Physical activity plays an important role in facilitating learning and academic performance. Research indicates that parents, educators and policy-makers who are concerned that physical activity participation decreases study time, should in fact welcome time devoted to physical education, physical activity or sports. Even when the time is taken away from other subjects, physical education does not negatively affect academic achievement. In fact, increased physical fitness and active living opportunities have positive effects on academic performance. Studies within Canada and from across the globe indicate that physical activity, sport, and comprehensive school health approaches are related to enhanced learning and academic performance through:

• production of substances that protect delicate neurons in the brain
• improvements in memory, concentration, and attention span
• improvements in grades and test scores
• increased self-esteem, and self-image
• reduced misconduct behaviours at school
• increased feelings of school connectedness
• facilitating the inclusion of children with developmental or learning differences

The views expressed in the Report Card do not necessarily represent the views of the Public Health Agency of Canada.

For example, a comprehensive Ontario school health initiative including physical activity as a key element indicated a 36% increase in reading and a 24% increase in math scores over a two-year period. A study of over 5,000 students by the U.S. Centers for Disease Control and Prevention indicated that girls with the highest levels of physical education participation had higher math and reading scores. Another US study of over 12,000 students indicated that daily physical activity was associated with higher math and reading achievement, echoed by an Alberta study of 5,000, which showed that active living had positive results on school performance. Healthy bodies and healthy minds are what Canada needs to have a strong, thriving society!

Production of the Report Card has been made possible through financial support from the Public Health Agency of Canada and the following partners:

Active Healthy Kids Canada

2 Blooor Street East Suite #1804
Toronto, ON M4W 1A8
www.activehealthykids.ca

Visit our enhanced web site at activehealthykids.ca to access tools and materials that can help you further understand and share the 2009 Report Card findings, and its recommendations with others. Explore the complete in-depth analysis of the most current information in the detailed version of the Report Card.

Our interdisciplinary research team fully examines this information to determine grade assignments, considering available information on prevalence levels, international comparisons, trends over time, disparities, and newly emerging research and initiatives.

Active kids are fit to learn.
Active Healthy Kids Canada relies upon its strategic partners who play a critical role in the research, content development and communication of the Report Card:

*CHEO Research Institute*
Healthy Active Living and Obesity Research

*participACTION*

Production of the Report Card has been made possible through financial support from the Public Health Agency of Canada* and the following partners:

*The views expressed in the Report Card do not necessarily represent the views of the Public Health Agency of Canada.*
Network Partners

The following network partners have supported and facilitated the dissemination of the Report Card in each province and territory across Canada:

- British Columbia Parks and Recreation Association
- British Columbia Healthy Living Alliance
- Alberta Centre for Active Living
- Saskatchewan in motion
- Manitoba in motion
- Physical Activity Coalition of Manitoba
- Ontario Physical and Health Education Association
- Heart and Stroke Foundation Ontario
- Gestion Animation Loisir – Québec
- Healthy Eating and Physical Activity Coalition of New Brunswick
- Recreation Nova Scotia
- Recreation PEI
- Recreation Newfoundland and Labrador
- Sport Nunavut
- Northwest Territories Sport and Recreation Council
- Northwest Territories Recreation and Parks Association
- Recreation and Parks Association of the Yukon
- Joint Consortium on School Health
- Interprovincial/Territorial Sport and Recreation Council
- PHE Canada

A summary version of the Report Card is also available at www.activehealthykids.ca.

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Doug Willms  Canadian Research Institute for Social Policy / University of New Brunswick
Louis Wong  University of British Columbia
Wai-May Wong  Healthy Active Living and Obesity Research Group (HALO), Children’s Hospital of Eastern Ontario Research Institute
Active Healthy Kids Canada

strives to be a trusted source for “powering the movement to get kids moving” – a ‘go to’ source for knowledge, insight and understanding that influences thinking and action among issue stakeholders to help them build better programs, campaigns and policies that will in turn increase physical activity among children and youth.

Advancing knowledge is the cornerstone of the core business of Active Healthy Kids Canada, providing the evidence base for its communications and issue advocacy work. In an ongoing effort to achieve this mandate, this year Active Healthy Kids Canada releases its fifth annual Report Card on Physical Activity for Children and Youth. Since releasing the first Report Card in 2005, Active Healthy Kids Canada has been providing a comprehensive assessment of the current state of physical activity among Canadian children and youth.

In addition to providing a detailed synthesis of the best available evidence, the Report Card provides advice on how to “improve the grade.” Feedback gathered through a comprehensive set of consultation and evaluation processes suggests that the Report Card and its recommendations, including highlighting where we need to overcome data gaps, has been very successful in powering the movement to get kids moving.

On this occasion of the Report Card’s fifth anniversary, Active Healthy Kids Canada would like to thank its partners – funders, researchers, stakeholder groups, allies and supporters – for assisting in this important endeavour and for believing in the importance of physical activity in the preservation and enhancement of the health and well-being of our children and youth. We look forward to working with you on the release of future report cards, and more importantly on creating environments, opportunities, expectations and desires for healthy active lifestyles for all Canadian children and youth.
FOREWORD
Established in 1994, Active Healthy Kids Canada is a national organization with a passionate, informed voice providing direction to policy-makers and the public on how to increase, and effectively allocate, resources and attention toward physical activity for Canadian children and youth.

The 2009 Report Card on Physical Activity for Children and Youth marks the 5th annual overview of the many factors impacting the poor state of physical activity in this country. To overcome a societal problem of this magnitude, all levels of government, non-governmental organizations, researchers, corporations and foundations need to be engaged in a collaborative effort to improve the physical activity profile of the country’s future.

Inspiring the Nation to Engage All Children and Youth in Physical Activity
Our hope is that the findings in the Report Card will support effective program and message development, as well as enhanced policy creation and implementation, and will identify areas that require further work and action.

The Healthy Active Living and Obesity (HALO) Research Group in the Children’s Hospital of Eastern Ontario Research Institute, in partnership with Active Healthy Kids Canada, strives to consolidate the most up-to-date information to include in the Report Card each year. The information profiled is a unique combination of analyses from national data sets, the research literature and relevant reports from the physical activity sector. The information-gathering process is led by a national Research Work Group that is made up of experienced and dedicated researchers from across Canada. Their involvement provides us with access to relevant and timely data on the current state of physical activity in children and youth. Please see the Appendix for further details about the Report Card development process and the key data sources used.

ParticipACTION is the national voice of physical activity and sport participation in Canada. As strategic communications partner, ParticipACTION supports Active Healthy Kids Canada in the planning, coordination and dissemination of the Report Card and other evidence-informed communications to the public and across the sector. As a national not-for-profit organization, ParticipACTION works with its partners to inspire and support Canadians to move more. ParticipACTION envisions a society where Canadians are the most physically active on earth.
Those familiar with previous Report Cards will notice a re-organization of the topics covered in the 2009 version. In an attempt to clarify the relationships among the many influences and outcomes of physical activity, we have developed the above diagram. The first thing to note is the primary outcome: the physical activity levels of Canadian children and youth. The main source of information to assess physical activity levels comes from a Canadian Fitness and Lifestyle Research Institute (CFLRI) study that collects pedometer data and provides us with average number of steps taken per day and the proportion of children and youth meeting Canadian physical activity guidelines. It is important to remember that specific behaviours undertaken throughout the day have the ability to either increase or decrease the overall number of steps taken. Participation in organized sport and physical activity programs, active play and active transportation are all factors that contribute to the overall level. By contrast, screen time is generally a negative contributor to daily physical activity levels. The challenge with interpreting screen time is the emergence of active video gaming and its potential to shift the playing of video games, which historically has been exclusively sedentary, toward an activity that may potentially contribute to physical activity levels moving in a positive direction. This issue is discussed in more depth in the Screen Time section. All of these factors, including the physical activity levels, are graded in this year’s Report Card.

We are also particularly interested in exploring how well various sources of influence relate to the facilitation, promotion and encouragement of physical activity. These influences include school, family, peers, community and the built environment, and policy. Each source of influence is partitioned into key indicators that are graded. Indicators within each of these influences were chosen based on their potential to draw attention to key issues, and are a reflection of the data currently available for Canada. The individual characteristics (listed in left column of diagram) are explored as sources of variation and disparity of physical activity within each area of influence.
The greatest change from previous Report Cards is that we are no longer grading the broad outcomes of physical activity, i.e. healthy body weight, chronic disease prevention, mental health and academic achievement. The reason for this change is to direct more focus toward what the Report Card is really about – physical activity. Rather than grading the outcomes associated with physical activity, we are using them this year to provide a frame of reference for why we should care about physical activity in children and youth. That being said, we draw your attention to the fact that the arrow between physical activity and the outcomes goes both ways. This “chicken and egg” concept in reference to physical activity and distal outcomes is important to note and understand. In some instances, children are inactive and thus develop poor outcomes. Conversely, children may start off with a health condition that prevents or inhibits their participation in physical activity. Physical inactivity both exacerbates and results from the outcomes.

Another change from previous years is that this year we have not included an overall grade for the Report Card. The inclusion of an overall grade in the past has led to confusion in how the information was interpreted. Therefore, the overall or main focus this year is reflected in the physical activity grade, as this is the key focus of the Report Card each year. We encourage the reader to pay particular attention to the disparities in physical activity participation highlighted throughout the Report Card (e.g., among children with disabilities, children from low socio-economic status backgrounds, Aboriginal children and youth). Not only are these children and youth not receiving cardiovascular and musculoskeletal benefits from physical activity, they are also not accumulating the associated cognitive and behavioural benefits.

Information on children and youth with disabilities are highlighted throughout the 2009 Report Card in orange boxes.
Data Sources

Throughout the Report Card, the reader will come across many acronyms. The majority of these represent the primary research studies that have been used to inform the Report Card this year. A summary table of these is provided below; further details on each of these studies are provided in the Appendix.

