (2010-11 PAM, CFLRI).²¹³
- » **53% of parents** say their children (5- to 17-year-olds) participate in sport and/or physical activity programs at school (2010-11 PAM, CFLRI).²¹³
- » **52% of students** in grades 6 to 12 across most Canadian provinces report participation in intramurals or school team sports (2010-11 Canadian Student Tobacco, Alcohol and Drugs Survey [formerly, Youth Smoking Survey], University of Waterloo).

School Policy & Programming

- » **All provinces/territories in Canada** have a PE curriculum (policy)²¹⁴ but the requirements for high school students, who are most at risk for low physical activity, vary dramatically. Manitoba is the only province that requires a PE credit (or equivalent) in all high school years.
- » **11 of 13 provinces/territories** have comprehensive school health initiatives in place or underway.²¹⁵
- » **55% of school administrators in Canada** report having a fully implemented policy for daily PE for all students (2011 Opportunities for Physical Activity at School Survey [OPASS], CFLRI).²¹⁶ Between 2006 and 2011, there has been a 57% increase in the percentage of schools in Canada with a fully implemented policy for daily PE for all students.²¹⁶
- » **45% of elementary schools** in Ontario have a PE specialist.²¹⁷ New Brunswick requires all elementary schools to have a PE specialist.
- » **83% of school administrators** in Canada report having a fully implemented policy to provide daily recess to their students. 45% of schools report having a fully implemented policy to hire teachers with a university qualification to teach PE.²¹⁶ Neither percentage has changed since 2006 (2011 OPASS, CFLRI).²¹⁶
- » **59% of school administrators** in Canada report having a fully implemented policy to provide students with a number of physical activity options such as competitive and non-competitive activities (2011 OPASS, CFLRI).²¹⁶ The overall percentage of schools that report a fully implemented policy has not changed since 2006.²¹⁶

- » **40% of school administrators** in Canada report having a fully implemented policy that ensures the allocation of funding for student equipment (2011 OPASS, CFLRI).²¹⁶ The overall percentage of schools that report a fully implemented policy has not changed since 2006.²¹⁶
- » **24% of school administrators** in Canada report having a fully implemented policy that ensures an “everyone plays” approach (2011 OPASS, CFLRI).²¹⁶ Again, the overall percentage of schools that report a fully implemented policy has not changed since 2006.²¹⁶

School Infrastructure & Equipment

- » **School administrators in Canada** report that a number of amenities are available during school hours including gymnasiums (95%), playing fields (91%) and areas with playground equipment (73%) (2011 OPASS, CFLRI).²¹⁸
- » **A majority of school administrators** in Canada report their students have access to bicycle racks (79%) and change rooms (75%) during school hours.²¹⁹
- » **95% of school administrators** report that students have regular access to a gymnasium during school hours (2009-10 HBSC).
- » **A large majority also report** that students have access to outdoor facilities (89%) and gyms (84%) outside of school hours (2009-10 HBSC).
- » **School administrators report** that grades 6-10 students have regular access to an outdoor field (83%), an outdoor paved area (61%) or a large room indoors (59%) for physical activity. 85% and 70% of school administrators agree/strongly agree that their school's gymnasium and playing field are in good condition, respectively. A majority of school administrators report that students have access to indoor facilities (68%) and equipment (56%) outside of school hours (2009-10 HBSC).

Recommendations

- » **Ministries of education** and school boards should increase training, support and accountability for implementing PE according to their provincial/territorial policies.
- » **Schools should maximize opportunities** for students to move more and sit less (e.g., standing desks, activity breaks) throughout the day.
- » **Sport and physical activity policies** and programs need to ensure that all children have the opportunity to participate on schools teams, in intramural programs and in recess and lunch time games, depending on their interest.
- » **Ensure that children and youth** with disabilities are always included and integrated into regular PE classes by providing training to teachers.

Research Gaps

- » **More research is needed** on physical activity and sedentary behaviours in childcare settings.
- » **Research is needed** on factors at the student-, school-, and community-level that influence participation in physical activity at school.
- » **While we know something** about the quantity of PE and physical activity participation at school and in childcare settings, we know little about the quality of those opportunities.

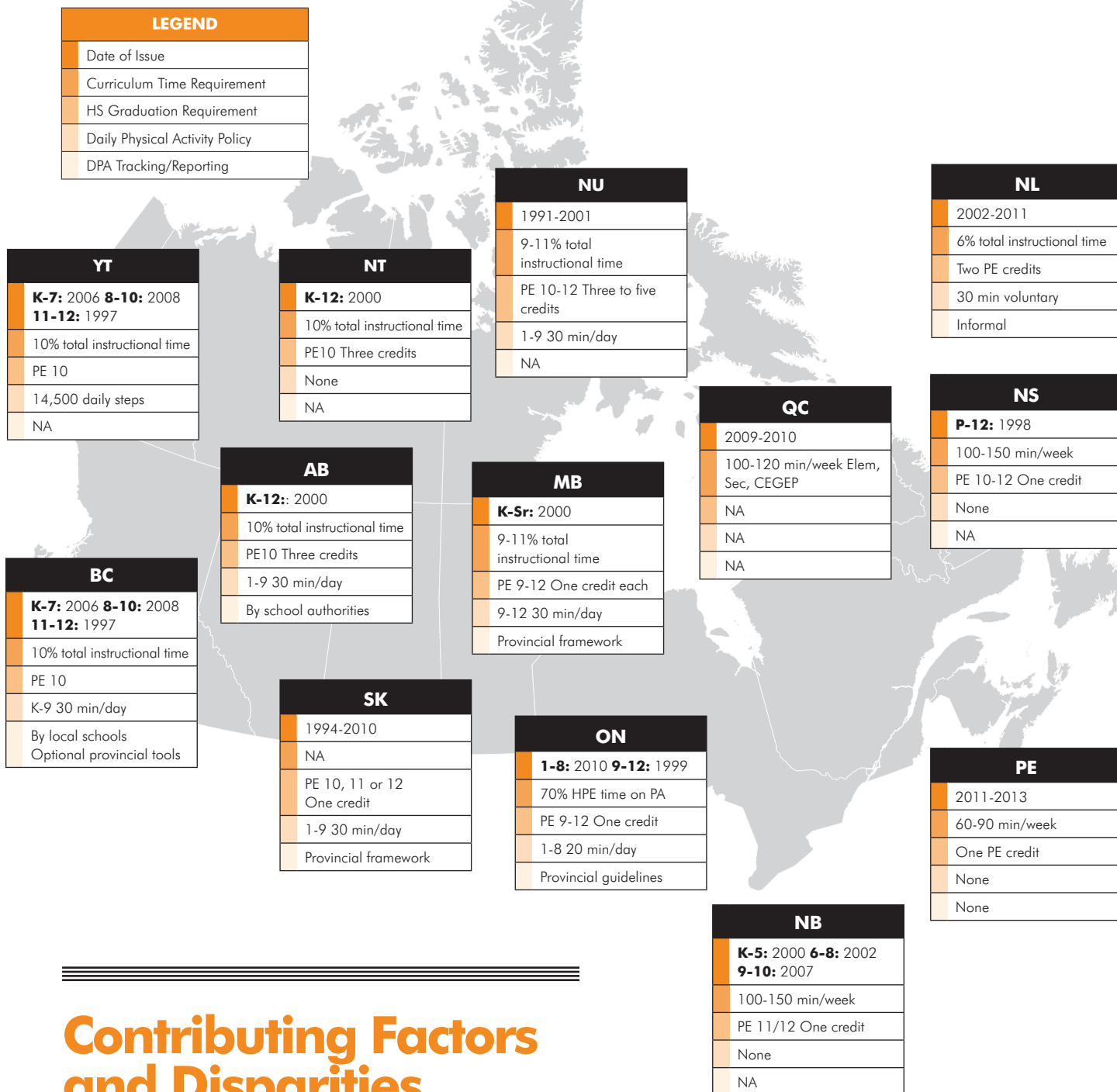
Literature Synthesis

Because children and youth spend a large proportion of their waking hours in non-parental environments such as school and childcare settings, these environments represent multiple opportunities to promote and facilitate physical activity (e.g., PE, recess, intramural sport, varsity sport). Indeed, there is evidence that more physical activity offerings at school are associated with more active children and youth.²²⁰ In a recent study of grades 11-12 students in Manitoba, those who were enrolled in PE had slightly higher levels of daily MVPA, but had almost 2 times the odds of meeting the Canadian Physical Activity Guidelines for Children and Youth (i.e. at least 60 minutes of daily MPVA)⁵ compared to those not enrolled in PE.²²¹ Grades 7-12 students in Montreal who reported participation in school sports throughout their secondary school years were more likely to report lower levels of depression symptoms and perceived stress, and were more likely to report higher levels of self-rated mental health when followed up at approximately 20 years of age.²²² In addition to the immediate impact that the school setting can have on physical activity levels, there may also be more long-term benefits. In a study of 1940s potential servicemen in the United States who were deemed “fit to fight” in World War 2 based on the successful completion of a physical exam, the single greatest predictor of their physical activity levels 50 years later when in their 70s was participation in high school varsity sport.¹⁴² High school varsity sport participation is also associated with fewer self-reported doctor visits.¹⁴²

Canada-Wide Physical Education Curriculum Scan

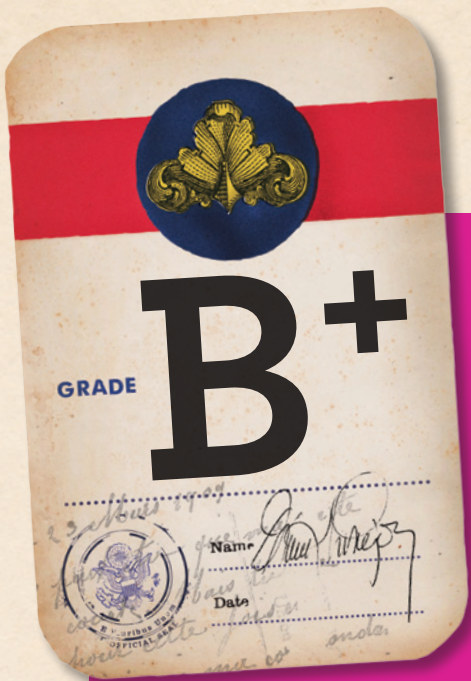
The last time data were presented on physical activity curricula across the country by school type (elementary or secondary) and jurisdiction (province or territory) was in the 2011 Report Card.¹²² In 2014, the Canadian Tire Corporation commissioned a research study that was prepared by The Learning Partnership and which included an updated curriculum scan.²¹⁴ The scan reveals that every province and territory has a PE policy in place but time allotments vary.²¹⁴ However, one of the key conclusions from the scan is that there is lack of consistent physical activity monitoring at school to ensure that physical activity (e.g., PE, daily physical activity) is being implemented appropriately.²¹⁴

FIGURE 8. Cross-country curriculum scan (source: adapted from The Learning Partnership²¹⁴).



Contributing Factors and Disparities

In previous years, the OPASS study has largely informed disparities in the school setting (e.g., age/grade, student population size, community size, region of the country) that relate to physical activity participation. Those Report Cards^{138,227} should be consulted for data on these disparities. A new cycle of the OPASS study, which is expected next year, will provide fresh statistics that will inform the benchmarks and disparities in this indicator. Stay tuned.



Community & Environment

The benchmarks for this indicator relate to community policy and programming, availability of infrastructure (e.g., parks and playgrounds), neighbourhood safety, and the natural environment. In the absence of new data that can inform the indicator, this year's grade remains a B+.

YEAR	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Community Policy & Programming Grade	-/-*	-/-*	-/-*	D/-*	D/B+*	D/B+*	D/B+*	D/B+**	B	B+	B+
Availability of Facilities, Programs, Parks & Playgrounds Grade	C	C	C**	B+	B	B	A-	A-	A-		
Neighbourhood Safety Grade	-	B	-	-	B	B	B	B	B		
Natural Environment Grade	-	-	-	-	-	-	INC***	INC***	INC***		
BENCHMARK	A 81-100%			B 61-80%		C 41-60%		D 21-40%		F 0-20%	

- » Percentage of children or parents who perceive their community/municipality is doing a good job at promoting physical activity (e.g., variety, location, cost, quality).
- » Percentage of communities/municipalities that report they have policies promoting physical activity.
- » Percentage of communities/municipalities that report they have infrastructure (e.g., sidewalks, trails, paths, bike lanes) specifically geared toward promoting physical activity.
- » Percentage of children or parents who report having facilities, programs, parks and playgrounds available to them in their community.
- » Percentage of children or parents who report living in a safe neighbourhood where they can be physically active.
- » Percentage of children or parents who report having well-maintained facilities, parks and playgrounds in their community that are safe to use.

* In the years prior to 2013, there were 2 separate indicators: Municipal Policies & Regulations and Community Programming. In 2013, these indicators were collapsed into a single indicator: Community Policy & Programming.

** In 2005 and 2006, this indicator was called Proximity & Availability of Facilities, Programs, Parks & Playgrounds. The 2007 grade reflects both availability and usage. In all other years, availability was graded on its own.

*** This indicator has been in the Report Card since 2011 and was called Nature & the Outdoors until this year.

Key Findings

Availability of Facilities, Programs, Parks & Playgrounds

- » **Most parents in Canada** do not report infrastructure and programming as barriers that prevent their child from participating in organized sports: inconvenient location of programs/clubs/facilities (26%), lack of awareness of programs available in the community (15%) and limited access to good quality sports facilities (13%) (2014 CIBC – KidSport™ Report, CIBC and KidSport™).¹³⁶
- » **Approximately 17,000 km** of the Trans Canada Trail (75% of the proposed route) are operational. 4 out of 5 Canadians live within 30 minutes of the Trail.²²³

Neighbourhood Safety

- » **The homicide rate** in Canada in 2011 for all ages (1.73 per 100,000) was 36% lower than the homicide rate in 1983 (2.69 per 100,000) (1983-2012 Uniform Crime Reporting Survey, Statistics Canada). Note: the method for calculating the homicide rate may have been modified at points during this time period. Trends over time must be interpreted with caution.
- » **The sexual assault rate** in Canada in 2012 (62.85 per 100,000) for all ages was 34% higher than the sexual assault rate in 1983 (47.04 per 100,000) (1983-2012 Uniform Crime Reporting Survey, Statistics Canada). However, the current rate is the second lowest since 1985. Note: the method for calculating the sexual assault rate may have been modified at points during this time period. Trends over time must be interpreted with caution.
- » **The child abduction rate** (by non-parents) in Canada in 2012 for children and youth under 14 years of age (0.43 per 100,000) was 23% lower than the child abduction rate in 1983 (0.56 per 100,000) (1983-2012 Uniform Crime Reporting Survey, Statistics Canada). Note: the method for calculating the child abduction rate may have been modified at points during this time period. Trends over time must be interpreted with caution.
- » **The odds of total stranger abduction** are about 1/14 million based on RCMP reports.⁴³ Being with friends outdoors may further reduce this risk.
- » **Canadian children are 8 times** more likely to die as a passenger in a motor vehicle than from being hit by a vehicle when outside on foot or on a bike.⁵²⁻⁵⁴

Recommendations

- » **National guidelines/standards** for the construction of protected bicycle paths and lanes are required.
- » **Municipalities should adopt** complete streets policies which ensure that streets are designed for all ages, abilities, and modes of travel.
- » **Create and promote** the development of natural playgrounds to supplement or replace traditional playgrounds in order to help engage children in outdoor play and enhance their connection with nature. Natural playgrounds are areas where children can play with natural elements such as sand, water, wood and living plants.
- » **Ensure that children and youth** with disabilities are always included and integrated into community programs by providing training to recreation leaders.

Research Gaps

- » **Research is needed** to understand why families are not using local spaces and programs for physical activity despite good availability.
- » **Research is needed** on the factors that influence parental perceptions of child safety as it relates to playing outdoors and engaging in active transportation.

Literature Synthesis

Playability vs. Walkability

The built environment consists of all physical environments created or modified by humans (e.g., urban design, land use, transportation systems). The relationship between these environments and physical activity in children and youth varies by age and is sometimes counterintuitive or unclear. For example, although a review study revealed a positive correlation between walkability and physical activity in children,²²⁴ a nationally representative sample of grades 6-10 students in Canada found that walkability (how conducive an area is to walking) correlates negatively with physical activity whereas some markers of poor walkability such as cul-de-sacs are positively related to physical activity.²²⁵ Perhaps areas with poor walkability – not just cul-de-sacs but undeveloped green space like fields and treed areas – actually present opportunities for outdoor play in children and youth. Indeed, a recent study of grades 6-8 students in Canada found that the percentage of home neighbourhood space consisting of trees was positively associated with the frequency of physical activity outside of school hours.²²⁶

Parental Safety Concerns as a Barrier to Physical Activity

As stated in previous Report Cards,^{138,227} child and youth participation in unstructured free play, structured physical activity and active transportation can be influenced by parental safety concerns. A recent study of 9- to 13-year-olds in Quebec reinforced this – parents who felt comfortable letting their children actively commute to school were more likely to report that their children did actively commute to school.²²⁸ In a recent review of qualitative research studies, the most widely reported finding was that parental safety concerns (e.g., worry about strangers, bullies and traffic) are the primary barrier to independent active free play.¹⁵²

In view of the influential role that parents have on the independent active free play of their children, the question that needs to be asked is whether an appropriate balance of allowing children and youth to be active while protecting them from serious harm has been reached? As argued in the recently released *Position Statement on Active Outdoor Play* (see pages 8-9), “We need a better balance between perceived danger, real danger and acceptable risk”. In terms of real danger and associated risk in relation to crimes against children and youth in Canada, the majority of physical and sexual assaults are not committed by strangers but by someone known to the victim. For example, 81% of police-reported physical assaults against children under the age of 6 in Canada are committed by persons known to the victims.²²⁹ Likewise, 75% of reported sexual violence against children and youth in Canada was perpetrated by someone familiar to the victim such as a family member, friend or acquaintance.²²⁹ Furthermore, cases of child luring through the Internet (149 reported cases in 2008)²²⁹ are far greater than the number of reported child kidnappings by strangers (odds of 1/14 million). These statistics should help inform parents’ understanding of real danger as they seek to strike the proper balance of protecting their children and youth without unnecessarily restricting their independent active free play.

The Importance of Connectedness to Nature

A recent review of 30 studies reveals that people who are more connected to nature tend to be happier.²³⁰ The strength of the relationship is similar to other factors believed to be positively linked with happiness including income,²³¹ marital status,²³² education²³¹ and physical attractiveness.²³³ Positive experiences in nature at a young age are important for fostering nature connectedness. These experiences can influence one’s tendency to connect with nature²³⁴ and, subsequently, behaviours like time spent outdoors and MVPA.¹²

Contributing Factors and Disparities

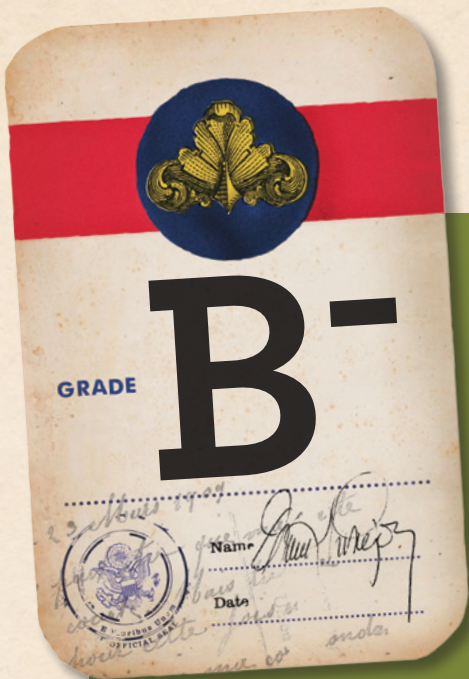
Some parents (11%) in Canada report a lack of accessibility (e.g., distance to facilities and opportunities for physical activity) as a barrier to their children being physically active.²³⁵ This differs by province and territory with the proportion of parents from the Atlantic region, Saskatchewan and the North reporting a lack of accessibility as a barrier generally exceeding the national average.²³⁵ This disparity is also seen depending on community size with lack of accessibility being more problematic in communities with less than 10,000 versus 250,000 residents or more.²³⁵

STRATEGIES & INVESTMENTS



2015

At the 2015 Conference of Federal-Provincial-Territorial Ministers responsible for Sport, Physical Activity and Recreation, provincial and territorial Ministers endorsed, and the Government of Canada supported, the Framework for Recreation in Canada 2015.



Government

This year's B- grade is an improvement since last year's due to new evidence of increased physical activity funding by the federal government and by a majority of provincial and territorial governments. Evidence of leadership and commitment (e.g., two announcements made at the 2015 Conference of Federal-Provincial-Territorial Ministers responsible for Sport, Physical Activity and Recreation) also factored into this year's improved grade.

YEAR	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Federal Government Strategies & Investments Grade	C-	-	C	C+	C	C+/F*	C/F*	D/F*	C-	C	B-
Provincial/Territorial Government Strategies & Investments Grade	INC	-	C	C+	C+	B+/C-**	B+/C-**	B+/C-**	C		
BENCHMARK	A 81-100%		B 61-80%		C 41-60%		D 21-40%		F 0-20%		

- » Evidence of leadership and commitment in providing physical activity opportunities for all children and youth.
- » Allocated funds and resources for the implementation of physical activity promotion strategies and initiatives for all children and youth.
- » Demonstrated progress through the key stages of public policy making (i.e., policy agenda, policy formation, policy implementation, policy evaluation and decisions about the future).

* In years prior to 2010, there was 1 indicator: Federal Government Strategies & Investments. From 2010 to 2012, there were 2 separate indicators: Strategies and Investments. In 2013, these indicators were again collapsed into a single indicator.

** In years prior to 2010, there was 1 indicator: Provincial/Territorial Government Strategies & Investments. From 2010 to 2012, there were 2 separate indicators: Strategies and Investments. In 2013, these indicators were again collapsed into a single indicator.



Key Findings

- » **At the 2015 Conference** of Federal-Provincial-Territorial Ministers responsible for Sport, Physical Activity and Recreation, provincial and territorial Ministers endorsed, and the Government of Canada supported, the *Framework for Recreation in Canada 2015*. The Framework was a joint initiative of the Canadian Parks and Recreation Association and the Interprovincial Sport and Recreation Council (ISRC).
- » **At the same 2015 Conference** of Federal-Provincial-Territorial Ministers responsible for Sport, Physical Activity and Recreation, a report outlining the current status of physical activity levels among children, youth and adults in Canada was discussed. Recognizing the complex challenge of increasing physical activity for all Canadians, Ministers gave direction to apply findings from the report to advance approaches and program interventions to increase population-level physical activity through collaborative action and jurisdictional initiatives. Further, Ministers directed officials to review *Active Canada 20/20: A Physical Activity Strategy and Change Agenda for Canada*, with a view to developing a pan-Canadian framework to be brought to Ministers for endorsement at a future meeting.
- » **On October 7, 2014**, the Government of Canada announced intentions to enhance the Child Fitness Tax Credit (CFTC) by increasing the maximum amount that may be claimed under the credit to \$1,000 from \$500 and making it refundable. According to the Department of Finance's *Tax Expenditures and Evaluations 2014* report, the projected tax expenditure for the CFTC is \$130 million for 2014.
- » **Sport Canada** and the provinces/territories work together to help children and youth participate and excel in sport through the implementation of Canadian Sport for Life (CS4L), a Federal-Provincial/Territorial framework that within its first three stages (Active Start, Fundamentals and Learn to Train) promotes competency in fundamental motor skills for children and youth. In 2014-15, Sport Canada recommended \$573,800 in funding for CS4L Leadership in the sport system to advance Long-Term Athlete Development implementation.
- » **The Government of Canada** encourages sport participation and physical activity among children and youth by supporting projects and activities through bilateral agreements with provinces and territories. One of the primary objectives of the bilateral agreements specifically targets youth and children: *To introduce sport through programming that supports physical literacy at the early stages of athlete development*. In 2014-15, \$4.87 million in support was provided through these agreements. The provinces and territories in turn matched this amount.
- » **On October 16, 2014**, His Excellency, the Right Honourable David Johnston, Governor General of Canada proclaimed 2015 as the Year of Sport in Canada. The overarching theme is Canada: A Leading Sport Nation (see the Spotlight section for more information).
- » **In conjunction with** the 2015 Pan Am/Parapan Am Games, the Government of Canada is contributing up to \$500 million for sport infrastructure, legacy initiatives, a federal cultural strategy, preparation of Canadian teams (athletes, coaches and officials), and essential federal services that support the overall staging, safety and security of the Games.
- » **Parliamentarians of all parties** voted unanimously to pass Bill S-211, an Act to establish the first Saturday in June as National Health and Fitness Day across Canada. This initiative provides an opportunity for local municipalities and all citizens to mark the day with local events that celebrate and promote the use of local health, recreational, sports and fitness facilities.
- » **The Public Health Agency of Canada** is addressing physical inactivity through partnership agreements with the private sector and non-government organizations (see the Spotlight section for more information).
- » **The Public Health Agency of Canada** is leading a collaborative project called *Mobilizing Knowledge for Active Transportation*. The project reflects the Agency's commitment to promote healthy living and curb childhood obesity, and supports its recognition that designing communities to support active transportation is key to fostering physical activity and producing a variety of public health benefits.
- » **Health Canada is working** with Aboriginal partners to deliver community-based, culturally relevant healthy child development and healthy living programs that address obesity. With investments of \$134.8 million in 2014-15, community-based health promotion and disease prevention programs and services promote healthy eating and physical activity, and build community skills to support healthy living.
- » **11 of 13** provinces and territories have maintained or increased their spending on physical activity.²³⁶

Recommendations

- » **Federal government officials** should work with provincial/territorial governments and the physical activity sector in Canada to develop the Pan-Canadian Framework that addresses their goal of advancing approaches and program interventions to increase population-level physical activity through collaborative action and jurisdictional initiatives. The Framework or Strategy should be based on the work of *Active Canada 20/20*, and align with the *Framework for Recreation 2015* and the *Canadian Sport Policy 2012*.
- » **To realize cost savings** as a result of a more physically active population, an increased range of funding and investment is required to support active healthy living, recreation and sport infrastructure, including physical activity promotion and entry-level sport participation. Further, increased investment across the broader sector is required, including multi-year financial commitments providing sustained funding to organizations and programs providing physical activity leadership.
- » **Create a mechanism**, that could take the form of an interdepartmental council, a new ministry or a public-private-nonprofit body, to integrate sport, physical activity and wellness, to connect efforts across education, transportation, human resources, infrastructure, environment, heritage and tourism, veterans' affairs, citizenship, the private sector and other non-governmental stakeholders.