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<thead>
<tr>
<th>Study Name</th>
<th>Acronym</th>
<th>Data Source</th>
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<td>A Longitudinal Study of the Environmental Determinants of Overweight Among Children: The SHAPEs of Things to Come</td>
<td>SHAPE-Preschool</td>
<td>Dr. John Spence, University of Alberta</td>
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<td>Beyond an Apple a Day</td>
<td>BAAD</td>
<td>Dr. John Spence, University of Alberta</td>
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<td>British Columbia Principals Survey</td>
<td>BC Principals Survey</td>
<td>Dr. Louise Masse, University of British Columbia</td>
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<td>Statistics Canada</td>
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<td>CPRA Survey 2009</td>
<td>Collaboration between CPRA and Active Healthy Kids Canada</td>
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<td>Canadian Physical Activity Levels Among Youth, 2005-2008</td>
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<td>Canadian Fitness and Lifestyle Research Institute (CFLRI)</td>
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<tr>
<td><strong>CFLRI Capacity Studies</strong></td>
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<td>• Working to Become Active: Increasing Physical Activity in the Canadian Workplace, 2008</td>
<td>2008 Workplace Survey</td>
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<td>• Opportunities for Physical Activity in Canadian Schools 2006</td>
<td>2006 Schools Survey</td>
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<td>• A Municipal Perspective on Opportunities for Physical Activity, 2004</td>
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<td><strong>CFLRI Physical Activity Monitor</strong></td>
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<td>• Physical Activity among Canadian Workers, 2006</td>
<td>2006 Survey of Workers</td>
<td>Canadian Fitness and Lifestyle Research Institute (CFLRI)</td>
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<td>• Encouraging Children to be Active, 2005</td>
<td>2005 Active Children Survey</td>
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<td>• Local Opportunities for Physical Activity and Sport, 2004</td>
<td>2004 Survey of Children's Opportunities</td>
<td></td>
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<tr>
<td>• Communicating the Benefits of Physical Activity for Children: A Parent’s Perspective 2003</td>
<td>2003 Communications Survey</td>
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<td>Study Name</td>
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<td>Data Source</td>
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<tr>
<td>General Social Survey</td>
<td>GSS</td>
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<td>Health Behaviour in School Aged Children</td>
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<td>World Health Organization</td>
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<td>National Longitudinal Survey of Children and Youth</td>
<td>NLSCY</td>
<td>Statistics Canada</td>
</tr>
<tr>
<td>Ontario Student Drug Use Surveys</td>
<td>OSDUHS</td>
<td>Centre for Addiction and Mental Health</td>
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<tr>
<td>Participation and Activity Limitation Survey</td>
<td>PALS</td>
<td>Statistics Canada</td>
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<td>Prince Edward Island Sport Strategy</td>
<td>PEI Sport Strategy</td>
<td>Dr. John Spence, University of Alberta</td>
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<td>Québec Child and Adolescent Health and Social Survey, 1999</td>
<td>QCAHS</td>
<td>Direction Santé Québec, Institut de la statistique du Québec, Ministère de l’éducation du Québec</td>
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<tr>
<td>School Health Action, Planning and Evaluation System</td>
<td>SHAPES</td>
<td>Dr. Stephen Manske and Dr. Scott Leatherdale, University of Waterloo</td>
</tr>
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<td>SHAPES School Health Environment Survey</td>
<td>SHAPES-SHES</td>
<td>Dr. Stephen Manske, University of Waterloo</td>
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<tr>
<td>Tell Them From Me</td>
<td>TTFM</td>
<td>Dr. Douglas Willms, University of New Brunswick</td>
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<tr>
<td>Web-Survey of Physical Activity and Nutrition</td>
<td>WEB-Span</td>
<td>Dr. John Spence, University of Alberta</td>
</tr>
<tr>
<td>Youth Risk Behaviour Survey</td>
<td>YRBSS</td>
<td>National Center for Chronic Disease Prevention and Health Promotion, Division of Adolescent and School Health</td>
</tr>
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</table>
# List of Acronyms and Symbols

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<thead>
<tr>
<th>Acronym</th>
<th>Full version</th>
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<tbody>
<tr>
<td>↑</td>
<td>Improvement</td>
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<tr>
<td>ADHD</td>
<td>Attention deficit hyperactivity disorder</td>
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<tr>
<td>APPLE Schools</td>
<td>Alberta Project Promoting active Living &amp; healthy Eating in Schools</td>
</tr>
<tr>
<td>AQ</td>
<td>Additional qualification</td>
</tr>
<tr>
<td>BMI</td>
<td>Body mass index</td>
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<tr>
<td>CFLRI</td>
<td>Canadian Fitness and Lifestyle Research Institute</td>
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<tr>
<td>CHEO</td>
<td>Children’s Hospital of Eastern Ontario</td>
</tr>
<tr>
<td>CHMS</td>
<td>Canadian Health Measures Survey</td>
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<tr>
<td>CIHR</td>
<td>Canadian Institutes of Health Research</td>
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<tr>
<td>CMA</td>
<td>Census Metropolitan Areas</td>
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<tr>
<td>CPRA</td>
<td>Canadian Parks and Recreation Association</td>
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<tr>
<td>CPS</td>
<td>Canadian Pediatric Society</td>
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<td>CS4L</td>
<td>Canadian Sport for Life</td>
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<tr>
<td>CVD</td>
<td>Cardiovascular disease</td>
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<tr>
<td>DPA</td>
<td>Daily physical activity</td>
</tr>
<tr>
<td>EQAO</td>
<td>Education Quality and Accountability Office</td>
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<tr>
<td>EYHS</td>
<td>European Youth Heart Study</td>
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<tr>
<td>HALO</td>
<td>Healthy Active Living and Obesity Research Group</td>
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<tr>
<td>INC</td>
<td>Incomplete</td>
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<tr>
<td>JCSH</td>
<td>Joint Consortium for School Health</td>
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<tr>
<td>LTAD</td>
<td>Long-term athlete development</td>
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<tr>
<td>MVPA</td>
<td>Moderate to vigorous physical activity</td>
</tr>
<tr>
<td>Acronym</td>
<td>Full version</td>
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<tr>
<td>NGO</td>
<td>Non-government organization</td>
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<tr>
<td>NHANES</td>
<td>National Health and Nutrition Examination Survey (United States)</td>
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<tr>
<td>OECD</td>
<td>Organization for Economic Co-Operation and Development</td>
</tr>
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<td>PALS</td>
<td>Participation and Activity Limitation Survey</td>
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<tr>
<td>PE</td>
<td>Physical education</td>
</tr>
<tr>
<td>PHAC</td>
<td>Public Health Agency of Canada</td>
</tr>
<tr>
<td>QDPE</td>
<td>Quality daily physical education</td>
</tr>
<tr>
<td>REAL Kids</td>
<td>Raising healthy Eating and Active Living Kids in Alberta</td>
</tr>
<tr>
<td>RWG</td>
<td>Research Working Group</td>
</tr>
<tr>
<td>SES</td>
<td>Socio-economic status</td>
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<tr>
<td>SSHRC</td>
<td>Social Sciences and Humanities Research Council</td>
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<tr>
<td>TAAG</td>
<td>Trial for Activity in Adolescent Girls</td>
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<tr>
<td>T2D</td>
<td>Type 2 diabetes</td>
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<tr>
<td>WHO</td>
<td>World Health Organization</td>
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</tbody>
</table>
Possible mechanisms by which physical activity improves academic performance

- Improvements in cognitive function (memory, concentration etc.)
- Neurogenesis
- Improved cerebral blood flow
- Enhanced neurotransmitter release and function
- Increased self-esteem, self-confidence & self-image
- Increased attention span via increased adrenalin
- Reduced misconduct behaviours at school
- Production of substances that protect delicate neurons from free radicals and oxidants
- Increased feelings of school connectedness
- Increased ability to relax

In an effort to increase students’ academic performance, many schools are choosing to reduce physical education (PE) requirements and even the time allocated for recess. However, no empirical evidence has suggested that academic performance is hindered in any way by regular participation in PE and physical activity. In fact, the majority of empirical evidence suggests the opposite is true – that academic performance is improved by engagement in regular physical activity.
Several mechanisms by which physical activity affects academic performance

A thorough review of the potential mechanisms by which physical activity and exercise improve academic performance is beyond the scope of the Report Card. Essentially, the association is mediated through improvements in cognitive or behavioural function. In animal models, physical activity enhances memory and learning, promotes the generation of new nerve cells in the brain (neurogenesis) and protects the nervous system from injury and disease. In clinical studies, exercise increases brain volume in areas implicated in executive processing, improves cognition in children with cerebral palsy and enhances phonemic skills in children with reading difficulties. It is also possible that the link between physical activity and academic performance is indirect and via improvements in self-esteem and/or classroom behaviour and attention span.

Re-allocating time from academic subjects to physical education does not harm grades

A thorough review of this topic area led a group of Canadian researchers to conclude that school-based physical activity, (PE instruction, free play or school sport) could “become a consistent component of physical activity to meet current guidelines for children and adolescents without impairing academic performance, even if curricular time for so-called academic subjects is curtailed.” Such findings are not new in Canada. A study completed in Quebec in the 1970s found that students provided with 5 hours of PE per week had a higher academic performance than their control counterparts who received only 40 minutes per week. Recently, researchers in British Columbia observed that the academic scores of students receiving more physical activity instruction per week, and therefore less academic time, remain unchanged.

In fact, these data demonstrated a trend toward enhanced academic performance in the intervention group despite a reduction in academic subject curricular time. In Ontario, an examination of the effect of a comprehensive school health model on academic performance showed that increased focus on students’ health in schools led to positive changes in their academic performance, as measured by Education Quality and Accountability Office (EQAO) test scores.

Research studies from around the world are observing the same trends. In California, a group of students in grades 5 and 6 were taught PE either by staff trained in PE, a trained homeroom teacher or a regular classroom teacher. Those taught by the staff trained in PE spent more time being active, had greater improvements in fitness and had smaller declines in academic performance compared to the other two groups who spent more time in academic instruction. Similarly, when 1.25 hours per day of endurance fitness training was added to the daily curriculum of a group of young Australian students, math and reading scores were not adversely affected by a substantial reallocation of curricular time in favour of PE. A follow-up study in the same population two years later revealed that the academic benefits persisted. Finally, an American study observed that Grade 6 students who received 55 minutes more of daily PE performed equally well in math, science and English when compared to a group that spent those 55 minutes in academic classrooms. The U.S. National Longitudinal Study of Adolescent Health showed that adolescents who were active in school were more likely to have high grades, even after adjustment for socio-economic status. A gender difference emerged in younger children (kindergarten to Grade 5) whereby higher amounts of PE were associated with academic benefit in girls; no such trend emerged in boys.
Physical activity and fitness are positively associated with academic performance

In addition to the findings on PE and academic performance, there is research to suggest that physical activity and fitness are also positively related to academic performance. For example, one study found that adolescents who reported higher levels of daily exercise also reported having higher grades. Academic performance has also been positively related to directly measured physical fitness scores in children. In addition, a meta-analysis has found a positive relation between physical activity and cognitive performance (e.g., perceptual skills, intelligence quotient, achievement, verbal tests, mathematics, developmental level/academic readiness) in school-aged children.

Being sedentary is associated with low academic performance in children

Sedentary time spent in front of screens is increasingly pervasive in the lives of children and youth. A comprehensive analysis of the media’s impact on children’s health, completed in November 2008, provides some critical insights into how being inactive might be impacting academic performance. Thirty-one studies evaluated media and academic performance, and 65% reported a significant association between increased media exposure and poor academic outcomes. Of the 26 studies that examined the effect of watching TV, 62% reported a strong link between greater media exposure and lower academic performance. Interestingly, the likelihood of earning a bachelor’s degree (or higher) by age 26 decreased as the mean hours of TV per weekday increased between the ages of 5 and 15 years (Figure 1).

Conclusions

- There is now a substantial evidence base from Canada and around the world to show that participation in PE and physical activity at school does not hinder academic performance. By contrast, there is reason to suggest that physical activity can lead to improvements in academic performance.

![Figure 1: The impact of watching TV during childhood and adolescence on the likelihood of earning a bachelor’s degree or higher by age 26.](image)
This summary of current knowledge on the link between physical activity and academic performance should negate any rationale proposed to limit PE and physical activity programs in an attempt to improve academic outcomes. Parents, teachers and policy-makers concerned about decreases in study time may be “better advised to question the time their children spend on watching TV and playing computer games rather than the time that they devote to PE, physical activity or sports in school.”