Research Gaps

- » **There is a need for more evaluation** of policies that impact physical activity and/ or sedentary behaviour. For example, it is important to examine if making the Child Fitness Tax Credit refundable will allow it to be more accessible to low-income families.
- » **There is a need to establish** common tools and measures of physical activity at the national level and at the provincial/territorial level.

Spotlight

Public Health Agency of Canada: Addressing Physical Inactivity through Multi-sectoral Partnerships to Promote Healthy Living and Prevent Chronic Disease

The **Public Health Agency of Canada** reports that since 2013 they have been working with partners to create the conditions that will help children, youth and their families achieve and maintain healthy weights. The Agency is taking an integrated approach to the promotion of healthy living and chronic disease prevention by focusing on common risk factors, such as physical inactivity, unhealthy eating, and tobacco use, that are most associated with the major chronic diseases, including cancer, diabetes, cardiovascular and chronic respiratory diseases.

This approach includes leveraging federal investments under the *Multi-sectoral Partnerships to Promote Healthy Living and Prevent Chronic Disease* initiative. These investments and efforts are intended to foster a “whole of society” approach to develop new ideas, initiatives and partnerships that serve to support Canadians in living healthier and more active lives. For more information visit www.phac-aspc.gc.ca/fo-fc/mspphl-pppmvs-eng.php. Each year, the Agency invests approximately \$20 million in funding for multi-sectoral partnership projects in this area. Examples of recently-funded projects include:

- » **The Play Exchange** is a high-profile competition designed to seek out leading edge healthy living ideas from a range of groups including not-for-profit organizations, social enterprises, businesses, schools, students and families. The best innovation, *Trottibus Walking School Bus*, was selected by Canadians in January 2015 and will receive up to \$1 million to scale up their intervention. Working in collaboration with Canadian Tire, LIFT Philanthropy Partners, and with support from the Canadian Broadcasting Corporation, the goal of The Play Exchange is to engage Canadians in an unprecedented national dialogue around preventing chronic diseases and the importance of healthy active lifestyles. Visit www.phac-aspc.gc.ca/media/nr-rp/2014/2014_0222-eng.php.
- » **Building Our Kids Success** (BOKS) program, an initiative of Reebok and the Reebok Foundation, is aimed at getting elementary school kids moving and their brains ready for a day of learning. BOKS, is an evidence-based proven program to improve physical endurance, executive functioning, working memory and other areas that help lay the ground work for successful and healthy children. The partnership between, Reebok Canada, the Reebok Canada Fitness Foundation, the Canadian Football League (CFL), and the Propel Centre for Population Health Impact will help address the obstacles that prevent children from getting enough physical activity so they can lead more active and healthier lifestyles. Visit news.gc.ca/web/article-en.do?nid=887089.
- » **RBC Learn to Play**, a partnership with the Royal Bank of Canada and ParticipACTION, delivers a national program aimed at improving physical literacy among Canada’s children and youth. The Project focuses on teaching kids the basics of being active while also supporting programs that give them the chance to put these skills into practice. This helps children and youth feel confident and knowledgeable enough to participate in sport and to make physical activity a part of their daily lives. The main goal of the RBC Learn to Play Project is to help organizations incorporate “physical literacy” elements into their sport and recreation programs. Visit news.gc.ca/web/article-en.do?nid=908559&_ga=1.147441271.1945364295.1408207158.

To date, over \$27 million in private sector capital has been leveraged through partnerships with organizations such as Reebok, the CFL, Air Miles for Social Change, Maple Leaf Sports and Entertainment, Shoppers Drug Mart, Canadian Tire and Sun Life Financial.

The Year of Sport

On October 16, 2014, His Excellency, the Right Honourable David Johnston, Governor General of Canada proclaimed 2015 as the Year of Sport in Canada. The overarching theme is *Canada: A Leading Sport Nation*. The Year of Sport is a proactive pan-Canadian initiative to celebrate the role that sport plays in our country and encourage Canadians to participate in and seek the benefits of sport. It focuses on making the most of existing sport events and other celebratory activities to highlight the advantages of sport to Canadians.

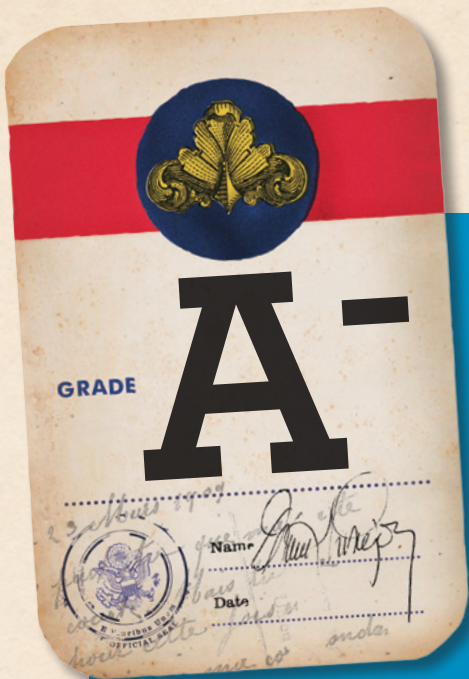
In 2015, Canada is the host of several high-profile national and international sport events including the 25th edition of the Canada Games, the FIFA Women's World Cup, and the 2015 Pan American and Parapan American Games. In addition, approximately 60 international single-sport events and 55 national single-sport championships for all age levels are hosted annually by national sport organizations.

There has been an enthusiastic response to the Year of Sport. Initiatives during the first two months of 2015 include the following:

- » On January 24, 2015, the Governor General welcomed the public to the Rideau Hall Winter Celebration with activities including skating, dog sledding, and kick sledding excursions.
- » In celebration of Black History Month in February 2015, Citizenship and Immigration Canada developed a poster, internet content and social media messages recognizing great Black Canadian Athletes. Black Canadians have a rich history of breaking down barriers through sport.
- » The Canadian Science and Technology Museum initiated a 2015 social media campaign highlighting the relationship between science/technology and sport.
- » The Agriculture Museum of Canada has begun using the hashtag #YearofSport to highlight connections between the agricultural industry and athletes.
- » Library and Archives Canada has begun using the hashtag #YearofSport to share photos and historical information about athletes.
- » The Governments of Manitoba and British Columbia declared 2015 as the Year of Sport.

WHO COMMITTEE TO ELIMINATE CHILDHOOD OBESITY

During her opening address at the 67th session of the World Health Assembly, World Health Organization (WHO) Director General Dr. Margaret Chan, voiced concern over the growing problem of childhood obesity. The WHO estimates that 42 million children worldwide are obese, and that this number could rise to 70 million by 2025 if current trends continue. In order to gather the best scientific evidence to combat this issue, the WHO has established a Commission on Ending Childhood Obesity.^{237,238} Ultimately, the Commission will produce a consensus report outlining which specific approaches and interventions aimed at preventing childhood obesity will be most effective in a variety of contexts around the world. They hope to report these recommendations in May 2015 at the 68th annual World Health Assembly.^{237,238} For more information, visit www.who.int/end-childhood-obesity/en/.



Non-Government

This year's grade remains an A- because available data around leadership and commitment, allocation of funds, and policy work neither signal an upgrade nor downgrade of the indicator.

YEAR	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
GRADE	-	-	INC	C+	B-	C	C	A- /INC*	B+	A-	A-
BENCHMARK	A 81-100%		B 61-80%		C 41-60%		D 21-40%		F 0-20%		

- » Evidence of leadership and commitment in providing physical activity opportunities for all children and youth.
- » Allocation of funds and resources for the implementation of physical activity promotion strategies and initiatives for all children and youth.
- » Demonstrated progress through the key stages of public policy making (i.e., policy agenda, policy formation, policy implementation, policy evaluation and decisions about the future).

* In years prior to 2012, there was 1 indicator: Non-Government Strategies & Investments. In 2012, there were 2 separate indicators: Strategies and Investments. In 2013, these indicators were again collapsed into a single indicator.



Key Findings

- » **Active Canada 20/20**, a national physical activity strategy and change agenda for Canada, underwent changes this year related to the leadership and coordination of its implementation. Despite losing some momentum, a leadership group is currently being established to oversee its continued advancement. Four Action Groups (Active Transportation, Accessibility and Diversity, Schools and Active Play) remain in place and are at varying stages of progress.
- » **Stakeholders from** physical activity, sport, recreation, education and public health have proposed a common definition for physical literacy, with the intent of providing a frame of reference for future programming and resource development related to physical literacy.
- » **Through the RBC Learn to Play** program, over \$1,600,000 in grants was awarded to community-based organizations to help improve and deliver high quality programs across the country. This project is part of the RBC Believe in Kids pledge, a 5-year, \$100 million commitment to improve the well-being of one million children and youth in Canada.
- » **The Institute for Canadian Citizenship** released a new report, *Playing Together - New Citizens, Sports and Belonging*. The findings conclude that sport and physical activity provide important opportunities for new Canadians to build connections, community and a sense of feeling welcome in Canada.
- » **The Heart and Stroke Foundation** and the Canadian Partnership Against Cancer (individually) are working to advance the Active Transportation agenda through policy development and knowledge translation activities.
- » **Canadian Tire launched ACTIVE AT SCHOOL**, a national campaign that aims to inject one hour of daily physical activity in Canada's schools with support from a group of, today, over 80 influential, credible organizations from across Canada who have expertise in health and wellness, sport and recreation, industry and education. Canadian Tire has secured partnerships with three provinces - Prince Edward Island, New Brunswick and Ontario - to establish these policies in schools throughout these provinces.

Recommendations

- » **Non-government organizations**, the private sector, philanthropic groups and foundations should maintain or increase funding and promoting active living as a way to invest in the health of children and youth, families, the community and country.
- » **Non-government organizations** in physical activity, sport and recreation need to work together to align the actions and priorities outlined in Active Canada 20/20, A Framework for Recreation in Canada 2015 and the Canadian Sport Policy 2012.
- » **Community organizations** from all sectors need to work together to develop policies that identify community assets for physical activities, and maximize the use of those assets through shared use plans and agreements.
- » **Investigate multisectoral opportunities** to collaborate with the insurance industry to reduce real and perceived barriers to physical activity associated with liability issues.
- » **Organizations need to address** the social determinants of health, inclusion and accessibility, culture and gender when developing all programs and policies.

Research Gaps

- » **Research is needed** to evaluate strategies intended to enhance organizational capacity at the local level in order to improve the delivery of child and youth sport and physical activity programs supported by the private sector.
- » **Improved evaluation** and reporting of private/non-governmental organization sector investments are needed to better understand the impact of these investments on the physical activity levels of children and youth.
- » **A coordinated research** and evaluation strategy is needed to assess the effectiveness of each of the three national physical activity, recreation and sport initiatives (Active Canada 20/20, the Framework for Recreation in Canada 2015 and the Canadian Sport Policy).

Spotlight

Active Canada 20/20

In the absence of a national physical activity strategy for Canada, non-government stakeholders initiated a process in 2010 to develop Active Canada 20/20, a Physical Activity Strategy and Change Agenda for Canada. With input from approximately 1,700 cross-sectoral stakeholders from every province and territory, Active Canada 20/20 provides a number of priority actions that address four key areas of focus (Policy Development, Change and Implementation; Targeted Information and Public Education; High Quality, Accessible Programs and Services; Community Design) and three Foundations (Evidence and Knowledge Exchange; Strategic Investments; and Mobilization). One milestone since its creation was a National Gathering in Fredericton, NB in 2013. Delegates from every province and territory attended as well as representatives from 20 national organizations. The result was a commitment from all provinces and territories to develop a physical activity strategy or align their current efforts with Active Canada 20/20. Further, four Action Groups were established based on the delegates' priorities for increasing physical activity: Active Transportation, Accessibility and Diversity, Schools, Active Play. One Action Group - the Active Play Action Group - has contributed to the development of a Position Statement on Active Outdoor Play, set for release in June 2015.