Adolescents who reported higher levels of daily exercise also reported having higher grades.
Healthy body weight

The prevalence of pediatric obesity has increased in Canada to such an extent in the past 10 to 15 years that it now represents the most common lifestyle-related disease affecting children and youth. Statistics Canada estimates that 26% of our children and youth aged 2 to 17 are overweight or obese. Aside from the physiological, psychological and sociological issues, the rising childhood obesity rate is likely to overwhelm even well-resourced healthcare systems, given that these children are at increased risk of developing obesity-related diseases in adulthood.

Modifying physical activity is an integral component of achieving and maintaining a healthy body weight. However, the benefits of physical activity are too often presented solely in the context of body weight regulation. Children and youth should be engaging in physical activity because it is intrinsically fun, feels good, is part of normal growth and development, prevents disease and promotes health. It is important that we stress to children and youth that there are many benefits to being physically active beyond just a healthy body weight.

Physical health and chronic disease prevention

Childhood obesity is associated with an increased risk for metabolic, cardiovascular, respiratory, gastrointestinal, orthopedic and psychological co-morbidities. Chronic diseases such as type 2 diabetes (T2D) and cardiovascular disease (CVD) have traditionally been viewed as adult diseases. However, it is now clear that the risk factors for these diseases (e.g. high blood pressure, low HDL-cholesterol, high triglycerides and insulin resistance) can also develop early on in life. Specifically, there is now evidence that childhood obesity is an independent risk factor for the development of CVD and premature mortality in the adult years.

Physical inactivity in children and youth has been directly linked to hypertension, metabolic syndrome, blood pressure, T2D and CVD risk factors. Using data on youth aged 8 to 17 years collected from the National Health and Nutrition Examination Survey (NHANES), researchers were able to demonstrate that increases in directly measured total physical activity and moderate to vigorous physical activity (MVPA) were associated with decreases in blood pressure. On a similar positive note, researchers in Europe found that even small increases in physical activity can have dramatic effects on the health of children. A European study found that an increase in daily moderate-intensity physical activity of only 10-20% was associated with a 33% lower risk of being categorized with metabolic syndrome.

Figure 2: Odds ratio for hypertension according to minutes of MVPA per day (Adapted from Mark and Janssen, 2008).
Screen time, a proxy indicator of overall inactivity and sedentary behaviour, has been associated with reductions in physical health. Canadian researchers found that independent of physical activity level, higher daily screen time hours was associated with an increased likelihood of having metabolic syndrome. More notably, the negative impacts of screen time go beyond metabolic syndrome. A systematic review was recently published on the effects of all types of media, from television to magazines and music, on different health outcomes including childhood obesity, tobacco use and sexual behaviour, and it showed startling results. Out of the 173 studies reviewed, the researchers found very few studies that demonstrated a positive association between consumption of media and health, with 80% of the studies concluding that an increase in media exposure is associated with negative health outcomes.
## Outcomes of Physical Activity Participation

### Academic Performance
- Time allocated for physical education does not negatively affect academic achievement, even when the time is taken away from other subjects.6-9
- Physical fitness and active living have positive effects on academic performance, including achievement in math tests and reading, academic grades, perceptual skills, intelligence quotient and academic readiness.16-20
- In animal models, physical activity has been found to enhance memory and learning, cause new brain cell growth and release chemicals involved in learning.2
- Physical activity may help academic achievement by improving self-esteem, attention span and classroom behaviour.3,4

### Healthy Body Weight
- Compared to 40 other developed countries, Canada ranks 5th highest in the prevalence of overweight and obesity in youth (HBSC 2005-2006).
- Our most recent national surveillance data indicate that 26% of Canadian children and adolescents are overweight or obese.24

#### Urban versus rural
- The prevalence of overweight and obesity in Canadian adolescents is higher in rural areas.46

#### Socio-economic status
- In low-income communities in Ontario, there is a high prevalence of overweight in young children (junior kindergarten), which persists into childhood (Grade 3).45

### Aboriginal
- The prevalence of obesity is higher among Canadian Aboriginal children and youth.46

#### Disabilities
- The prevalence of obesity is higher in individuals with intellectual disabilities.47-52
- Research suggests that deaf Canadians are at a higher risk of becoming obese and being physically inactive.53

### Physical Health
- The likelihood of developing hypertension in children decreases with increasing amounts of moderate to vigorous physical activity.29
- Small increases in daily moderate-intensity physical activity can lower the risk of metabolic syndrome.34
- Physical activity plays a role in the prevention and risk management for type 2 diabetes, cardiovascular disease and metabolic syndrome in children and youth.30,31,32,33,54
- Screen time is associated with an increased likelihood of metabolic syndrome independent of physical activity for children and youth.36
- Media exposure is associated with numerous negative health outcomes.21

#### Aboriginal
- A study of Cree children found that more than half of the sample had central adiposity, a component of metabolic syndrome, and that physical activity was negatively correlated with central adiposity.55

#### Disabilities
- Canadian children with intellectual disabilities have lower cardiovascular fitness than Canadian children with typical development.31,56
- Canadian children with activity-limiting conditions visit health professionals more often.57

### Mental Health
- Mental fitness is higher in students engaged in physical activity at school (SHAPES).
- Mental fitness is lower in students who accumulate higher levels of screen time (SHAPES).
- Childhood participation in organized sports is associated with positive psychosocial outcomes.44
- Sport participation is associated with decreased anxiety in shy children.58
- Physical activity is associated with decreased susceptibility to smoking among youth.43
- Active living is positively associated with self-esteem, whereas sedentary behaviour is negatively associated with self-esteem.40
- Physical inactivity is associated with emotional and behavioural problems in adolescents.29
Mental health

The benefits of physical activity in the prevention of chronic disease are becoming increasingly well known, yet several important emotional and psychosocial benefits of regular physical activity have received less attention. Shockingly, recent evidence found that obese children and adolescents, who we know tend to have lower levels of physical activity, report having a health-related quality of life comparable to children and adolescents who have been diagnosed with cancer and are undergoing chemotherapy treatment.38

Physical activity impacts upon numerous mental health outcomes including anxiety, depression and rule-breaking behaviour.39 Data on children in Alberta, British Columbia and Ontario suggest that physical activity improves mental fitness, whereas screen time has a negative effect (Figures 3 & 4) (SHAPES).

Mental fitness is defined as the personal state of psychological wellness that reflects an individual’s self-perceptions regarding the satisfaction of three basic psychological needs: relatedness, competency and autonomy (SHAPES).

“Self-esteem is the value we place on ourself,”39 and is important for children and youth. It is postulated that high self-esteem may actually protect children and youth against mental health issues while contributing to personality, social and cognitive development.40,41 The majority of findings from a recent systematic review indicate that exercise improves self-esteem in children and youth.42 Similarly, Canadian researchers found that sedentary behaviour was negatively associated with self-esteem, whereas active living had positive associations.40 Finally, risk-taking behaviour (e.g. susceptibility to smoking) has also been linked to both low physical activity participation and high levels of screen time.43

Figure 3: Mental fitness of children who participate in school physical activity presented by proportion of sample (%) demonstrating low, moderate or high mental fitness (Source: SHAPES).

Figure 4: A comparison of the mental fitness of children based on screen time use (high, medium, low) by proportion of sample (%) demonstrating low, moderate or high mental fitness (Source: SHAPES).
## Indicators Grade Trend

### Physical Activity Levels

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Grade</th>
<th>Trend</th>
<th>Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Activity Levels</td>
<td>F</td>
<td>↑</td>
<td>A long way to go… Objectively measured data indicate that 87% of children and youth are not meeting Canada’s physical activity guidelines of 90 minutes of physical activity a day. Moving on up? The proportion of children and youth meeting the guidelines has increased from 9% in 2005/2006 to 13% in 2007/2008.</td>
</tr>
</tbody>
</table>

### Screen Time

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Grade</th>
<th>Trend</th>
<th>Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screen Time</td>
<td>F</td>
<td></td>
<td>Current national data indicate that only 10% of Canadian youth are meeting the guideline for screen time of less than 2 hours per day, and many get close to 6 hours per day. However, new regional surveys show positive findings, moving to levels closer to the guideline. The increase in active gaming may help to transition screen time from being strictly a sedentary activity.</td>
</tr>
</tbody>
</table>

### Organized Sport and Physical Activity Participation

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Grade</th>
<th>Trend</th>
<th>Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organized Sport and Physical Activity Participation</td>
<td>C</td>
<td></td>
<td>Children from the lowest income level are 3 times more likely to never have participated in organized activities and sports, compared to those in the highest income level.</td>
</tr>
</tbody>
</table>

### Active Play

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Grade</th>
<th>Trend</th>
<th>Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Play</td>
<td>INC</td>
<td></td>
<td>There are no comprehensive and nationally representative data to adequately assess this indicator. However, only 50% of young children indicate participating in unorganized sport. Regional information shows one-third of youth indicate doing no physical activity as part of their free time, and 60% of disabled youth report that they seldom or never play games with friends in their free time.</td>
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</table>

### Active Transportation

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Grade</th>
<th>Trend</th>
<th>Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Transportation</td>
<td>D</td>
<td></td>
<td>Although nearly two-thirds of Canadian families indicate that they live within a reasonable distance to walk or cycle to school, just over one-third of children report having walked to school, and 80% report never having cycled to school, according to parents’ reports.</td>
</tr>
</tbody>
</table>
The core focus of the Report Card is the Physical Activity Level of Canadian children and youth. Beyond this broad picture, it is important to consider that other factors may increase or decrease this overall level. Sport Participation, Active Transportation and Active Play are three positive contributors, while Screen Time is, for the most part, a negative contributor.
This section will outline what we currently know about the physical activity and inactivity levels of children and youth in Canada. At all times, we strive to report quality data that are as recent as possible.

The Canadian Fitness and Lifestyle Research Institute’s Canadian Physical Activity Levels Among Youth (CANPLAY) Study measures physical activity levels of children and youth objectively, using pedometers to measure number of steps taken daily. As it is the only objectively measured physical activity data currently available on children and youth in Canada, these data are critical to providing robust information about the state of physical inactivity in this country. We can now report on 3 consecutive years from this study, which gives us an indication of any progress over time (Figures 5 & 6). The importance of these data became particularly evident in May 2008 when they were reported to the Federal-Provincial-Territorial Ministers responsible for Sport, Physical Activity and Recreation.

Using the CANPLAY data as a baseline, the Ministers set the following first-ever national physical activity targets for children and youth aged 5 to 19 years:

- by 2015, to increase by seven percentage points the proportion of children and youth who participate in 90 minutes of moderate to vigorous physical activity over and above activities of daily living
- by 2015, to increase from 11,500 steps to 14,500 steps per day the average number of steps taken by all children and youth, which is equivalent to an increase of 30 minutes of physical activity per day.

The Deputy Ministers for each province and territory have been meeting and working collectively to establish key priorities and strategies to address these goals, and will present their plan to the Ministers in August of 2009.

Overall, the data show that the physical activity levels of Canadian children and youth are still far too low. However, there is some indication that progress might finally be on the horizon. **Screen Time** values are still high, but two surveys show some positive signs toward lower levels. **Organized Sport and Physical Activity Participation** is an area where Canada shows fairly strong participation rates. However, the presence of disparities in sport participation is concerning and tells us we still have a lot of work to do. **Active Transportation** rates continue to be low, but the research literature is building in this area and will soon be able to provide practical suggestions on how to overcome barriers to using active transportation. **Active Play** continues to be an area where we lack information; however, there is increasing momentum around understanding this important component of healthy development in children and youth.
Figure 5: The mean number of steps accumulated per day from 2005 to 2008 in Canadian children and youth (Source: CFLRI CANPLAY).

Figure 6: The proportion of Canadian children and youth meeting Canadian physical activity guidelines from 2005 to 2008 (Source: CFLRI CANPLAY).
Main Findings

- Most self-reported physical activity data continue to disagree with objectively measured data.69,70

- According to parental report, 42% of preschool-aged children surveyed in Edmonton accumulate 90 minutes of physical activity per day (SHAPE-Preschool).

- 13% of Grade 10 girls and 27% of Grade 10 boys reported that they were “physically active” for 60 minutes every day (2005-2006 HBSC).

- 51% of a nationally representative sample of Canadian youth aged 12 to 17 were classified as “active” in their leisure time based on the total daily energy expenditure values (kcal/kg/day) calculated from a wide range of reported daily activities (CCHS 2007). This is equivalent to 60 minutes of daily walking.

- 55% of children in grades 5-8 from Ontario, British Columbia and Alberta were classified as “active” based on the total daily energy expenditure values (kcal/kg/day) calculated from a wide range of reported daily activities (SHAPES).

- 42% of youth in the 2008-2009 TTFM Survey reported that they accumulate at least 90 minute of physical activity every day.

- Canada ranks 23rd out of 40 developed countries in the proportion of youth accumulating more than 2 hours or more per day of screen time, that is, Canada is among the upper half of countries with the highest proportion of youth accumulating excessive screen time (2005-2006 HBSC).

- There has been a steady increase in the percentage of children aged 4 to 5 years participating in organized sports at least once per week. However, the overall rate is still hovering around 15% (NLSCY 1994-2005).

- There has been a decline in sports participation in youth aged 15 to 18 years between 1992 and 2005, from 77% to 59% (GSS, Statistics Canada).61

- In 2000-2001, 86% of Canadian children and youth aged 6 to 17 years reported having taken part in at least 1 extracurricular activity during the previous year.62

- 50% of children aged 4 to 5 years participate in unorganized sport once per week. This trend decreased between the late 1990s and 2000; however, it appears to have rebounded in 2002-2003 and 2004-2005 (NLSCY 1994-2005).
Evidence of Disparities

- Both objectively measured and self-reported data show that boys are more active than girls.
- Both objectively measured and self-reported data show that younger children are more active than older youth.
- Various data sources show that children in lower socio-economic circumstances experience lower levels of physical activity and higher levels of inactivity.
- There is strong evidence that children with disabilities are less active than children with typical development.63-69
- 40% of Canadian youth with physical disabilities spend more than 4 hours/day watching TV.63
- Approximately half of children with disabilities who participated in of the 2006 Participation and Activity Limitation Survey (PALS) took part in organized sports activities (with a coach or instructor) outside of school hours.
- The number of athletes participating in Special Olympics Canada initiatives has tripled in the past 20 years.
- 60% of children with disabilities report that they seldom or never play games with friends.63
Physical Activity Levels
Grade: F ↑

Background, Reflections and Rationale for Grade

In 2007, the grade for physical activity levels dropped because objectively measured data were available for the first time and the levels observed were far more concerning than any previously presented self-report data. In 2009, we can now reflect back on 3 cycles (2005-2006, 2006-2007, 2007-2008) of the CFLRI CANPLAY data collection, and the findings show preliminary signs of positive change. While the difference in step count information from the first to second year was not statistically significant, the difference between the first and third years was ([Figures 5 & 6](#)). This change translates into an average increase of approximately 5 to 6 minutes worth of physical activity per child. Although this is only a modest change, it is encouraging to note that the change appears to be moving in the right direction, albeit slowly. Given that the proportion of youth meeting the guidelines is still very low (13%), a grade of F remains. However, this year we have added an upward arrow to reflect that progress may be starting. The CFLRI will continue to monitor the situation in the future, but it will be several years before we will really know whether this apparent increase is simply a fluctuation in a long plateau, or whether this year’s data mark the turning point toward progress on overcoming physical inactivity in Canadian children and youth.
What Do the Self-Reported Data Tell Us?

A recent systematic review comparing direct and indirect measures of physical activity in children found that these two approaches have poor agreement. Both direct and indirect measures are fraught with limitations and both provide very different, yet equally important, information on physical activity. Given the bias and error associated with self-reported physical activity data, the Research Work Group considers objectively measured physical activity more heavily when it assigns grades. However, self-reported physical activity information still provides important insights into the perceptions children and youth have about their physical activity. Generally, self-reported physical activity levels are much higher than objectively measured levels of activity. This occurs for a number of reasons, including perceived societal pressures to be active, difficulties in recall, and a lack of understanding about what constitutes “physical activity.”

The most recent physical activity data available from Statistics Canada is self-reported information from the Canadian Community Health Survey (CCHS). These data indicate that overall, youth aged 12 to 17 years are reporting that they are more active now than they were in 2000-2001. However, methodological changes in how physical activity information was collected between the 2000-2001 and 2003 cycles may partially explain the increase observed during this time. Since 2003, it appears as though there has been a plateau in self-reported physical activity levels (Figure 7). What the CCHS reports is a leisure time physical activity index, which categorizes respondents as being “active,” “moderately active” or “inactive” in their leisure time, based on the total daily energy expenditure values (kcal/kg/day) calculated from a wide range of daily activities. On average in Canada, 73% of youth aged 12 to 17 years reported that they were either moderately active or active (Figure 8). Provincial and territorial differences do exist, with boys in Yukon and New Brunswick more likely to be more active than the Canadian average. Among girls, those living in Yukon, Newfoundland, Manitoba and Alberta are more likely to be more active than the Canadian average. Reported levels of physical activity in Quebec girls were below the Canadian average (Figure 9).
The 2005-2006 HBSC found that Canadian youth aged 10 to 15 years are doing quite well when self-reported physical activity information is compared to that of other developed countries. Overall, Canada ranked 36th out of 41 of the participating HBSC countries. In other words, Canadian youth reported being more active than youth from 85% of the countries included in this survey. The only countries in the ranking where the youth are reporting they are more active than their Canadian counterparts are Bulgaria, the United States, Greenland, Ireland and Slovakia.

At first glance, these data may seem encouraging. However, if 60+ minutes of physical activity on a daily basis is used as a criterion for being physically active (consistent with international guidelines; different from Canadian guidelines of 90 minutes per day), only 13% of Grade 10 girls and 27% of Grade 10 boys in Canada would be considered active. Simply having higher values than other countries does not mean we are at an adequate level. Furthermore, it is worth noting that this same survey found that Canada has one of the highest global rates of overweight and obesity in youth. Overall, Canada ranked 39th out of 41 countries. Only Malta and the United States have higher reported levels of youth obesity.
The SHAPES Survey data from Alberta, British Columbia and Ontario found that 55% of the students surveyed in grades 5 to 8 reported being active. A student was deemed “active” if the information recorded in a 7-day recall met a set threshold of calories expended per day. In British Columbia, the SHAPES research team also examined what proportion of children were meeting current Canadian physical activity guidelines (90 minutes per day). Thirty-two percent of B.C. students surveyed in Grade 6 reported that they were getting 90 minutes or more of physical activity per day. More boys met the guidelines (36%) than girls (26%) in this survey. Another school-based survey found that youth reported spending an average of 1.4 hours on physical activity per day, and 42% reported that they get at least 90 minutes per day (TTFM 2008-2009).

We need to do a better job of engaging overweight and obese children and youth in physical activity

The lifestyle habits of overweight and obese children and youth were examined by the Pediatric Centre for Weight Management in Edmonton. Only 7% met the time targets for physical activity and only 4% met the targets for number of steps taken per day.71
### Measurement Tool Description Advantage(s) Disadvantage(s)

<table>
<thead>
<tr>
<th>Measurement Tool</th>
<th>Description</th>
<th>Advantage(s)</th>
<th>Disadvantage(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Report (i.e. diaries, questionnaires, logs)</td>
<td>Participants provide a log or diary of their activity, or answer specific questions relating to physical activity behaviour.</td>
<td>Low cost; easy to administer; option to do online.</td>
<td>Reliant on participants to understand and to accurately and honestly describe their physical activity; misreporting; biased answers.</td>
</tr>
<tr>
<td>Pedometer</td>
<td>A “step counter” device that counts each step a person takes by detecting the motion of their hips.</td>
<td>Relatively low cost; more objective measure compared to a questionnaire.</td>
<td>Participants can see how many steps they are taking; easy to tamper with. Monitor must be worn at all times. Provides no data on activities such as swimming, cycling, skating, skiing.</td>
</tr>
<tr>
<td>Accelerometer</td>
<td>Records the acceleration of change in bodily motion. The “counts” recorded are proportional to the magnitude and frequency of changes in physical activity energy expenditure.</td>
<td>Accurate and objective measure; more accurate than pedometers.</td>
<td>High cost; complex data analysis; ongoing calibration recommended. Monitor must be worn at all times. Provides no data on activities such as swimming, cycling, skating, skiing.</td>
</tr>
<tr>
<td>Heart Rate Monitoring</td>
<td>Uses telemetry to measure heart rate. Some models also estimate energy expenditure based on the linear heart rate – oxygen consumption relationship.</td>
<td>Provides real-time feedback to user regarding intensity of movement; cannot be tampered with.</td>
<td>Information provided relates more to intensity of movement rather than amount of physical activity accumulated. Energy expenditure estimates are weak for sedentary and light intensity movement.</td>
</tr>
<tr>
<td>Doubly Labelled Water (DLW)</td>
<td>The average metabolic rate is measured over a period of time. This is done by administering a dose of DLW, and then tracking the loss of 2 isotopes in the subject over time, through the use of regular sampling of heavy isotope concentrations in the body water (by sampling saliva, urine, or blood).</td>
<td>Considered the gold-standard technique to measure total daily energy expenditure. Captures all activity.</td>
<td>Very expensive and requires sophisticated laboratory equipment and technical expertise (i.e. mass spectrometry). Provides an average value over a 2-week period and not a daily estimate.</td>
</tr>
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</table>
Explaining the gender difference in physical activity: is it about time?

One way of looking at this question is to examine “traditional gender schema,” a theory that serves as a guide to describe the process by which humans acquire and transmit culturally defined sex-specific concepts of femininity or masculinity. Time use patterns and perceptions of time pressure were examined in a sample of 2,154 adolescents in Ontario to determine whether gender differences existed in younger (12 to 14 years) and older (15 to 19 years) adolescents. For both age groups, girls reported a higher total workload of schoolwork, domestic activities and paid employment. Furthermore, girls reported spending more time on personal care while boys reported having more free time, particularly during early adolescence. While this study did not directly examine gender differences in physical activity levels, it does provide some insight into how youth are spending their time, and suggests that perceived time pressure may be a barrier worth exploring further, particularly among adolescent girls.