RBC Learn to Play

The RBC Learn to Play Project provides grants to local organizations and communities across Canada in support of building the physical literacy of children and youth in Canada. In 2014, RBC, in partnership with ParticipACTION and PHAC, provided over 1,600,000 in grants to organizations across multiple sectors ranging from \$1,000 to \$25,000. RBC Learn to Play Community Grants (\$1,000 to \$10,000) were awarded to local organizations that teach new skills or sports to kids, and/or expose them to a multiple sports or multiple skills such as swimming or skating lessons. RBC Learn to Play Leadership Grants (\$10,001 to \$25,000) were awarded to community groups that are developing or implementing action plans to transform the way sport and physical activities are planned and delivered, such as programs that makes sports available for new immigrant youth.

The Framework for Recreation in Canada 2015

The Framework for Recreation in Canada, which was developed by CPRA and ISRC, presents a renewed definition of recreation and explores the challenges and benefits of recreation today. It provides the rationale for investing in an evolved recreation strategy, and describes the need for collaboration with other initiatives in a variety of sectors. The Framework also provides a new vision, and suggests some common ways of thinking about the renewal of recreation, based on clear goals and underlying values and principles. The Framework describes five goals and priorities for action under each goal: Active Living, Inclusion and Access, Connecting People and Nature, Supportive Environments, and Recreation Capacity. On February 13, 2015, Provincial and Territorial Ministers endorsed and the Government of Canada supported the *Framework for Recreation in Canada 2015*. The announcement took place at the 2015 Conference of Federal/Provincial/Territorial Ministers responsible for Sport, Physical Activity and Recreation.

Abbreviations

CANPLAY

Canadian Physical Activity Levels Among Youth Survey

CAPL

Canadian Assessment of Physical Literacy

CBC

Canadian Broadcasting Corporation

CFLRI

Canadian Fitness and Lifestyle Research Institute

CHMS

Canadian Health Measures Survey

CPRA

Canadian Parks and Recreation Association

F/P/T

Federal, provincial, territorial

HALO

Healthy Active Living and Obesity Research Group

ISRC

Interprovincial Sport and Recreation Council

LPA

Light-intensity physical activity

MVPA

Moderate- to vigorous-intensity physical activity

OPASS

Opportunities for Physical Activity at School Survey

PAM

Physical Activity Monitor

PE

Physical Education

PHAC

Public Health Agency of Canada

RBC

Royal Bank of Canada

WHO

World Health Organization

Summary of Indicators

				2015 REPORT CARD GRADES				
				<21%	21-40%	41-60%	61-80%	>80%
CATEGORY	#	INDICATOR NAME	BENCHMARK(S)	F	D	C	B	A
Behaviours That Contribute to Overall Physical Activity Levels	1	Overall Physical Activity	% of children and youth who meet the Canadian Physical Activity Guidelines (3- to 4-year-olds: at least 180 minutes of physical activity at any intensity every day; 5- to 17-year-olds: at least 60 minutes of moderate- to vigorous-intensity physical activity every day).					
	2	Organized Sport & Physical Activity Participation	% of children and youth who participate in organized sport and/or physical activity programs.					
	3	Active Play	% of children and youth who engage in unstructured/unorganized active play for several hours a day. % of children and youth who report being outdoors for several hours a day.	Incomplete				
	4	Active Transportation	% of children and youth who use active transportation to get to and from places (e.g., school, park, mall, friend's house).					
	5	Physical Literacy	% of children and youth who meet the recommended levels of physical competence, knowledge, motivation and daily behaviours needed for a physically active lifestyle.	Incomplete				
	6	Sedentary Behaviours	% of children and youth who meet the Canadian Sedentary Behaviour Guidelines (3- to 4-year-olds: less than 1 hour of screen time per day; 5- to 17-year-olds: no more than 2 hours of screen time per day). Note: the Guidelines currently provide a time limit recommendation for screen-related pursuits, but not for non-screen-related pursuits.					
Settings & Sources of Influence	7	Family & Peers	% of parents who facilitate physical activity and sport opportunities for their children (e.g., volunteering, coaching, driving, paying for membership fees and equipment).					
			% of parents who meet the Canadian Physical Activity Guidelines for Adults.					
			% of parents who are physically active with their kids.					
			% of children and youth with friends and peers who encourage and support them to be physically active.					
			% of children and youth who encourage and support their friends and peers to be physically active.					
	8	School	% of schools with active school policies (e.g., daily PE, daily physical activity, recess, "everyone plays" approach, bike racks at school, traffic calming on school property, outdoor time).					
			% of schools where the majority (≥ 80%) of students are taught by a PE specialist.					
			% of schools where the majority (≥ 80%) of students are offered at least 150 minutes of PE per week.					
			% of schools that offer physical activity opportunities (excluding PE) to the majority (≥ 80%) of their students.					
			% of parents who report their children and youth have access to physical activity opportunities at school in addition to PE classes.					
			% of schools with students who have regular access to facilities and equipment that support physical activity (e.g., gymnasium, outdoor playgrounds, sporting fields, multi-purpose space for physical activity, equipment in good condition).					
	9	Community & Environment	% of children or parents who perceive their community/municipality is doing a good job at promoting physical activity (e.g., variety, location, cost, quality).					
			% of communities/municipalities that report they have policies promoting physical activity.					
			% of communities/municipalities that report they have infrastructure (e.g., sidewalks, trails, paths, bike lanes) specifically geared toward promoting physical activity.					
% of children or parents who report having facilities, programs, parks and playgrounds available to them in their community.								
% of children or parents who report living in a safe neighbourhood where they can be physically active.								
		% of children or parents who report having well-maintained facilities, parks and playgrounds in their community that are safe to use.						
Strategies & Investments	10	Government	Evidence of leadership and commitment in providing physical activity opportunities for all children and youth.					
			Allocated funds and resources for the implementation of physical activity promotion strategies and initiatives for all children and youth.					
			Demonstrated progress through the key stages of public policy making (i.e., policy agenda, policy formation, policy implementation, policy evaluation and decisions about the future).					
	11	Non-Government	Evidence of leadership and commitment in providing physical activity opportunities for all children and youth.					
			Allocation of funds and resources for the implementation of physical activity promotion strategies and initiatives for all children and youth.					
			Demonstrated progress through the key stages of public policy making (i.e., policy agenda, policy formation, policy implementation, policy evaluation and decisions about the future).					

Methodology & Data Sources

Unlike other report card publications, which often rely on a single data source, the ParticipACTION Report Card synthesizes data from multiple data sources and the research literature. The development of indicators and the assignment of grades involve an interdisciplinary Report Card Research Committee, including researchers from across Canada. An annual summary of research data and literature is prepared by staff at the Children's Hospital of Eastern Ontario Research Institute to facilitate the review of the information. Grade assignments are determined based on examination of the current data and literature for each indicator against a benchmark or optimal scenario, assessing the indicator to be poor, adequate, good or excellent:

- A** = We are succeeding with a large majority of children and youth.
- B** = We are succeeding with well over half of children and youth.
- C** = We are succeeding with about half of children and youth.
- D** = We are succeeding with less than half, but some, children and youth.
- F** = We are succeeding with very few children and youth.

Key considerations include trends over time and the presence of disparities. Analysis of trends over time and international comparisons are conducted where possible, as this information is not always available for all indicators. National data takes precedence over sub-national and regional data, and objectively measured data takes precedence over subjectively measured data. Disparities are primarily based on disabilities, race/ethnicity, immigration status, geography (provincial/territorial comparisons), socioeconomic status, urban/rural setting, gender and age (e.g., adolescence). When evidence of disparities exists, grades are lowered to reflect that we are not reaching all children and youth who may benefit most from physical activity opportunities.

Some indicators are stand-alone, while others are comprised of several components. During the grade assignment meeting, each component of an indicator is assessed. Over the evolution of the Report Card, there has been an attempt 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.

The following are major data sources used in the 2015 Report Card:

Canadian Health Measures Survey (CHMS; <http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=5071>): The Canadian Health Measures Survey, launched in 2007, is collecting key information relevant to the health of Canadians by means of direct physical measurements such as blood pressure, height, weight and physical fitness. As part of the CHMS, a clinical oral health examination helps to evaluate the association of oral health with major health concerns such as diabetes, and respiratory and cardiovascular diseases. In addition, the survey is collecting blood and urine samples to test for chronic and infectious diseases, as well as nutrition and environment markers. Through household interviews, the CHMS is gathering information related to nutrition, smoking habits, alcohol use, medical history, current health status, sexual behaviour, lifestyle and physical activity, the environment and housing characteristics, as well as demographic and socioeconomic variables.

Canadian Physical Activity Levels Among Youth Survey (CANPLAY; www.cfri.ca): The Canadian Fitness and Lifestyle Research Institute conducts a major national survey annually to examine physical activity levels of children and youth. CANPLAY studies the current fitness and physical activity patterns of young people in Canada. Approximately 10,000 children and youth (approximately 6,000 families) are randomly selected across Canada. The study has been conducted since 2005. Pedometers are used to measure the number of steps taken daily by each participant. CANPLAY is a joint venture of the Canadian Fitness and Lifestyle Research Institute, the Public Health Agency of Canada and the Interprovincial Sport and Recreation Council.

Canadian Student Tobacco, Alcohol and Drugs Survey (CSTADS; uwaterloo.ca/canadian-student-tobacco-alcohol-drugs-survey/): Formerly known as the Youth Smoking Survey, CSTADS is a repeated, biannual, cross-sectional survey of 50,000+ students in grades 6 to 12 from all provinces except New Brunswick. Funded by Health Canada, the CSTADS was created to study the factors that increase or diminish the likelihood of tobacco use among youth. The Propel Centre for Population Health Impact at the University of Waterloo coordinates the implementation of the CSTADS nationally, and provincial partners implement the CSTADS in each province. The CSTADS was first administered in 1994 and it has been the largest and most comprehensive survey on youth smoking behaviour since 1979. It was repeated in 2002, 2004-05, 2006-07, 2008-09, 2010-11 and most recently in 2012-13.

Health Behaviour in School-Aged Children Survey (HBSC; www.hbsc.org):

Results are based on the Canadian data from the World Health Organization's 2009-10 HBSC. The HBSC is a repeated cross-sectional survey conducted every 4 years. The survey consists of a classroom-based questionnaire. The sample was designed according to the international HBSC protocol in that a cluster design was used, with the school class being the basic cluster and the distribution of the students reflected in the distribution of Canadians in grades 6 to 10 (ages 10 to 16). Canadian schools were selected for this study using a weighted probability technique to ensure that the sample is representative of regional geography and key demographic features such as religion, community size, school size and language of instruction. Schools from each province and territory, as well as urban and rural locations, are represented. A total of 26,078 youth from 436 schools across the country participated in the 2009-10 HBSC survey. The Canadian HBSC was approved by the Queen's University General Research Ethics Board. Consent was obtained from the participating school boards, individual schools, parents and students. Student participation is voluntary. The HBSC includes 3 main components: 1) a questionnaire completed by students that asks about their health behaviours (such as physical activity and active transportation), lifestyle factors and demographics; 2) an administrator questionnaire distributed to each school principal that inquires about school demographics, policy, infrastructure and the school neighbourhood setting (completed for 411 of the 436 participating schools); and 3) geographic information systems (GIS) measures of built and social features in the school neighbourhoods.

Opportunities for Physical Activity at School Survey (OPASS; www.cfri.ca): The content of the 2011 OPASS is designed to explore the availability and composition of physical education programming at school, determine the availability and adequacy of facilities and opportunities for physical activity, explore the provision of extracurricular physical activities, examine policies related to physical activity at school, and describe the broader physical and social environments at school. The survey consists of a self-completed questionnaire that was mailed to a total of 8,000 Canadian schools. The survey was conducted by the CFLRI and funded through the Children's A-TEAM collaboration (Children's Activity Through Exchange and Measurement) being led by the Healthy Active Living and Obesity Research Group at the CHEO Research Institute.

Physical Activity Monitor (PAM; www.cfri.ca): The PAM is a telephone survey conducted by the CFLRI that tracks changes in physical activity patterns, factors influencing participation, and life circumstances in Canada. As such, it tracks outcome indicators of the efforts to increase physical activity among Canadians. To date, 17 waves of PAM have been completed, with theme content cycled in and out across planned periods.

Partners

The partners below have supported and helped circulate the 2015 Report Card in each province and territory across Canada:

Active Living Alliance for Canadians with a Disability
Alberta Centre for Active Living
Best Start Resource Centre – Health Nexus
BC Ministry of Health
Boys and Girls Clubs of Canada
British Columbia Recreation and Parks Association
Canadian Parks and Recreation Association
Canadian Parks Council
Canadian Society for Exercise Physiology
Child and Nature Alliance of Canada
Companies Committed to Kids
Department of Municipal and Community Affairs,
Government of the Northwest Territories
Division of Sport Recreation and Physical Activity
Department of Health and Wellness, Province of PEI
Ever Active Schools
Evergreen
Government of Alberta
Government of Nova Scotia
Green Communities Canada
Healthy Eating and Physical Activity Coalition of New Brunswick
KidActive
Kid Sport BC
NWT Recreation and Parks Association
Manitoba Children and Youth Opportunities
Manitoba in motion
Ontario Society of Physical Activity Promoters in Public Health
Ontario Physical Health and Education Association
Parachute Canada
Parks and Recreation Ontario
Physical Activity Coalition of Manitoba
Physical and Health Education Canada
Recreation and Parks Association of the Yukon
Recreation New Brunswick
Recreation Newfoundland and Labrador in partnership with
the Department of Seniors, Wellness and Social Development,
Government of Newfoundland
Recreation Nova Scotia
Recreation PEI
Réseau Accès Participation (Québec)
The Sandbox Project
Saskatchewan in motion
Sport and Recreation Division, Department of Community and
Government Services, Government of Nunavut
Sport Matters Group
True Sport Foundation
YMCA Canada
Yukon Government Sport and Recreation Branch
Vivo for Healthier Generations

References

- 1 Carson V, Ridgers ND, Howard BJ, Winkler EA, Healy GN, Owen N, Dunstan DW, Salmon J. Light-intensity physical activity and cardiometabolic biomarkers in US adolescents. *PLoS One*. 2013;8(8):e71417.
- 2 Carson V, Rinaldi RL, Torrance B, Maximova K, Ball GD, Majumdar SR, Plotnikoff RC, Veugelers P, Boulé NG, Wozny P, McCargar L, Downs S, Daymont C, Lewanczuk R, McGavock J. Vigorous physical activity and longitudinal associations with cardiometabolic risk factors in youth. *Int J Obes*. 2014;38(1):16-21.
- 3 Singh A, Uijtewilligen L, Twisk JWR, van Mechelen W, Chinapaw MJ. Physical activity and performance at school: a systematic review of the literature including a methodological quality assessment. *Arch Pediatr Adolesc Med*. 2012;166(1):49-55.
- 4 Rasberry CN, Lee SM, Robin L, Laris BA, Russell LA, Coyle KK, Nihiser AJ. The association between school-based physical activity, including physical education, and academic performance: a systematic review of the literature. *Prev Med*. 2011; 52(Suppl 1):S10-20.
- 5 Canadian Society for Exercise Physiology. Canadian Physical Activity Guidelines and Canadian Sedentary Behaviour Guidelines. Ottawa: Canadian Society for Exercise Physiology; 2014. URL: www.csep.ca/english/view.asp?x=949
- 6 Ekelund U, Luan J, Sherar LB, Esliger DW, Griew P, Cooper AR. Moderate to vigorous physical activity and sedentary time and cardiometabolic risk factors in children and adolescents. *JAMA*. 2012; 307:704-712.
- 7 Katzmarzyk PT, Janssen I. The economic costs associated with physical inactivity and obesity in Canada: an update. *Can J Appl Physiol*. 2004;29(1): 90-115.
- 8 Katzmarzyk P. The economic costs associated with physical inactivity and obesity in Ontario. *Health Fitness J Can*. 2011;4(4):31-40.
- 9 Janssen I. Health care costs of physical inactivity in Canadian adults. *Appl Physiol Nutr Metab*. 2012;37(4):803-806.
- 10 Vanderloo LM, Tucker P, Johnson AM and Holmes JD. Physical activity among preschoolers during indoor and outdoor childcare play periods. *Appl Physiol Nutr Metab*. 2013;38:1173-75.
- 11 Smith J, Nichols D, Biggerstaff K and DiMarco N. Assessment of physical activity levels of 3rd and 4th grade children using pedometers during physical education class. *J Res*. 2009;4:73-79.
- 12 Schaefer L, Plotnikoff RC, Majumdar SR, Mollard R, Woo M, Sadman R, Rinaldi RL, Boule N, Torrance B, Ball GD, Veugelers P, Wozny P, McCargar L, Downs S, Lewanczuk R, Gleddie D, McGavock J. Outdoor time is associated with physical activity, sedentary time, and cardiorespiratory fitness in youth. *J Pediatr*. 2014;165: 516-521.
- 13 Mitra R, Faulkner GEJ, Buliung RN, Stone MR. Do parental perceptions of the neighbourhood environment influence children's independent mobility? Evidence from Toronto, Canada. *Urban Stud*. 2014;51(16):3401-3419.
- 14 Copeland KA, Sherman SN, Kendeigh CA, Kalkwarf HJ, Saelens BE. Societal values and policies may curtail preschool children's physical activity in child care centers. *Pediatrics*. 2012;129(2):265-274.
- 15 Janssen I. Hyper-parenting is negatively associated with physical activity among 7-12 year olds. *Prev Med*. 2015;73:55-59. Note: a custom analysis by the author also informs the key finding.
- 16 Floyd MF, Bocarro JN, Smith WR, Baran PK, Moore RC, Cosco NG, Edwards MB, Suau LJ, Fang K. Park-based physical activity among children and adolescents. *Am J Prev Med*. 2011;41:258-265.
- 17 Hüttenmoser M. Children and their living surroundings: Empirical investigation into the significance of living surroundings for the everyday life and development of children. *Child Environ*. 1995;12: 403-413.
- 18 Burdette HL, Whitaker RC. Resurrecting free play in young children: looking beyond fitness and fatness to attention, affiliation, and affect. *Arch Pediatr Adolesc Med*. 2005;159: 46-50.
- 19 Little H, Wyver S. Outdoor play: does avoiding the risks reduce the benefits? *Aust J Early Child*. 2008;33: 33-40.
- 20 Engelen L, Bundy AC, Naughton G, Simpson JM, Bauman A, Ragen J, Baur L, Wyver S, Tranter P, Niehues A, Schiller W, Perry G, Jessup G, van der Ploeg HP. Increasing physical activity in young primary school children – it's child's play: A cluster randomised controlled trial. *Prev Med*. 2013;56:319-325.

- 21 Bundy AC, Luckett T, Tranter PJ, Naughton GA, Wyver SR, Ragen J, Spies G. The risk is that there is “no risk”: a simple, innovative intervention to increase children’s activity levels. *Int J Early Years Educ.* 2009;17:33-45.
- 22 Weinstein CS, Pinciotti P. Changing a schoolyard: Intentions, design decisions, and behavioral outcomes. *Environ Behav.* 1988;20: 345-371.
- 23 Hayward DG, Rothenberg M, Beasley RR. Children’s play and urban playground environments: A comparison of traditional, contemporary, and adventure playground types. *Environ Behav.* 1974;6:131-168.
- 24 Ball et al. Managing risk in play provision: Implementation guide. Play England: London, 2012. p. 120.
- 25 Sandseter et al. Children’s risky play from an evolutionary perspective: The anti-phobic effects of thrilling experiences. *Evol Psychol.* 2011;9:257-284.
- 26 Gray et al. What is the relationship between outdoor time and physical activity, sedentary behaviour, and physical fitness in children? A systematic review. *Int J Environ Res Public Health.* In press.
- 27 Brussoni et al. What is the relationship between risky outdoor play and health in children? A systematic review. *Int J Environ Res Public Health.* In press.
- 28 Cooper et al. Patterns of GPS measured time outdoors after school and objective physical activity in English children: the PEACH project. *Int J Behav Nutr Phys Act.* 2010;7:31.
- 29 Dunton et al. Physical and social contextual influences on children’s leisure-time physical activity: an ecological momentary assessment study. *J Phys Act Health.* 2011;8(Suppl. 1): 2011.
- 30 Klinker et al. Context-specific outdoor time and physical activity among school-children across gender and age: using accelerometers and GPS to advance methods. *Front Public Health.* 2014;2:20.
- 31 Raustorp et al. Accelerometer measured level of physical activity indoors and outdoors during preschool time in Sweden and the United States. *J Phys Act Health.* 2012;9:801-808.
- 32 Skala et al. Environmental characteristics and student physical activity in PE class: findings from two large urban areas of Texas. *J Phys Act Health.* 2012;9:481-491.
- 33 Wheeler et al. Greenspace and children’s physical activity: a GPS/GIS analysis of the PEACH project. *Prev Med.* 2010;51:148-152.
- 34 Andersen et al. Physical activity and clustered cardiovascular risk in children: a cross-sectional study (the European Youth Heart Study). *Lancet.* 2006;368:299-304.
- 35 Janssen I, LeBlanc AG. Systematic review of the health benefits of physical activity and fitness in school-aged children and youth. *Int J Behav Nutr Phys Act.* 2010;7:40.
- 36 Strong et al. Evidence-based physical activity for school-aged youth. *J Pediatr.* 2005;146:732-737.
- 37 Duncan et al. The effect of green exercise on blood pressure, heart rate and mood state in primary school children. *Int J Environ Res Public Health.* 2014;11:3678-3688.
- 38 Kemper et al. A fifteen-year longitudinal study in young adults on the relation of physical activity and fitness with the development of the bone mass: the Amsterdam Growth and Health Longitudinal Study. *Bone.* 2000;27:847-853.
- 39 Hind K, Burrows M. Weight-bearing exercise and bone mineral accrual in children and adolescents: a review of controlled trials. *Bone.* 2007;40:14-27.
- 40 Tremblay et al. Systematic review of sedentary behaviour and health indicators in school-aged children and youth. *Int J Behav Nutr Phys Act.* 2011;8:98.
- 41 Larouche R. The environmental and population health benefits of active transport: A review. In G. Liu (Ed.) *Greenhouse Gases – Emissions, Measurement and Management.* InTech: Rijeka, Croatia, 2012. pp. 413-40.
- 42 Friedman et al. Impact of changes in transportation and commuting behaviors during the 1996 Summer Olympic Games in Atlanta on air quality and childhood asthma. *JAMA.* 2001;285:897-905.
- 43 Dalley ML, Ruscoe J. The abduction of children by strangers in Canada: Nature and scope. Royal Canadian Mounted Police. 2003. URL: www.rcmp-grc.gc.ca/pubs/omc-ned/abd-rapt-eng.htm
- 44 Fuselli P, Yanchar NL. Preventing playground injuries. *Paediatr. Child Health.* 2012;17:328.
- 45 Canadian Institute for Health Information. National Trauma Registry Minimum Data Set, 1994-1995 to 2012-2013. URL: bit.ly/1F5FhwP
- 46 Rubie-Davies CM, Townsend MAR. Fractures in New Zealand elementary school settings. *J Sch Health.* 2007;77:36-40.
- 47 Nauta J et al. Injury risk during different physical activity behaviours in children: A systematic review with bias assessment. *Sport Med.* 2015;45:327-336.
- 48 Public Health Agency of Canada Child and youth injury in review, 2009 edition: Spotlight on consumer product safety. Public Health Agency of Canada: Ottawa, 2009.
- 49 Belechri et al. Sports injuries among children in six European Union countries. *Eur J Epidemiol.* 2001;17:1005-1012.
- 50 Sahai VS et al. Quantifying the iceberg effect for injury: using comprehensive community health data. *Can J Public Health.* 2005;96:328-332.
- 51 Howard et al. School playground surfacing and arm fractures in children: a cluster randomized trial comparing sand to wood chip surfaces. *PLoS Med.* 2009;6(12):e1000195.
- 52 Public Health Agency of Canada. Injury in Review, 2012 Edition: Spotlight on Road and Transport Safety. Public Health Agency of Canada: Ottawa, 2012.
- 53 Rothman et al. Motor vehicle-pedestrian collisions and walking to school: the role of the built environment. *Pediatrics.* 2014;133:776-784.
- 54 DiMaggio C, Li G. Effectiveness of a safe routes to school program in preventing school-aged pedestrian injury. *Pediatrics.* 2013;131:290-296.
- 55 Dombrowski et al. Protecting children from online sexual predators: technological, psychoeducational, and legal considerations. *Prof Psychol Res Proc.* 2004;35:65-73.
- 56 Mazowita B, Vézina M. Police-reported cybercrime in Canada 2012. Juristat Catalogue no. 85-002-X. Statistics Canada, 2014.
- 57 Litwiller BJ, Brausch AM. Cyber bullying and physical bullying in adolescent suicide: the role of violent behavior and substance use. *J Youth Adolesc.* 2013;42:675-684.
- 58 Browne KD, Hamilton-Giachritsis C. The influence of violent media on children and adolescents: a public-health approach. *Lancet.* 2005;365:702-10.
- 59 Borghese et al. Independent and combined associations of total sedentary time and television viewing time with food intake patterns of 9- to 11-year-old Canadian children. *Appl Physiol Nutr Metab.* 2014;39:937-943.
- 60 Spengler JD, Sexton K. Indoor air pollution: a public health perspective. *Science.* 1983;221:9-17.
- 61 Jones AP. Asthma and domestic air quality. *Soc Sci Med.* 1991;47:755-764.
- 62 DellaValle et al. Effects of ambient pollen concentrations on frequency and severity of asthma symptoms among asthmatic children. *Epidemiol.* 2012;23:55-63.
- 63 World Health Organization. Burden of disease from household air pollution for 2012. URL: www.who.int/phe/health_topics/outdoorair/databases/HAP_BoD_results_March2014.pdf
- 64 Lee et al. Effect of physical activity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy. *Lancet.* 2012;380:219-229.
- 65 Pahkala et al. Association of physical activity with vascular endothelial function and intima-media thickness. *Circulation.* 2011;124. 1956-1963.
- 66 Raitakari et al. Effects of persistent physical activity and inactivity on coronary risk factors in children and young adults: the Cardiovascular Risk in Young Finns Study. *Am J Epidemiol.* 1994;140:195-205.
- 67 Tuomiletho J et al. Prevention of type 2 diabetes mellitus by changes in lifestyle among subjects with impaired glucose tolerance. *N Engl J Med.* 2001;344:1343-1350.
- 68 Knowler et al. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *N Engl J Med.* 2002;346:393-403.
- 69 Mammen G, Faulkner G. Physical activity and the prevention of depression: a systematic review of prospective studies. *Am J Prev Med.* 2013;45:649-657.
- 70 Paffenbarger et al. Physical activity, all-cause mortality, and longevity of college alumni. *N Engl J Med.* 1986;314:605-623.