Various data sources continue to show a strong gender difference

- From 2005 to 2008, the CFLRI CANPLAY Survey has consistently shown that boys take more steps per day than girls (Figure 10).
- A web-based survey of a group of 4,887 adolescents (grades 7 to 10) in Alberta found that, on average, boys report being more physically active than girls (WEB-Span 2005).
- Using self-reported 7-day recall data, the SHAPES research conducted in Alberta, British Columbia and Ontario classified significantly more boys (59%) than girls (51%) as “active.” This gender difference was evident in all three provinces: Alberta (boys = 40% active, girls = 31% active), British Columbia (boys = 52% active, girls = 38% active) and Ontario (boys = 73% active, girls = 68% active). (Note that the different rates in provinces are related at least in part to grades surveyed.)
- The HBSC 2005-2006 Survey demonstrated that boys are more likely to report being active for at least 60 minutes a day as compared to girls. This finding is consistent across the three age groups studied: 11 years (boys = 36% active, girls = 26% active), 13 years (boys = 31% active, girls = 16% active) and 15 years (boys = 27% active, girls = 13% active).

Canadian Health Measures Survey – Cycle 1 Release November 2010

Statistics Canada is scheduled to release objective physical activity data on Canadians (aged 6 to 79 years), as measured by accelerometry and pedometry, in November 2010. This information will provide a comprehensive picture of how active Canadian children and youth are and how these levels compare to other countries that have already published national-level accelerometry data on similar age groups. Cycle 2 (data collection to start mid to late 2009) of the Canadian Health Measures Survey (CHMS) will include preschool-aged children in order to better understand this age group, for whom health surveillance data are scarce.

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Canadian Health Measures Survey – Cycle 2 (data collection to start mid to late 2009) of the Canadian Health Measures Survey (CHMS) will include preschool-aged children in order to better understand this age group, for whom health surveillance data are scarce.
A group of Canadian researchers measured intention as well as behavioural, normative and control beliefs as they relate to physical activity behaviour, and suggested that interventions for boys also need to address time barriers and planning. A study conducted in Alberta suggests that self-efficacy is an important correlate of physical activity among adolescent girls but that boys are more physically active because they have more self-efficacy for physical activity. Another Canadian-based study used accelerometers to measure physical activity and semi-structured interviews to assess perceived barriers to physical activity in a group of 221 girls in grades 4 to 10. In addition to observing that physical activity decreases with age, the study found that the barriers for younger girls (grades 4 to 6) differed from older girls (grades 9 to 10); specifically, younger girls reported more interpersonal and social barriers while older girls reported more institutional barriers (i.e. facilities, programming).

Physical activity of Métis children and youth in Canada

Métis girls were slightly more likely than boys to report that they never played sports and/or took lessons outside of school (24% versus 20%). Métis boys (28%) were more likely than girls (17%) to be very active in sports (i.e. play sports 4 or more times a week).

Various data sources continue to show that physical activity levels drop off in adolescence

- The 2007-2008 CANPLAY data show that younger children (aged 5 to 10 years) take more steps per day than older children (aged 11 to 14 years), who in turn take more steps than youth (aged 15 to 19 years).
- The 2007-2008 CANPLAY data show that the proportion of children meeting the Canadian Guidelines for Physical Activity decreases in older age groups, with almost twice as many 5- to 10-year-olds meeting the guidelines compared to 15- to 19-year-olds. This age-related trend is apparent in both boys and girls.
- The 2001 Youth Risk Behaviour Survey (n = 13,503 American youth) and the 2001 Ontario Student Drug Use Survey (n = 1,322) both show a steady decline in physical activity between the ages of 14 to 18 years.
- The 2005-2006 HBSC shows that the proportion of physically active youth drops between the ages of 11 to 13 years, and again from 13 to 15 years.
- The SHAPES research compared older and younger children of varying ages in several provinces. Regardless of the age examined, the older groups consistently report being less active when compared to the younger groups.
Explaining the drop in physical activity in adolescence: are we engaging youth?

Adolescence is a critical period for the adoption of healthy lifestyle behaviours because the physical activity and diet habits adopted during this time period generally track into adulthood. Using the Perceived Competence Scales for Participating in Regular Physical Activity, a group of Canadian researchers found that competence and value perceptions were strong correlates of physical activity behaviour in a group of older adolescent boys ($n = 206$) and girls ($n = 326$).80 This information is helpful for practitioners and teachers who are striving to increase youth engagement in physical activity, as it highlights the importance of understanding how much value youth place on physical activity and also how confident they are in their ability to perform physical activity. Similarly, another Canadian study demonstrated the importance of promoting self-efficacy in children and youth. On average, children identified as having high self-efficacy expended more calories over a 7-day period, as quantified objectively by accelerometers.81 Researchers in Saskatchewan used a qualitative ecological framework to examine the intrapersonal, social and environmental factors influencing youth physical activity.82 Youth in grades 7 through 12 were asked how they would increase the physical activity levels of youth their age. Participants identified the following factors:

- Having fun and feeling competent are important (highly dependent on having the motor skills necessary to engage in physical activity).
- Youth need time to be physically active.
- Youth need to understand the benefits of physical activity.
- Youth want to be active with friends.
- Adults are needed to facilitate and supervise.
- Youth need to be able to access appealing and appropriate facilities in their own neighbourhood.
- Youth need programs specifically geared towards their age group.

It is encouraging to see such insightful research emerging within Canada that takes us beyond simply recognizing that older adolescents are a group we are failing to engage. The collective findings from these studies highlight the importance of understanding how much value is placed on healthy behaviours, self-efficacy and feelings of competence with regard to physical activity participation. Finally, the pooled data indicate that health promotion programs for older youth cannot simply be modified versions of programs suitable for younger children.
Regional differences in physical activity

Three years of data from the CFLRI CANPLAY Survey show that regional variation exists in the number of steps taken per day as well as the proportion of children and youth meeting the physical activity guidelines. The data show that we have to focus even more effort in Atlantic Canada as well as in Quebec, as these are two regions showing lower physical activity levels than the rest of Canada (Figure 11).

Socio-economic factors and physical activity

There is evidence from several Canadian studies that various indicators of socio-economic status (SES) play a role in physical activity levels. The 2007-2008 TTFM Survey found that the average time spent being physically active and the proportion of children meeting physical activity guidelines increases according to family SES. Children from the lowest SES category spent 1.3 hours per day being active (34% meet the guidelines), while those from the highest SES category spent 1.6 hours per day being active (49% meet the guidelines). Similarly, the CFLRI CANPLAY Survey (2007-2008) found that children and youth in the highest-income households (more than $100,000/year) take more steps per day than those in low- to moderate-income households ($40,000-$79,999/year). Finally, children whose parents have attended university take more steps per day than children whose parents have no more than secondary school education (CFLRI CANPLAY 2007-2008).

All children benefit from physical activity, and children with disabilities are no exception
Participation in physical activity among children with disabilities is lower than among children with typical development. In a study using self-reported physical activity data, 26% of children with physical disabilities reported being physically active. In another study of self-reported data, Steele and colleagues found that 59% of their sample of youth with physical disabilities seldom or never play games with friends, 77% seldom or never go for 30-minute bike rides and 72% seldom or never exercise or go for a jog. Due to the self-report nature of the measure, it is possible these children are even less active than reported. The participation of children with disabilities in physical activity is potentially affected not only by their functional level, interests or family culture, but also by factors within their physical, social and institutional environments. Children with disabilities who have better motor function and those who continue to receive rehabilitation services are more likely to engage in skill-based activities. Many children with disabilities lack the repertoire of skills needed to take part in outdoor active play. For instance, a Canadian study found that children with attention deficit hyperactivity disorder (ADHD) were at increased risk for poor levels of physical fitness and movement skill difficulties, which may impact upon their physical activity participation rates.

According to the 2006 Participation and Activity Limitation Survey (PALS), a high proportion of children with disabilities took part in unorganized sports activities (those without a coach or instructor) (Figure 12). However, caution should be taken when interpreting these data, as all 10 disability categories (hearing, seeing, communication, mobility, agility, pain, learning, memory, developmental and emotional) are aggregated for these data, meaning children with emotional or memory disabilities are in the same category as children who use wheelchairs, limiting the interpretation of how active children with disabilities actually are.

Figure 12: Percentage of Canadian children with disabilities participating in unorganized sports (Source: PALS 2006).
With only a few new surveys becoming available, the strongest evidence from the national surveys in Canada still indicates a troubling picture with regard to screen time, and therefore the grade remains an F. Key areas for discussion include the impact of active gaming and what our messages should be toward all the relevant stakeholders. In addition, the dangers of exposing infants to media programs are discussed.

Screen Time in Canada

The most representative and recent data available on Canadian children found that the average accumulated screen time of youth aged 10 to 16 years was approximately 6 hours per day (2005-2006 HBSC). This value was even higher on weekends, at 7.5 hours per day. Only 10% of Canadian youth surveyed in this study would meet the screen time guideline of less than 2 hours per day, and Canada ranks 23rd out of 40 countries when it comes to accumulating excessive screen time. Other Canadian surveys show an equally disturbing picture. While there is considerable variability in screen time values among studies, all show that average values are still above the 2 hour per day guideline. The average screen time reported by youth participating in the 2008-2009 TTFM Survey was 2.8 hours per day. The average screen time reported by youth surveyed in Alberta was 4 hours per day, with only 23% of these youth meeting the screen time guideline (WEB-Span). In the Alberta survey, children in rural schools watched 15 more minutes of TV per day when compared to those in urban schools. However, children in urban schools reported 15 more minutes of overall screen time (including computer time and video games) when compared to children in rural schools.

In the 2008 Report Card, the grade for Screen Time dropped from a D- to an F for two reasons:

- new data reported high screen time in preschool-aged children; and
- there was mounting evidence from a range of studies indicating that screen time values far exceeded the current screen time guidelines of less than 2 hours per day set by the Canadian Pediatric Society and the American Academy of Pediatrics.
Despite what it may seem, some progress is emerging. The 2001 NLSCY found that only 20% of 4- to 5-year-olds are watching more than 2 hours of television per day, a value that is down from approximately 32% in 1994 (Figure 13). Whether this is a true reduction in sedentary habits, or indicative of a shift from TV to computer use, remains unknown. Therefore, cautious optimism must be applied here until further information is available on why this decrease over time has been observed. Other encouraging data are available from the SHAPES survey from Ontario, British Columbia and Alberta. More than half (57%) of those surveyed reported that they were accumulating less than 2 hours of screen time per day. Similarly, another study in Alberta found that 60% of preschool-aged children accumulated less than 2 hours of screen time per day and 27% accumulated less than 1 hour per day (SHAPES).

Evidence of disparities

In a group of students surveyed in Ontario, British Columbia and Alberta, more boys than girls reported having high screen time (2 hours or more per day) (48% versus 37%) (SHAPES). The same survey found that youth in grades 9 to 12 were more likely to report having this high screen time when compared to those in grades 5 to 8 (46% versus 42%) (SHAPES). When compared to preschool children living in the least wealthy neighbourhoods of Edmonton, those living in the wealthiest neighbourhoods were less likely to accumulate more than 2 hours of screen time per day (SHAPES) (Figure 14).