- 71 **Paffenbarger et al.** The association of changes in physical activity level and other lifestyle characteristics with mortality among men. *N Engl J Med.* 1993;328:538-545.
- 72 **U.S. Department of Health and Human Services.** Physical Activity Guidelines Advisory Committee Report, 2008. Washington, DC: U.S. Department of Health and Human Services, 2008.
- 73 **Biswas et al.** Sedentary time and its association with risk for disease incidence, mortality, and hospitalization in adults: a systematic review and meta-analysis. *Ann Intern Med.* 2015;162:123-132.
- 74 **Ginsburg KR.** The importance of play in promoting healthy child development and maintaining strong parent-child bonds. *Pediatrics.* 2007;119:182-191.
- 75 **Schiffrin et al.** Helping or hovering? The effects of helicopter parenting on college students' well-being. *J Child Fam Stud.* 2014;23:548-557.
- 76 **LeMoyné T, Buchanan T.** Does "hovering" matter? Helicopter parenting and its effect on well-being. *Sociological Spectrum.* 2011;31:399-418.
- 77 **Gester S.** Urban children's access to their neighborhoods: Changes over three generations. *Environ Behav.* 1991;23:70-85.
- 78 **Hillman et al.** One false move: A study of children's independent mobility. London: PSI Publishing; 1990.
- 79 **O'Brien et al.** Children's independent spatial mobility in the urban public realm. *Childhood.* 2001;7:257-277.
- 80 **Shaw et al.** Children's independent mobility: a comparative study in England and Germany (1971-2010). London: Policy Studies Institute; 2013.
- 81 **Kirby et al.** Parental and peer influences on physical activity among Scottish adolescents: a longitudinal study. *J Phys Act Health.* 2011;8:785-793.
- 82 **Page et al.** Independent mobility in relation to weekday and weekend physical activity in children aged 10-11 years: The PEACH Project. *Int J Behav Nutr Phys Act.* 2009;6:2.
- 83 **Page et al.** Independent mobility, perceptions of the built environment and children's participation in play, active travel and structured exercise and sport: the PEACH Project. *Int J Behav Nutr Phys Act.* 2010;7:17.
- 84 **Stone et al.** The freedom to explore: examining the influence of independent mobility on weekday, weekend and after-school physical activity behaviour in children living in urban and inner-suburban neighbourhoods of varying socioeconomic status. *Int J Behav Nutr Phys Act.* 2014;11:5.
- 85 **Schoeppe et al.** Associations between children's independent mobility and physical activity. *BMC Public Health.* 2014;14:91.
- 86 **Jones O.** True geography quickly forgotten, giving away to an adult-imagined universe. Approaching the otherness of childhood. *Child Geogr.* 2008;6:195-212.
- 87 **Aasen et al.** The outdoor environment as a site for children's participation, meaning-making and democratic learning: examples from Norwegian kindergartens. *Education.* 2009;37:5-13.
- 88 **Dymont J, O'Connell TS.** The impact of playground design on play choices and behaviors of pre-school children. *Child Geogr.* 2013;11:263-280.
- 89 **Mahidin AMM, Maulan, S.** Understanding children preferences of natural environment as a start for environmental sustainability. *Procedia - Soc Behav Sci.* 2012;38:324-333.
- 90 **Fjortoft I, Sageie J.** The natural environment as a playground for children: Landscape description and analyses of a natural playscape. *Landscape Urban Plan.* 2000;48:83-97.
- 91 **Luchs A, Fikus M.** A comparative study of active play on differently designed playgrounds. *J Adventure Educ Outdoor Learn.* 2013;13:206-222.
- 92 **Cloward Drown KK, Christensen KM.** Dramatic play affordances of natural and manufactured outdoor settings for preschool-aged children. *Children Youth Environ.* 2014;24:53-77.
- 93 **Dowdell et al.** Nature and its influence on children's outdoor play. *Aust J Outdoor Ed.* 2011;15(2):12.
- 94 **Reed et al.** A repeated measures experiment of green exercise to improve self-esteem in UK school children. *Plos ONE.* 2013;8:7.
- 95 **Herrington S, Stuttmann K.** Landscape interventions: New directions for the design of children's outdoor play environments. *Landscape Urban Plan.* 1998;42:191-205.
- 96 **Herrington S.** The received view of play and the subculture of infants. *Landsc J.* 1997;16:149-160.
- 97 **Veitch et al.** Where do children usually play? A qualitative study of parents' perceptions of influences on children's active free-play. *Health Place.* 2006;12:383-393.
- 98 **Brussoni et al.** Risky play and children's safety: Balancing priorities for optimal child development. *Int J Environ Res Public Health.* 2012;9:3134-3138.
- 99 **Prezza et al.** The influence of psychosocial and environmental factors on children's independent mobility and relationship to peer frequentation. *J Community Appl Soc Psychol.* 2001;11:435-450.
- 100 **Becker et al.** Physical activity, self-regulation, and early academic achievement in preschool children. *Early Educ Dev.* 2014;25:56-70.
- 101 **Kahn P, Kellert S.** Children and Nature: Psychological, Socio-cultural, and Evolutionary Investigations. Boston, MA: MIT Press, 2002.
- 102 **Bingley A, Milligan, C.** Climbing trees and building dens: Mental health and well-being in young adults and the long-term experience of childhood play experience. London, U.K.: Lancaster University, Institute for Health Research, 2004. URL: tinyurl.com/CCN-2013-R112E
- 103 **Greffrath et al.** Centre-based and expedition-based (wilderness) adventure experiential learning personal effectiveness: an explorative enquiry. *Leisure Studies.* 2011;30:345-364.
- 104 **Korpela et al.** Restorative experience, self-regulation, and children's special place preferences. *J Environ Psychol.* 2002;22:387-398.
- 105 **Sandseter.** Risky play and risk management in Norwegian preschools - A qualitative observational study. *Saf Sci Monit.* 2009;13:1-12.
- 106 **Mikkelsen MR, Christensen P.** Is children's independent mobility really independent? A study of children's mobility combining ethnography and GPS/mobile phone technologies. *Mobilities.* 2009;4:37-58.
- 107 **Lavrysen, A., Bertrands, E., Leyssen, L., Smets, L., Vanderspikken, A., De Graef, P.** Risky-play at school. Facilitating risk perception and competence in young children. *Eur Early Child Educ* 2015, in press.
- 108 **Ungar M.** Too safe for their own good. Toronto: McClelland & Stewart; 2007.
- 109 **Gray P.** The decline of play and the rise of psychopathology in children and adolescents. *Am J Play.* 2011;3:443-463.
- 110 **Twenge et al.** Birth cohort increases in psychopathology among young Americans, 1938-2007: A cross-temporal meta-analysis of the MMPI. *Clin Psychol Rev.* 2010;30:145-154.
- 111 **Twenge JM.** The age of anxiety? Birth cohort change in anxiety and neuroticism, 1952-1993. *J Pers Soc Psychol.* 2000;79:1007-1021.
- 112 **Kochanowski L, Carr V.** Nature playscapes as contexts for fostering self-determination. *Child Youth Environ.* 2014;24(2):146-67.
- 113 **McArdle et al.** Does a nurturing approach that uses an outdoor play environment build resilience in children from a challenging background? *J Adventure Ed Outdoor Learn.* 2013;13(3):238-254.
- 114 **Canning N.** 'Where's the bear? Over there!' - creative thinking and imagination in den making. *Early Child Dev Care.* 2013;183:1042-1053.
- 115 **Malone K, Rudner J.** Global perspectives on children's independent mobility: a socio-cultural comparison and theoretical discussion of children's lives in four countries in Asia and Africa. *Global Studies of Childhood.* 2011;1:243-259.
- 116 **Joshi et al.** Children's journey to school: spatial skills, knowledge and perceptions of the environment. *Br J Dev Psychol.* 1999;19:125-139.
- 117 **Rissotto A, Tonucci F.** Freedom of movement and environmental knowledge in elementary school children. *J Environ Psychol.* 2002;22:65-77.
- 118 **Bixler et al.** Environmental socialization: quantitative tests of the childhood play hypothesis. *Environ Behav.* 2002;34:795-818.
- 119 **Pacilli et al.** Children and the public realm: antecedents and consequences of independent mobility in a group of 11 - 13-year-old Italian children. *Child Geogr.* 2013;11:377-393.
- 120 **Gill T.** No fear: growing up in a risk averse society. London: Calouste Gulbenkian Foundation, 2007.

- 121 Chaput JP, Carson V, Gray CE, Tremblay MS. Importance of all movement behaviors in a 24 hour period for overall health. *Int J Environ Res Public Health*. 2014;11(12):12575-12581.
- 122 Active Healthy Kids Canada. Don't let this be the most physical activity our kids get after school. The 2011 Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth. Toronto: Active Healthy Kids Canada; 2011. URL: dvqdas9jty7g6.cloudfront.net/reportcard2011/ahkcreportcard20110429final.pdf
- 123 Canadian Fitness and Lifestyle Research Institute. 2011-2014 Kids CANPLAY. Bulletin 2: How many steps are sufficient for children and youth to be healthy? Ottawa: Canadian Fitness and Lifestyle Research Institute; 2015. URL: www.cfri.ca/document/bulletin-2-how-many-steps-are-sufficient-children-and-youth-be-healthy
- 124 Janssen I, Lévesque L, Xu F. Correlates of physical activity among First Nations children residing in First Nations communities in Canada. *Can J Public Health*. 2014;105(6):e412-7.
- 125 Booth VM, Rowlands AV, Dollman J. Physical activity temporal trends among children and adolescents. *J Sci Med Sport*. pii: S1440-2440(14)00113-3.
- 126 Canadian Fitness and Lifestyle Research Institute. 2014 Kids CANPLAY. Bulletin 1: Physical activity levels of children and youth. Ottawa: Canadian Fitness and Lifestyle Research Institute; 2014. URL: www.cfri.ca/document/bulletin-1-physical-activity-levels-children-and-youth
- 127 Active Healthy Kids Canada. 2013/14 annual report. Toronto: Active Healthy Kids Canada; 2014. URL: dvqdas9jty7g6.cloudfront.net/AHKC-AR-2014-FULLC-singles.pdf
- 128 Centers for Disease Control and Prevention. Injury prevention & control: traumatic brain injury. Atlanta: Centers for Disease Control and Prevention; 2014. URL: www.cdc.gov/concussion
- 129 Billellette J-M, Janz T. Injuries in Canada: insights from the Canadian Community Health Survey. Statistics Canada 2011; Catalogue no. 82-624-X. URL: www.statcan.gc.ca/pub/82-624-x/2011001/article/11506-eng.pdf
- 130 Ontario Neurotrauma Foundation. Guidelines for pediatric concussion. Toronto: Ontario Neurotrauma Foundation; 2014. URL: onf.org/documents/guidelines-for-pediatric-concussion
- 131 Kissick J. New concussion management guidelines: concussion question and answer document for physicians. Toronto: ThinkFirst Canada; 2010. URL: thinkfirst.ca/programs/concussion_resources.aspx
- 132 Kukawadia A, Pickett W, Janssen I. Time since immigration and ethnicity as predictors of physical activity among Canadian youth: a cross-sectional study. *PLoS One*. 2014;9(2):e89509.
- 133 Banerjee AT, Flora PK, Stone M, Faulkner G. Differences in the prevalence of overweight between 10–12-year-old South Asian and non-South Asian children in Toronto, Ontario: findings from Project BEAT. *J Racial Ethn Health Disparities*. 2014. DOI 10.1007/s40615-014-0062-y.
- 134 Canadian Fitness and Lifestyle Research Institute. 2014 Kids CANPLAY. Bulletin 3: participation in organized physical activity and sport. Ottawa: Canadian Fitness and Lifestyle Research Institute; 2015. URL: www.cfri.ca/document/bulletin-3-participation-organized-physical-activity-and-sport-0
- 135 Solutions Research Group Consultants Inc. Massive competition in pursuit of the \$5.7 billion Canadian youth sports market. URL: www.srgnet.com/2014/06/10/massive-competition-in-pursuit-of-the-5-7-billion-canadian-youth-sports-market
- 136 CIBC - KidSport™. CIBC - KidSport™ report: helping our kids get off the sidelines. Toronto: KidSport™; 2014. URL: www.kidsportcanada.ca/site/assets/files/10418/cibc_kidsport_report_july_2014_final.pdf
- 137 Perry A, Weiss J. Canadian children with severe developmental disabilities: a survey of health, well-being and social inclusion. Toronto: York University; 2014. URL: www.go4kids.ca/documents/FINALGO4KIDDSREPORTCARD.pdf
- 138 Active Healthy Kids Canada. Is Canada in the running? How Canada stacks up against 14 other countries on physical activity for children and youth. The 2014 Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth. Toronto: Active Healthy Kids Canada; 2014. URL: dvqdas9jty7g6.cloudfront.net/reportcard2014/AHKC_2014_ReportCard_ENG.pdf
- 139 Wijtzes AI, Bouthoorn SH, Jansen W, Franco OH, Hofman A, Jaddoe VW, Raat H. Sedentary behaviors, physical activity behaviors, and body fat in 6-year-old children: the generation R study. *Int J Behav Nutr Phys Act*. 2014;11:96.
- 140 Vella SA, Cliff DP, Okely AD, Scully ML, Morley BC. Associations between sports participation, adiposity and obesity-related health behaviors in Australian adolescents. *Int J Behav Nutr Phys Act*. 2013;10:113.
- 141 Kwan M, Bobko S, Faulkner G, Donnelly P, Cairney J. Sport participation and alcohol and illicit drug use in adolescents and young adults: a systematic review of longitudinal studies. *Addict Behav*. 2014;39(3):497-506.
- 142 Dohle S, Wansink B. Fit in 50 years: participation in high school sports best predicts one's physical activity after age 70. *BMC Public Health*. 2013;13:1100.
- 143 Crane J, Temple V. A systematic review of dropout from organized sport among children and youth. *Eur Phys Educ Rev*. 2015;21(1):114-131.
- 144 Institute for Canadian Citizenship. Playing Together: New Citizens, Sports & Belonging. Toronto: Institute for Canadian Citizenship; 2014. URL: www.icc-icc.ca/en/insights/Sports/PlayingTogether_FullR%20Online_Final.pdf
- 145 Canadian Broadcasting Corporation. RBC Sports Day in Canada. Toronto: Canadian Broadcasting Corporation; 2014. URL: sportsday.cbc.ca
- 146 Luciani A, White L, Berry T, Deshpande S, Latimer-Cheung A, Rhodes R, Spence J, Tremblay M, Faulkner G. Sports Day in Canada: examining benefits for community organizations. 2014 Global Summit on the Physical Activity of Children: Abstracts. *J Phys Activity Health*. 2014;11(Suppl 1):S169.
- 147 Canadian Fitness and Lifestyle Research Institute. 2010-2011 Physical Activity Monitor. Bulletin 3: Children's active and sedentary pursuits during the after school period. Ottawa: Canadian Fitness and Lifestyle Research Institute; 2013. URL: tinyurl.com/qddak9j
- 148 Janssen I. Active play: an important physical activity strategy in the fight against childhood obesity. *Can J Public Health*. 2014 Feb 4;105(1):e22-27.
- 149 Cleland V, Crawford D, Baur LA, Hume C, Timperio A, Salmon J. A prospective examination of children's time spent outdoors, objectively measured physical activity and overweight. *Int J Obes*. 2008;32:1685-1693.
- 150 Remmers T, Broeren SM, Renders CM, Hirasings RA, van GA, Raat H. A longitudinal study of children's outside play using family environment and perceived physical environment as predictors. *Int J Behav Nutr Phys Act*. 2014;11:76.
- 151 Hay J, Maximova K, Durksen A, Carson V, Rinaldi RL, Torrance B, Ball GD, Majumdar SR, Plotnikoff RC, Veugelers P, Boule NG, Wozny P, McCargar L, Downs S, Lewanczuk R, McGavock J. Physical activity intensity and cardiometabolic risk in youth. *Arch Pediatr Adolesc Med*. 2012;166: 1022-1029.
- 152 Lee H, Tamminen KA, Clark AM, Slater L, Spence JC, Holt NL. A meta-study of qualitative research examining determinants of children's independent active free play. *Int J Behav Nutr Phys Act*. 2015;12(1):5.
- 153 Pagels P, Raustorp A, De Leon AP, Martensson F, Kylin M, Boldemann C. A repeated measurement study investigating the impact of school outdoor environment upon physical activity across ages and seasons in Swedish second, fifth and eighth graders. *BMC Public Health*. 2014;14:803.
- 154 Bates B and Stone MR. Measures of outdoor play and independent mobility in children and youth: A methodological review. *J Sci Med Sport*. 2014 Jul 24. pii: S1440-2440(14)00132-7.
- 155 Clements R. An investigation of the status of outdoor play. *Contemporary Issues in Early Childhood*. 2004;5:68-80.
- 156 Christian H, Trapp G, Villanueva K, Zubrick SR, Koekemoer R and Giles-Corti B. Dog walking is associated with more outdoor play and independent mobility for children. *Prev Med*. 2014;67: 259-263.
- 157 Canadian Fitness and Lifestyle Research Institute. 2010-2011 Physical Activity Monitor. Bulletin 10: Transportation among children and youth. Ottawa: Canadian Fitness and Lifestyle Research Institute; 2014. URL: www.cfri.ca/document/bulletin-10-transportation-among-children-and-youth
- 158 Canadian Fitness and Lifestyle Research Institute. 2010 Physical Activity Monitor. Bulletin 12: Transportation among children and youth. Ottawa: Canadian Fitness and Lifestyle Research Institute; 2011. www.cfri.ca/document/bulletin-12-transportation-among-children-and-youth

- 159 Larouche R, Faulkner GE, Fortier M, Tremblay MS. Active transportation and adolescents' health: the Canadian Health Measures Survey. *Am J Prev Med*. 2014;46(5):507-515.
- 160 Pabayo R, Gauvin L, Barnett TA, Morency P, Nikiéma B, Séguin L. Understanding the determinants of active transportation to school among children: evidence of environmental injustice from the Quebec Longitudinal Study of Child Development. *Health Place*. 2012;18(2):163-171.
- 161 Grundy C, Steinbach R, Edwards P, Green J, Armstrong B, Wilkinson P. Effect of 20mph traffic speed zones on road injuries in London, 1986-2006: controlled interrupted time series analysis. *BMJ*. 2009;339:b4469.
- 162 Chriqui JF, Taber DR, Slater SJ, Turner L, Lowrey KM, Chaloupka FJ. The impact of state safe routes to school-related laws on active travel to school policies and practices in U.S. elementary schools. *Health Place*. 2012;18(1):8-15.
- 163 Larouche R, Barnes J, Tremblay MS. Too far to walk or bike? *Can J Public Health*. 2013;104(7):e487-489.
- 164 Schoeppe S, Duncan MJ, Badland H, Oliver M, Curtis C. Associations of children's independent mobility and active travel with physical activity, sedentary behaviour and weight status: a systematic review. *J Sci Med Sports*. 2013;16(4):312-319.
- 165 Larouche R, Saunders TJ, Faulkner GEJ, Colley RC, Tremblay MS. Associations between active school transport and physical activity, body composition and cardiovascular fitness: a systematic review of 68 studies. *J Phys Act Health*. 2014;11(1):206-227.
- 166 Morency C, Demers M. Active transportation as a way to increase physical activity among children. *Child: Care, Health and Development*. 2010;36(3):421-427.
- 167 Rainham DG, Bates CJ, Blanchard CM, Dummer TJ, Kirk SF, Shearer CL. Spatial classification of youth physical activity patterns. *Am J Prev Med*. 2012;42(5):e87-e96.
- 168 Cooper AR, Jago R, Southward EF, Page AS. Active travel and physical activity across the school transition: the PEACH project. *Med Sci Sports Exerc*. 2012;44(10):1890-1897.
- 169 Pabayo R, Maximova K, Spence JC, van der Ploeg K, Wu B, Veugelers PG. The importance of active transportation to and from school for daily physical activity among children. *Prev Med*. 2012;55(3):196-200.
- 170 Mammen G, Stone MR, Buliung R, Faulkner G. School travel planning in Canada: identifying child, family, and school characteristics associated with school travel mode shift from driving to active school travel. *J Transp Health*. 2014;1:288-294.
- 171 Ramanathan S, O'Brien C, Faulkner G, Stone M. Happiness in motion: emotions, well-being, and active school travel. *J Sch Health*. 2014;84:516-523.
- 172 Mitra R, Buliung R, Faulkner G. Spatial clustering and the temporal mobility of walking school trips in the Greater Toronto Area. *Health Place*. 2010;16:646-650.
- 173 Mammen G, Faulkner G, Buliung R, Lay J. Understanding the drive to escort: a cross-sectional analysis examining parental attitudes towards children's school travel and independent mobility. *BMC Public Health*. 2012;12:862.
- 174 Lewis P for the Groupe de recherche Ville et mobilité. Le transport actif et le système scolaire à Montréal et à Trois-Rivières : Analyse du système d'acteurs concernés par le transport actif des élèves des écoles primaires au Québec; 2008. URL: mapageweb.umontreal.ca/lewis/p/GVM%20Transport%20actif%20et%20syst%C3%A8me%20scolaire.pdf
- 175 Pabayo R, Gauvin L, Barnett TA. Longitudinal changes in active transportation to school in Canadian youth aged 6 through 16 years. *Pediatrics*. 2011;128(2):e404-e413.
- 176 Bookwala A, Elton-Marshall T, Leatherdale ST. Factors associated with active commuting among a nationally representative sample of Canadian youth. *Can J Public Health*. 2014;105(5):e348-e353.
- 177 Larouche R, Chaput J-P, Leduc G, Boyer C, Bélanger P, LeBlanc AG, Borghese MM, Tremblay MS. A cross-sectional examination of socio-demographic and school-level correlates of children's school travel mode in Ottawa, Canada. *BMC Public Health*. 2014;14:497.
- 178 Gray C, Larouche R, Barnes JD, Colley RC, Tremblay MS, Cowie Bonne J, Arthur M, Cameron C, Chaput J-P, Faulkner G, Janssen I, Kolen AM, Manske S, Salmon A, Spence JC, Timmons B. Are We Driving Our Kids to Unhealthy Habits? Results from the Active Healthy Kids Canada 2013 Report Card on Physical Activity for Children and Youth. *Int J Environ Res Public Health*. 2014;11(6):6009-6020.
- 179 Cutumisu N, Bélanger-Gravel A, Laferté M, Lagarde F, Lemay J-F, Gauvin L. Influence of area deprivation and perceived neighbourhood safety on active transport to school among urban Quebec preadolescents. *Can J Public Health*. 2014;105(5):e376-e382.
- 180 Mitra R. Independent mobility and mode choice for school transportation: a review and framework for future research. *Transport Reviews*. 2013;33(1):21-43.
- 181 The definition appears on the International Physical Literacy Association's homepage: www.physical-literacy.org.uk
- 182 Whitehead M. Physical literacy throughout the lifecourse. London: Routledge Taylor & Francis Group; 2010.
- 183 Lloyd M, Colley RC, Tremblay MS. Advancing the debate on 'fitness testing' for children: perhaps we're riding the wrong animal. *Pediatr Exerc Sci*. 2010;22(2):176-182.
- 184 Physical & Health Education Canada. Passport for Life. Ottawa: Physical & Health Education Canada; 2013. URL: www.passportforlife.ca
- 185 Canadian Sport for Life. Physical Literacy Assessment for Youth. Canadian Sport for Life; 2013. URL: play.physicalliteracy.ca
- 186 Healthy Active Living and Obesity Research Group. The Canadian Assessment of Physical Literacy. Ottawa: Healthy Active Living and Obesity Research Group; 2014. URL: www.capl-ecsfp.ca
- 187 Longmuir PE. Understanding the physical literacy journey of children: the Canadian Assessment of Physical Literacy. *Int Council Sport Sci and Phys Educ*. 2013;Bulletin 65:276-282.
- 188 Tremblay MS, Shields M, Laviolette M, Craig CL, Janssen I, Connor Gorber S. Fitness of Canadian children and youth: results from the 2007-2009 Canadian Health Measures Survey. *Health Rep*. 2010;21(1):7-20.
- 189 Lloyd M, Saunders TJ, Bremer E, Tremblay MS. Long-term importance of fundamental motor skills: a 20-year follow-up study. *Adapt Phys Activ Q*. 2014;31(1):67-78.
- 190 Canadian Fitness and Lifestyle Research Institute. 2012 Kids CANPLAY. Bulletin 8: Sitting time during the after school time period. Ottawa: Canadian Fitness and Lifestyle Research Institute; 2014. URL: www.cfri.ca/document/bulletin-8-sitting-time-during-after-school-time-period
- 191 Kaushal N, Rhodes RE. The home physical environment and its relationship with physical activity and sedentary behavior: A systematic review. *Prev Med*. 2014;67:221-237.
- 192 Ogunleye AA, Voss C, Sandercock GR. Delayed bedtime due to screen time in schoolchildren: Importance of area deprivation. *Pediatr Int*. 2015;57(1):137-142.
- 193 Adams SK, Daly JF, Williford DN. Adolescent sleep and cellular phone use: Recent trends and implications for research. *Health Services Insights*. 2013;6:99-103.
- 194 Saunders TJ, Chaput JP, Tremblay MS. Sedentary behaviour as an emerging risk factor for cardiometabolic diseases in children and youth. *Can J Diabetes*. 2014;38(1):53-61.
- 195 Carson V, Clark M, Berry T, Holt NL, Latimer-Cheung AE. A qualitative examination of the perceptions of parents on the Canadian Sedentary Behaviour Guidelines for the Early Years. *Int J Behav Nutr Phys Act*. 2014;11:65-5868-11-65.
- 196 Haapala EA, Poikkeus AM, Kukkonen-Harjula K, Tompuri T, Lintu N, Väistö J, Leppänen PH, Laaksonen DE, Lindi V, Lakka TA. Associations of physical activity and sedentary behavior with academic skills--a follow-up study among primary school children. *PLoS One*. 2014 Sep 10;9(9):e107031.
- 197 Marques A, Sallis JF, Martins J, Diniz J, Carreiro Da Costa F. Correlates of urban children's leisure-time physical activity and sedentary behaviors during school days. *Am J Hum Biol*. 2014;26(3):407-412.
- 198 Herman KM, Chaput JP, Sabiston CM, Mathieu ME, Tremblay A, Paradis G. Combined physical activity/sedentary behaviour associations with indices of adiposity in 8 to 10 year old children. *J Phys Act Health*. 2015;12(1):20-29.
- 199 Carson V, Stone M, Faulkner G. Patterns of sedentary behavior and weight status among children. *Pediatr Exerc Sci*. 2014;26(1):95-102.
- 200 Decelis A, Jago R, Fox KR. Physical activity, screen time and obesity status in a nationally representative sample of maltese youth with international comparisons. *BMC Public Health*. 2014;14:664.