The only information we have on Canadian youth with physical disabilities shows that 40% spend more than 4 hours per day watching TV, compared to 13% of children without disabilities of a nationally representative sample.63 Other research indicates that individuals with intellectual disabilities are also drawn to TV.89
Screen time among Métis children in Canada

In 2006, the majority of Métis children (69%) were reported to watch between 1 and 2 hours of television a day. About 65% spent 1 to 2 hours on a computer per day, and about 49% spent between 1 to 2 hours playing video games. For the most part, there were no differences in “screen time activities” between boys and girls, with the exception of video games. Two-thirds (66%) of girls aged 6 to 14 never played video games, compared to 24% of boys.78

Active video gaming – is it “the” solution to the physical inactivity crisis?

The short answer is “no.” However, it may have a role in fighting the battle. The emergence and exploding popularity of active video games has created a unique conundrum for health practitioners. For some time, video games have been viewed in a negative light within health circles because they expose children and youth to excessive violence and encourage a sedentary lifestyle; however, the new generation of active video games is more sport-oriented and encourages users to get up off the couch and become engaged in the games. The key argument supporting active video gaming is simply that children and youth are likely to continue playing video games in the future, so why not optimize the experience as much as possible? There are 3 key messages to remember when discussing active video games in the context of promoting physical activity in children and youth:

1. **Active video games may encourage children and youth to replace some sedentary time with activity.**
2. **Active video games may encourage children and youth to replace some outdoor or sport time with video-based light intensity activity.**
3. **Actual play, sport and recreation have benefits far beyond simply increasing one’s energy expenditures. Therefore, active video games should not be viewed as a replacement of true active pursuits.**

One of the first studies to investigate the impact of active video gaming found that energy expenditure more than doubled when sedentary screen time was replaced with active screen time.90 The cardiovascular response to active video games was assessed in another study and showed that active video games resulted in a 59% increase in heart rate and a 224% increase in energy expenditure; both measures rated as equivalent to moderate-intensity activities such as basketball and jogging.91 A more recent study compared inactive video gaming (Microsoft Xbox 360) with active video gaming (Nintendo Wii) in a group of 13- to 15-year-olds, and showed increased energy expenditure with the more active games (Figure 15).92
From a practical point of view, it is important to consider the impact of active video gaming on physical activity levels. Accelerometers were used to compare the patterns of physical activity levels among children randomized to either a control group or an intervention group that included the provision of an active video game upgrade package. Children in the intervention group spent less time over the 12-week period playing all video games compared to controls (mean time of 54 versus 98 minutes/day). Physical activity, measured by accelerometer, was higher in the active video game group compared to the control group (average accelerometer counts of 194 versus 48 counts per minute). This preliminary study suggests that playing active video games on a regular basis may have positive effects on children’s physical activity levels. Active gaming also has the potential to increase the activity of children with mobility-limiting conditions who are very likely to be sedentary, and are also likely to be excluded from regular team and individual sports. The use of active gaming by children with disabilities is therefore an area that warrants further research, specifically regarding its effects on motor skills, physical activity, self-confidence and peer interactions. Whether active video gaming can have an impact on childhood obesity remains unknown.

While the physiological response of active video gaming suggests that such games are good tools to increase overall energy expenditure, the findings need to be placed in context. Playing the authentic versions of the Wii Sports games results in markedly higher energy expenditure than that incurred when playing the video game versions. That is, actually playing soccer results in greater energy expenditure than playing the video facsimile. Therefore, while active video gaming is better than seated video games and watching TV, it is not as good as the “real thing.” It is important to note that playing video games can be a solitary activity, and social contact is one of the great side benefits of playing, dancing, engaging in sports or simply getting outside for a walk with family and friends. The benefits of getting outdoors cannot be ignored either; this topic is discussed in more depth in the Active Play section.
Infant TV viewing

In 1971, the average age at which children began to watch TV was 4 years; today, it is 5 months. In today’s society, more than 90% of children begin watching TV before the age of 2 in spite of recommendations to the contrary. A review paper published in early 2009 argues that DVDs and TV shows aimed at infants may be doing more harm than good. Parents have been led to believe, with no substantive proof, that these programs are “intellectually good” for their children. An example testimonial clearly demonstrates why parents are fueling this industry: “This video will teach your child about language and logic, patterns and sequencing, analyzing details, and more.” The reality is that such claims have not been peer-reviewed or even subject to internal industry studies. As a result, infant TV viewing has become an enormous international industry, with average U.S. sales for baby DVDs currently in the vicinity of $500 million per annum. A survey of 1,000 American families found that 29% let their infants and young children watch TV because “it’s good for their brain,” while 24% use it as a “babysitter.”

So why the concern? After reviewing a range of research from the past 25 years, Christakis suggested that flashing lights, quick edits and auditory cuts may be overstimulating developing brains and therefore negatively affecting language development, attention span and cognitive development. Babies actively explore their environment to learn about the world and their own bodies. This active exploration is important for the development of perception-action, spatial perception, spatial search strategies, cause and effect, mother-infant social referencing and motor development. The early developing brain is dependent on exploratory motor behaviour for the development of neural connections. Early exploratory behaviour provides a main source of activity for the continual neural sampling necessary for the neuronal group selection and perceptual categorization. When infants are put in front of a TV at an early age and thereby not encouraged to explore and learn from their own environment, there could be long term consequences in development. While more research is needed in this area, the key message remains that no studies to date have demonstrated benefits associated with early infant TV viewing. In fact, the majority of existing evidence suggests the potential for harm. A lack of regulation related to the claims made by the purveyors of these products is problematic.
Background, Reflections and Rationale for Grade

The grade for sport participation has been steady for several years, and remains as a C this year. Despite decreases over time, more than half of children and youth are participating in organized sport, and this justifies the moderate C grade. Sports participation declined from 77% to 59% among youth aged 15 to 18 years between 1992 and 2005 (GSS, Statistics Canada).61 This downward trend in youth sport participation mirrors the trends we are observing in physical activity levels. There are, however, some smaller studies that show more encouraging participation rates. For example, a steady increase has occurred in the proportion of children aged 4 to 5 years participating in organized sports at least once per week. However, the overall rate is still hovering around 15% (NLSCY 1994-2005). The majority of children and youth (86%) are participating in at least one extracurricular activity (Figure 16).62 While some of this proportion is involved in non-sport clubs and activities, it is still a positive sign that children and youth are engaged in community activities. One-third of children and youth surveyed in three large provinces (Ontario, British Columbia, Alberta) reported participation in organized sport outside of school. The majority of samples of youth in Alberta and Prince Edward Island (70%) reported they participate in sport (WEB-Span, PEI Sport Strategy).

Organized Sport and Physical Activity Participation
Grade: C

Figure 16: Percentage of Canadian children and youth aged 6 to 17 years who participated in organized extracurricular activity in 2000-2001, by age group and type of activity. * Significantly different from reference category (age 6 to 9 years).62
While participation rates are encouraging, the story is not all good news. The presence of disparities in this indicator cannot be ignored. For example, the expense of organized sport (e.g. registration, uniforms) is understandably a barrier for families of lower household income. The popularity of sports with fewer equipment needs and lower registration costs (e.g. soccer) is likely a reflection of this. Furthermore, children and youth with disabilities face unique and challenging barriers when it comes to sport participation.

Evidence of disparities

While the 2005 data alone suggest that boys (55%) are participating in sport more frequently than girls (44%), the trend data from 1998 to 2005 shows that girls have maintained a constant level of participation while the boys’ involvement dropped by 4 percentage points (from 59%). When choosing extracurricular activities, boys (6 to 9 years) were more likely to play organized sports, whereas girls of the same age were more likely to be involved in non-sport physical activities (NLSCY 2000-2001).

Children and youth from lower-income households report lower sport participation rates. More than 92% of children from the highest-income families played organized sports, compared with 72% from the lowest-income families. Furthermore, children from lower-income households were more likely to participate in sports with lower expenses (e.g. equipment, travel) such as soccer and basketball. Other predictors of sport participation include higher educational attainment and being born in Canada. Finally, sport participation tends to be slightly higher in children and youth living in urban areas when compared to rural areas.

![Figure 17: Proportion of Canadian children with disabilities participating in organized sport (Source: PALS 2006, Statistics Canada).](image-url)
Sport participation of Canadian children with disabilities

Participation and Activity Limitation Survey 2006

PALS is Canada’s principal national survey focusing on persons with disabilities. It includes detailed questions about the nature and severity of disabilities. Severity is based on the number and degree of activity limitations. Ten types of disabilities are identified: hearing, seeing, communication, mobility, agility, pain, learning, memory, developmental and emotional.

According to the 2006 PALS, the disability rate for Canada is approximately 14.3%. Children with disabilities tend to be more restricted in their sport participation opportunities. As with children with typical development, numerous benefits of sport participation exist for children with disabilities. These include the promotion of inclusion, minimizing de-conditioning, optimizing physical functioning, and enhancement of overall well-being. Athletes with intellectual disabilities who participate in Special Olympics have higher levels of social competence, feelings of self-worth, perceived physical competence and perceived social acceptance. However, data on the sport participation of Canadian children with disabilities remain limited.

According to the results of the 2006 PALS, approximately half of children (0 to 14 years) with disabilities took part in organized sport activities (with a coach or instructor) outside of school hours (Figure 17); approximately 37% of children with disabilities took lessons in other organized physical activities such as dance, gymnastics, or martial arts.

Interpretation of the 2006 PALS sport participation data for children with disabilities is limited by the fact that several different types and degrees of disability are merged together. It is therefore impossible to separate children with a mild learning disability from those with severe mobility limitations such as spastic cerebral palsy. Therefore, caution should be exercised when interpreting this data.
Special Olympics Canada celebrates its 40th anniversary in 2009!

Sport participation for children and youth with an intellectual disability

Special Olympics Canada provides sport training and competition for Canadian athletes with an intellectual disability. Participation in Special Olympics initiatives has tripled in the past 20 years (Figure 18).

For children with disabilities, mastery of an individual sport (such as cycling, cross-country skiing, swimming) can sometimes lead to extended participation and enjoyment in physical activity across the lifespan.

Figure 18: Historical trend in participation in Special Olympics in Canada. Data includes athletes with an intellectual disability of all ages (Source: Special Olympics Canada).

Figure 19: Participation in summer sports by Special Olympics Athletes in 2007-2008 (Source: Special Olympics Canada).

Figure 20: Participation in winter sports by Special Olympics Athletes in 2007-2008 (Source: Special Olympics Canada).

* Nova Scotia data not available
Canadian Special Olympics athletes compete in both summer and winter sports across Canada (Figures 19 & 20). For more information, visit www.specialolympics.ca.

New programs are being added to the Special Olympics Canada repertoire to increase recruitment and development of athletes in their early years as part of the Long Term Athlete Development Model for Athletes with Intellectual Disabilities.

Factors that contribute to lower participation in organized sport of young children with intellectual disabilities include the child’s medical, educational, social and early intervention programs needs. These can overwhelm parents of a very young child with a disability. Additionally, parents of children with intellectual disabilities often feel that community programs for children with typical development met their child’s needs when they were young, but with increasing age, the social, physical and emotional distinction between children became apparent. There is no readily available information on the number of athletes with disabilities who participate in regular community sport leagues in Canada. Increased opportunities and awareness for Canadian children and youth with intellectual disabilities to participate in organized sport are needed.

Sport participation of children with physical disabilities

The World Health Organization (WHO)’s Health Behaviour in School-aged Children (HBSC 1993/1994) questionnaire was administered to a sample of 101 Canadian children and youth with physical disabilities, and the results were compared to a nationally representative sample of Canadian children without disabilities. The results indicate that children with physical disabilities participate in organized sport less often than Canadian children with typical development (Figures 21 & 22).
The Ontario Wheelchair Sports Association has a program to engage children and youth in wheelchair sports called “Bridging the Gap.” This association works to introduce children and youth to wheelchair basketball, tennis, rugby, and athletics racing. In 2007-2008, 189 children were introduced to the sports and approximately half of them went on to participate in a skill development program in the sport of their choice. Additionally, in Ontario, 83 youth under the age of 21 are currently participating in competitive wheelchair team sports; the majority of them participate in basketball. For more information, visit www.ontwheelchairsports.org.

Paralympic boccia ball is an example of a Paralympic sport that even children with severe disabilities can participate in. The Canadian Cerebral Palsy Sports Association reports that it has 136 junior members enrolled in bocce ball in Canada for the 2008/2009 season. For more information, visit www.ccpsa.ca.

**Why doesn’t the PALS 2006 sport participation data match with the research and the governing sport organizations’ participation data?**

PALS 2006 is a telephone survey that surveyed 8,500 children across Canada whose parents indicated on the 2005 census that they had a child with some sort of activity limitation. This survey does not stratify well between conditions; for example, children with physical disabilities, cognitive disabilities and learning disabilities are put together in the same group – “children with disabilities.” Therefore, the peer-reviewed research targeting specific types of disabilities (e.g. only children with physical disabilities), despite having smaller samples, is likely to give a more comprehensive evaluation of physical activity and health that is specific to the targeted population. In other words, sometimes the smaller studies, using very specific populations, may be more informative than the national-level health surveys.

**Making Strides in P.E.I.**

A true good news story seems to be emerging in Prince Edward Island. Sport participation dropped between 1992 and 2005 in all provinces and territories in Canada, except P.E.I. After having the lowest rate of participation in 1998, this province improved to be 4th overall in 2005. In contrast, the greatest decreases were observed in Quebec and British Columbia. Nova Scotia currently holds the lead for sport participation in Canada (32%), followed by Alberta and Manitoba. Newfoundland and Labrador had the lowest participation rate in 2005 (24%). Another Canadian survey, the NLSCY, also found that sport participation was low in Quebec. This survey also found that in general, the Eastern provinces had lower rates of participation compared to the Western provinces.
The Impact of Sport Participation on Total Daily Movement

The 2008 CFLRI CANPLAY shows that children and youth who participate in sport accumulate more steps per day and are more likely to meet the physical activity guidelines than those who do not participate in sport. This finding is not surprising, but it does provide some assurance that children are in fact increasing their physical activity levels and not compensating by decreasing non-sport-related movement (Figure 23).

↑ Sport Participation = ↑ Total Daily Physical Activity

Figure 23: Mean number of steps per day accumulated by children’s participation in organized sport and physical activity.
Canadian Sport for Life

The Long Term Athlete Development (LTAD) model is “a model for development in physical activity and sport that not only provides a safe, enjoyable, and progressive pathway for children to pursue healthy physical activity, but also provides a pathway to excellence.” Figure 24 shows the progression by age group that leads children to become physically literate and for some to become high performance athletes. A key message to take away from this diagram is that we must strive to, at the very minimum; facilitate the achievement of physical literacy (fundamental sport and movement skills) in all Canadian children. For more information, visit www.canadiansportforlife.ca.

Canadian Sport for Life (CS4L) is an initiative of Canadian Sport Centres and Sport Canada that supports the LTAD by:

- helping all children to be physically literate (competent in fundamental movement skills for sport and physical activity);
- recognizing that children play to have FUN;
- acting as a pathway to excellence from playground or pond to podium; and
- allowing all Canadians to be physically active through sport and recreation participation.

Sport Research in Canada

The 2nd Annual Sport Canada Research Initiative Conference was held in November 2008 in Gatineau, Quebec. This conference brought all current Social Sciences and Humanities Research Council (SSHRC)- and Canadian Institute of Health Research (CIHR)-funded sport researchers together with policy-makers to share their knowledge and expertise in view of maximizing the practical applications of sport participation research. It is encouraging to see such diverse sport research happening across Canada. The current research pertaining to sport participation in children and youth is summarized below with relevant references:
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Background, Reflections and Rationale for Grade

Active play is essential to development because it contributes to the cognitive, physical, social and emotional well-being of children and youth. In fact, play is so important in optimizing child development that it was recognized by the United Nations High Commission for Human Rights as a right of every child. It is imperative that play is considered in addition to, not instead of, academic development and social-enrichment opportunities. Furthermore, safe environments that are conducive to active play need to be freely available to children and youth in Canada.

Active play was introduced as a new indicator in 2008 in response to growing concern by the public, parents, health practitioners, teachers and policy-makers that children are not playing as much as they used to. While there is clearly increased attention around this issue, there is still not enough information to allocate a grade to this indicator. Some research studies ask questions about unstructured play; however, far more information is needed to increase the level of understanding of this aspect of childhood that seems to be slipping away. Anecdotal observations suggest that previous generations of kids played freely in the streets of their neighbourhoods, making friends and making up their own games without supervision. It has been argued that the current generation of children and youth is less connected to the natural world than children at any other time in history. Sadly, active play has all but disappeared thanks to a dramatic shift that has occurred in only a few decades. Ubiquitous access to computers, the Internet and hand-held devices, along with increased parental fear and more highly structured play and supervision, are keeping children and youth from playing outdoors.
While rigorous surveillance data relating to this issue are scarce, there is a general sense that the simple pleasure of being a child at play – free from structure, supervision, minivan chauffeuring, cellphones, computers, video games and most importantly, parents – has disappeared from modern society.

**Active Play in Canada**

There is a paucity of information relating to rates of participation in active play in Canada. Some information is available on unorganized physical activity participation, and this provides some insight into what levels of play are going on across the country. According to the 1994-2005 NLSCY Surveys, 50% of children aged 4 to 5 years participate in unorganized sport once per week. This trend did decrease between the late 1990s and 2000; however, it appears to have rebounded in 2002-2003 and 2004-2005. According to parental reports, Edmonton preschool children accumulate approximately 32 minutes of active play per day, and 42% are sufficiently active on a weekly basis. Children are more active in spring and summer compared to the winter months (SHAPE-Preschool). One-third of youth surveyed in Edmonton reported doing little to no physical activity in their free time (WEB-Span).

Preschool-aged boys in Edmonton participate in active play slightly more than girls (34 versus 30 minutes/day). A greater proportion of young boys (46%) are playing for 90 minutes/day compared to young girls (39%) (SHAPE-Preschool). More than half (60%) of youth with disabilities report that they seldom or never play games with friends (1993-1994 HBSC). More recent data (PALS 2006) indicated that 57% of children with disabilities in this sample participate in unorganized sport at least once/month.86

**How do we better understand play?**

In 2008, the Report Card asked researchers to find a way to measure or characterize play. This request is going out again in 2009. This is not an easy task given that play encompasses so many different activities in a variety of settings. The list of play activities provided below gives some context around how difficult it is to quantify this type of information. Creative thinking and a combination of quantitative and qualitative techniques are going to be required to come up with a measurement strategy. Why bother, one might ask? Well, policy-makers demand data and evidence before making change. By providing them with more robust information about how much play is (or isn’t) happening in the lives of Canadian children and youth, we hope to be able to draw more attention to this important aspect of child development and well-being.

In 2005, as “part of their ‘Dirt is Good” promotion, the manufacturers of Persil washing detergents surveyed 1,000 adults so they could compile a list of play activities. Responses included: roll down a grassy bank, make a mud pie, prepare a modelling dough mixture, collect frog spawn, make perfume from flower petals, grow cress on a windowsill, make a papier-mâché mask, build a sand castle, climb a tree, make a den in the garden, paint using hands and feet, organize a teddy bears’ picnic, have a face-painting session, bury a friend in the sand, bake some bread, make snow angels, create a clay sculpture, take part in a scavenger hunt, camp out in the backyard, bake a cake, feed a farm animal, pick some strawberries, recognize 5 bird species, find some worms, cycle through a muddy puddle, make and fly a kite, plant a tree, build a nest from grass and twigs, find 10 different leaves in the park, grow vegetables, make breakfast in bed for parents, etc…134
Benefits of active play

- Play is essential to development because it contributes to the cognitive, physical, social and emotional well-being of children and youth.\textsuperscript{135}
- Active play allows children to use their creativity while developing imagination, dexterity and physical, cognitive and emotional strength.\textsuperscript{136}
- Active play is associated with healthy brain development.\textsuperscript{137}
- Active play allows children to conquer their fears, practise adult roles and develop the confidence and resilience needed to deal with life’s challenges.
- Active play is an excellent way to increase physical activity levels.
- Active play settings (e.g. playgrounds) are domains where children with disabilities are often included with their peers, and a setting where inclusion and friendships can be developed.

Why is play disappearing?

Ginsburg\textsuperscript{137} suggests the following reasons for the disappearance of play from the lives of our children and youth:

- An increasingly large proportion of families have both parents working outside the home. The lack of supervision in many homes has resulted in children being placed in organized after-school activities.
- Parents feel pressured by hurried work schedules to maximize the “quality” of opportunities their children receive, whether inside or outside the home environment.
- Parents feel pressured to ensure a wide range of enrichment tools and activities are provided to their children to increase the likelihood that they will become over-achievers.
- Getting into university is becoming a highly competitive process, thus increasing the pressure for children’s parents to focus more on academic development (e.g. taking extra university preparatory courses) rather than on striking a balance between academic and healthy development.
- Children are passively entertained through screen pursuits.
- In many communities, parents do not perceive that their community is safe enough to let their children play outside the home unless supervised closely.

A generation of children who don’t go outside and the nature-deficit disorder

Richard Louv’s book \textit{Last Child in the Woods} – \textit{Saving Our Children from Nature-Deficit Disorder}\textsuperscript{138} has stimulated an international movement about the future relationship between children and nature. The Children and Nature Network, chaired by Richard Louv, is working to increase the awareness around this issue. For more information, go to \texttt{www.childrenandnature.org}. 
This timely book presents wide-ranging research on the toxic cocktail of factors affecting children’s lives today. The book describes research from Lancaster University (2004), which found that compared to the 1990s, today’s 10- and 11-year olds are given a smaller and more clearly specified area in which they can play freely, are monitored much more closely by their parents, and have their play curtailed at the first hint of danger. Children are missing out on ‘everyday adventures,’ those small but significant experiences through which they learn about the world, develop their coordination and grow in independence. These are opportunities to take risks, make judgments and learn how to build peer relationships.
Across Canada, this movement is gaining momentum:

- **Evergreen** is a not-for-profit organization that is striving to make our cities more livable. By deepening the connection between people and nature, it is improving the health of our cities – now and for the future. Its 3 core programs include: Learning Grounds (transforming school grounds), Common Grounds (conserving publicly accessible land), and Home Grounds (improving the home landscape). For more information, visit www.evergreen.ca.