- 201 Chaput JP, Leduc G, Boyer C, et al. Objectively measured physical activity, sedentary time and sleep duration: Independent and combined associations with adiposity in Canadian children. *Nutr Diabetes*. 2014;4:e117.
- 202 Gates M, Hanning RM, Martin ID, Gates A, Tsuji LJ. Body mass index of First Nations youth in Ontario, Canada: influence of sleep and screen time. *Rural Remote Health*. 2013;13(3):2498.
- 203 Herman KM, Sabiston CM, Mathieu ME, Tremblay A, Paradis G. Sedentary behavior in a cohort of 8- to 10-year-old children at elevated risk of obesity. *Prev Med*. 2014;60:115-120.
- 204 Saunders TJ, Tremblay MS, Mathieu ME, et al. Associations of sedentary behavior, sedentary bouts and breaks in sedentary time with cardiometabolic risk in children with a family history of obesity. *PLoS One*. 2013;8(11):e79143.
- 205 Canadian Fitness and Lifestyle Research Institute. 2010-2011 Physical Activity Monitor. Bulletin 5: Parental involvement in child's physical activity and sport. Ottawa: Canadian Fitness and Lifestyle Research Institute; 2013. URL: www.cflri.ca/document/bulletin-05-parental-involvement-child%20%20physical-activity-and-sport
- 206 Statistics Canada. Directly measured physical activity of Canadian adults, 2007 to 2011. Ottawa: Statistics Canada; 2013. URL: www.statcan.gc.ca/pub/82-625-x/2013001/article/11807-eng.htm
- 207 Leatherdale ST, Brown KS, Carson V, Childs RA, Dubin JA, Elliott SJ, Faulkner G, Hammond D, Manske S, Sabiston CM, Laxer RE, Bredin C, Thompson-Haile A. The COMPASS study: a longitudinal hierarchical research platform for evaluating natural experiments related to changes in school-level programs, policies and built environment resources. *BMC Public Health*. 2014 Apr 8;14:331.
- 208 Voss C, Sandercock GR. Associations between perceived parental physical activity and aerobic fitness in schoolchildren. *J Phys Act Health*. 2013;10(3):397-405.
- 209 Carlson JA, Sallis JF, Kerr J, Conway TL, Cain K, Frank LD, Saelens BE. Built environment characteristics and parent active transportation are associated with active travel to school in youth age 12-15. *Br J Sports Med*. 2014;48(22):1634-39.
- 210 Vander Ploeg KA, Kuhle S, Maximova K, McGavock J, Wu B, Veugelers PJ. The importance of parental beliefs and support for pedometer-measured physical activity on school days and weekend days among Canadian children. *BMC Public Health*. 2013;13:1132.
- 211 Atkin AJ, Corder K, Ekelund U, Wijndaele K, Griffin SJ, van Sluijs EM. Determinants of change in children's sedentary time. *PLoS One*. 2013;8(6):e67627.
- 212 Sawka KJ, McCormack GR1, Nettel-Aguirre A, Hawe P, Doyle-Baker PK. Friendship networks and physical activity and sedentary behavior among youth: a systematized review. *Int J Behav Nutr Phys Act*. 2013 Dec 1;10:130.
- 213 Canadian Fitness and Lifestyle Research Institute. 2010-2011 Physical Activity Monitor. Bulletin 12: Opportunities at school to be active. Ottawa: Canadian Fitness and Lifestyle Research Institute; 2014. URL: www.cflri.ca/document/bulletin-12-opportunities-school-be-active
- 214 The Learning Partnership. Active at school: Connecting the dots. Toronto: The Learning Partnership; 2014. URL: www.thelearningpartnership.ca/files/download/8baafade091181c
- 215 Pan-Canadian Public Health Network. Towards a healthier Canada - 2013 progress report on advancing the Federal/Provincial/Territorial Framework on Healthy Weights. Ottawa: Pan-Canadian Public Health Network; 2013. URL: www.phn-rsp.ca/thcprvcpsre-2013/index-eng.php
- 216 Canadian Fitness and Lifestyle Research Institute. 2011 Capacity Study. Bulletin 12: Policies related to physical activity. Ottawa: Canadian Fitness and Lifestyle Research Institute; 2012. URL: www.cflri.ca/document/bulletin-12-policies-related-physical-activity
- 217 People for Education. Mind the gap: inequality in Ontario's schools. Toronto: People for Education; 2013. URL: www.peopleforeducation.ca/wp-content/uploads/2013/05/annual-report-2013-WEB.pdf
- 218 Canadian Fitness and Lifestyle Research Institute. 2011 Capacity Study. Bulletin 1: Availability of large scale facilities supporting physical activity and sport. Ottawa: Canadian Fitness and Lifestyle Research Institute; 2012. URL: tinyurl.com/oqtw97f
- 219 Canadian Fitness and Lifestyle Research Institute. 2011 Capacity Study. Bulletin 3: Availability of amenities supporting physical activity and sport. Ottawa: Canadian Fitness and Lifestyle Research Institute; 2012. URL: www.cflri.ca/document/bulletin-03-availability-amenities-supporting-physical-activity-and-sport
- 220 Carlson JA, Sallis JF, Norman GJ, McKenzie TL, Kerr J, Arredondo EM, Madanat H, Mignano AM, Cain KL, Elder JP, Saelens BE. Elementary school practices and children's objectively measured physical activity during school. *Prev Med*. 2013;57(5):591-595.
- 221 Comte M, Hobin E, Manske S, Casey C, Griffith J, Leggett C, Veugelers P, Murnaghan D, McGavock J. Is the provision of physical education to senior years students associated with greater physical activity levels? Insight into a Province-Wide Policy. *J Phys Act Health*. 2014. [Epub ahead of print]
- 222 Jewett R, Sabiston CM, Brunet J, O'Loughlin EK, Scarapicchia T, O'Loughlin J. School sport participation during adolescence and mental health in early adulthood. *J Adolesc Health*. 2014;55(5):640-644.
- 223 Trans Canada Trail. Facts About the Trail. Montreal: Trans Canada Trail; 2014. URL: tctrail.ca/about-the-trail/facts-about-the-trail
- 224 Ding D, Sallis JF, Kerr J, Lee S, Rosenberg DE. Neighborhood environment and physical activity among youth: a review. *Am J Prev Med*. 2011;41(4):442-455.
- 225 Mecredy G, Pickett W, Janssen I. Street connectivity is negatively associated with physical activity in Canadian youth. *Int J Environ Res Public Health*. 2011;8:3333-3350.
- 226 Janssen I, Rosu A. Undeveloped green space and free-time physical activity in 11 to 13-year-old children. *Int J Behav Nutr Phys Act*. 2015;12:26.
- 227 Active Healthy Kids Canada. Are we driving our kids to unhealthy habits? The 2013 Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth. Toronto: Active Healthy Kids Canada; 2013. URL: dvqdas9jty7g6.cloudfront.net/reportcard2013/Active-Healthy-Kids-2013-Report-Card_en.pdf
- 228 Cutumisu N1, Bélanger-Gravel A, Laferté M, Lagarde F, Lemay JF, Gauvin L. Influence of area deprivation and perceived neighbourhood safety on active transport to school among urban Quebec preadolescents. *Can J Public Health*. 2014;105(5):e376-382.
- 229 Ogrodnik L. Child and youth victims of police-reported violent crime, 2008. Ottawa: Statistics Canada; 2010. URL: www.statcan.gc.ca/pub/85f0033m/85f0033m2010023-eng.pdf
- 230 Capaldi CA, Dopko RL and Zelenski JM. The relationship between nature connectedness and happiness: a meta-analysis. *Front Psychol*. 2014;5:976.
- 231 Diener E, Sandvik E, Seidlitz L and Diener M. The relationship between income and subjective well-being: Relative or absolute? *Soc Indic Res*. 1993;28:195-223.
- 232 Diener E, Gohm CL, Suh E and Oishi S. Similarity of the relations between marital status and subjective well-being across cultures. *J Cross Cult Psychol*. 2000;31:419-436.
- 233 Plaut VC, Adams G and Anderson SL. Does attractiveness buy happiness? "It depends on where you're from". *Personal Relationships*. 2009;16:619-630.
- 234 Tam KP. Concepts and measures related to connection to nature: Similarities and differences. *J Environ Psych*. 2013;34:64-78.
- 235 Canadian Fitness and Lifestyle Research Institute. 2010-2011 Physical Activity Monitor. Bulletin 14: Barriers to children's participation in physical activity. Ottawa: Canadian Fitness and Lifestyle Research Institute; 2014. URL: www.cflri.ca/document/bulletin-14-barriers-children%20%20participation-physical-activity
- 236 Provincial/Territorial Government Survey. For more information about the survey, email drfish@sympatico.ca.
- 237 World Health Organization. Director-general announces new initiative to end childhood obesity. Geneva: World Health Organization; 2014. URL: www.who.int/mediacentre/news/releases/2014/world-health-assembly67/en
- 238 World Health Organization. Commission on ending childhood obesity - about the work of the commission. Geneva: World Health Organization; 2014. URL: www.who.int/end-childhood-obesity/about/en