- **Green Schools**: The B.C. Ministry of Education is working with the B.C. Climate Action Secretariat and collaborating with other government ministries, agencies and boards of education to establish and coordinate Green School initiatives, strategies and programs that enhance environmental sustainability. The four main themes of this organization are: (1) supporting students to become more aware and more active in environmental issues; (2) supporting teachers who want to use environmental sustainability ideas and concepts in their teaching; (3) developing school communities to be more effective, efficient and environmentally responsible; and (4) enhancing school infrastructure and transportation systems to reduce provincial greenhouse emissions. For more information, visit www.bced.gov.bc.ca/greenschools.

- **Manitoba – Nature Action Collaborative for Children**: This group is providing local leadership for an international movement that is committed to reconnecting children with nature. It is striving to make sure that Manitoba’s children remain healthy and strong, and don’t get swept away in the global trend to head indoors. For more information, visit http://www.worldforumfoundation.org/wf/nacc/index.php

- **KidActive** was inspired by the critical need to address immediate physical and mental health issues facing Canada’s young people. Their vision is for every child to enjoy healthy physical, mental and emotional development, and a strong connection to their natural environment. Currently, they are working on the development and delivery of workshops and after-school programs to children in kindergarten through Grade 8, providing teachers with practical workshops on how to get kids outside and active, as well as engaging with community partners committed to the health and well-being of children. For more information, visit www.kidactive.ca.

- On March 14, 2009, CTV aired a one-hour documentary called “Lost Adventures of Childhood” from filmmaker Scott Harper, which explored how a childhood in lockdown is stunting the way children learn and grow. For more information or to order the documentary, contact: brian.simon@ctv.ca.

- The 2nd Regional Children, Families and Nature Forum (“Get Outside! It’s in Our Nature”), sponsored by the University of Victoria, The Kesho Trust, The Children and Nature Network, Royal Roads University, B.C. Recreation and Parks Association and Mountain Equipment Co-op was held March 5-8, 2009. This event was organized to recognize the importance of creating opportunities for children and families to get outside and play, and to launch an alliance of interested individuals and organizations to be champions for children and nature in British Columbia.
Background, Reflections and Rationale for Grade

Active transportation was introduced in the 2006 Report Card based on a profile from the 2004 National Transportation Survey.\textsuperscript{139} It was noted that the participation rate of active transportation was modest in Canada and that the rate of cycling to school appeared to decrease between 1998 and 2004. The primary barriers to using active transportation at that time were distance to destination and concerns about traffic. Active transportation re-emerged in the 2008 Report Card, with a profile of Canadian data available by province/territory from a paper by Trudeau and Shepherd.\textsuperscript{127} Some other regional data sets were reported, all of which showed relatively modest rates of active transportation. The 2008 Report Card also profiled leadership on the part of the Healthy Living Unit within the Public Health Agency of Canada, a federal government department that is actively working with others (CFLRI, Federation of Canadian Municipalities, Health Canada, Health and Air Quality Bulletin, Canadian Mortgage and Housing Corporation, Environment Canada, Transport Canada) to encourage active transportation participation in Canada.

Active Transportation Grade: D

In the past year, several reviews were published that highlighted the determinants, benefits and disparities when it comes to active transportation. The grade remains a D, which reflects low participation rates across the country as evidenced by findings from multiple studies. Generally, fewer than half of Canadian children and youth are using active transportation to get to and from school; until we observe a shift to more than half, the grade will remain discouraging. A new conceptual framework on the determinants of active transportation is profiled to help guide future research initiatives in this area.
Active Transportation in Canada

Approximately half of a group of students surveyed from Alberta and British Columbia reported that they use active transportation or a combination of active and inactive transportation modes (SHAPES). Similar results were observed in Ontario (SHAPES). Active transportation rates appear to be lower in youth compared to children, as less than a third of Alberta youth reported they used active transportation daily and 50% stated they never used active transportation (WEB-Span).

The 2004 National Transportation Survey is the most recent and comprehensive national source of information available on the prevalence and determinants of active transportation. Just over a third of Canadian students reported having walked to school at least sometimes in the 12 months prior to being surveyed. About the same proportion (37%) of Canadian parents walked to their child’s school at least some of the time, and 61% who live “within a reasonable distance” of their child’s school reported having walked to the school at least some of the time. A large majority (80%) of Canadian students reported never having cycled to school in the 12 months prior to being surveyed.

While safety is somewhat of a concern, many parents who do not think it is safe to walk or cycle to school state that an improvement in safety would not change the likelihood that their child would travel to school using an active mode. While some factors cannot be controlled (e.g. weather), many changes or improvements can be made that would help Canadian children choose walking and cycling more often. These include improvements to safety, routes (e.g. existence, linkages, aesthetics, maintenance) and tax incentives.

Active transportation in Québec

The 1999 Québec Child and Adolescent Health and Social Survey provides insight into the active transportation habits of children and youth living in Quebec. Proportions of students aged 9, 13 and 16 years using different modes of transportation were estimated among a population-based sample of 3,613 children. Younger children (9 years old) were more likely to report walking to school compared to youth (13- and 16-year-olds), while the 13- and 16-year-olds were more likely to report using public transit or a school bus to get to school. Boys were more likely to report walking to school compared to girls.

Household income appeared to have a strong impact upon how children and youth get to school. Students from families whose household income was less than $30,000/year were more likely to walk to school, while students from families whose household income was more than $60,000 were more likely to be driven to school by their parents. Students from families of moderate household income ($30,000 to $60,000/year) were more likely to get to school using public transit compared to students from both lower- and higher-income families. Urban-dwelling students were more likely to get to school via walking, public transit or driving, while rural-dwelling students were more likely to get to school on a school bus. Students whose parents were born in Canada were more likely to walk or take the school bus to school compared to students who had one parent born outside of Canada.
This study’s main strength is its large, provincially representative sample. However, it is limited by a lack of information about alternative modes of active transportation (e.g. rollerblades, cycling, skateboarding) or travel distance between home and school; as well, it does not account for seasonal variation. Despite the findings being generalizable only within Quebec, the insights provided on sources of disparity are consistent with international research and are somewhat informative to the rest of Canada.

Another review confirms that boys and children of low-SES families are more likely to use active transportation. Additionally, the likelihood of active commuting cannot be clearly explained by age; it is likely that the impact of age is mediated by several other variables.140

Active transportation in Toronto

The Transportation Tomorrow Survey measured temporal and spatial trends in active transportation in the Greater Toronto Area between 1986 and 2006 in children (11 to 13 years) and youth (14 to 15 years). Between 1986 and 2001, the proportion of children and youth walking to school declined (53% to 42.5% for children, 38.6% to 30.7% for youth). There has also been a decline in the proportion of children and youth walking home from school, although overall, walking home occurs more frequently than walking to school. In 2006, younger children in the outer suburbs walked less often to school (36.1%-42.3% of trips) than did 11- to 13-year-olds in Toronto (48.1%), and Toronto’s 14- to 15-year-olds walked less often (38.3%) but used transit more (44.8%) than students in the outer suburbs.141

Does active transportation result in increased physical activity levels?

YES. It has been hypothesized that active transportation leads to increased activity via 3 potential mechanisms: (1) through the school trip itself; (2) through increased opportunities for activity presented on the way to and from school; or (3) through inducing physical activity at other times during a child’s week. There is research evidence demonstrating that physical activity increases as a result of the trip itself (mechanism 1); however, the latter two suggested mechanisms are theoretical only and have yet to be investigated in a research setting. It is important to note that there is no evidence to date that strongly suggests an association between active transportation and obesity reduction.142
A conceptual framework for active transportation in children and youth

The main moderators proposed in this framework (Figure 25) are age, gender and distance travelled. Based on previous work, the authors broadened the range of environmental factors measured to include characteristics of the neighbourhood, destination and route environment. Thus, the four sources of influence are individual factors, external factors, physical environmental factors and the main moderators. The authors propose that the individual, physical environmental and external domains are most likely to influence decision-making regarding mode of travel, while the main moderating factors (e.g., age, gender, distance to destination) are more likely to alter the strength of the association between those factors and the decision made. The framework includes children, youth and parents given that parental perception and motivation can be a key factor in the decision about transportation mode.
**Key moderators:**

Regardless of how supportive an environment is for active transportation, children are unlikely to walk or cycle if the distance is too great and the time taken deemed too long.\(^{142}\)

**Individual characteristics:**

A review of the literature shows counterintuitively that perception of road safety is not consistently or strongly associated with active transportation in children and youth. Furthermore, children’s attitudes about physical activity and their eagerness to walk have not been shown to predict active transportation.\(^{143}\) It is important to note that several confounding factors (attitudes and perceptions of parent and children, independence, motivation, car access, parental occupation, etc.) create a very complex decision-making process at the family level. Perhaps it is the case that children’s attitudes do not have a significant effect on parental decisions to facilitate active transportation. Instead, interference with parental work schedules may be the factor that prevents active transportation from happening, despite a child being highly motivated to walk to school. Clearly, there are many confounders and interactions to consider when trying to understand the decision to walk, cycle, drive or bus to school.

**External influences:**

External influences, such as weather, are non-modifiable and intuitively one would associate extreme cold or extreme heat with a decreased likelihood of walking and cycling to and from destinations. Initiatives such as Winter Active are geared toward encouraging Canadians to get out and be active, despite the sometimes frigid temperatures in this country! For more information, visit [www.winteractive.ca](http://www.winteractive.ca).

**Who do we need to target?**

The *SHAPES Ontario* data show that girls, older students and inactive or moderately active students are less likely to report using mixed or active modes of transportation to school. A study from Quebec of 3,613 children aged 9, 13 or 16 years found that girls, children of immigrants and rural-dwelling children were all less likely to walk to school.\(^{140}\)

**Green Communities’ Active & Safe Routes to School** is a comprehensive community-based initiative that taps into the increasingly urgent demand for safe, walkable neighbourhoods. Active & Safe Routes to School promotes the use of active and efficient transportation for the daily trip to school, addressing health and traffic safety issues while taking action on air pollution and climate change. For more information, visit [www.saferoutestoschool.ca](http://www.saferoutestoschool.ca).

**Characteristics of the physical environment:**

The presence of parks, playgrounds, shopping centres and friends to visit are all factors that may influence active transportation.
Opportunities to promote walking and cycling (CFLRI\textsuperscript{139})

- 93\% of parents report living within what they perceive to be a “reasonable walking distance” to their child’s school bus stop, and 96\% live within a reasonable cycling distance.
- 44\% of parents report living within what they perceive to be a “reasonable walking distance” to their child’s school, and 71\% live within a reasonable cycling distance.

Research Gaps

Physical activity and inactivity

- Develop a comprehensive assessment of physical literacy to allow the evaluation of school- and community-based interventions and the monitoring of trends.
- Design longitudinal research on interventions (including policy changes, i.e. “natural experiments”) to increase physical activity in all age groups and all settings.
- Collect physical activity data among First Nations, Inuit and Métis children.
- Develop a correction factor to facilitate comparisons between self-reported and directly measured physical activity.
- Investigate the relation of youth with high activity levels, but also high inactivity levels. Some preliminary work has shown that the two are relatively independent, though that does seem counterintuitive.
- Implement ongoing, comprehensive surveillance information for all age groups that links individual behaviour and the local environment (policy, program, facilities).
- Develop a practical and informative method of measurement for the construct of active play. Cross-disciplinary and cross-sectoral engagement will be required for success.

Active transportation

- Investigate the impact of having well-maintained and covered bicycle storage in schools on active travel.
- Research the complex role parents’ decision-making processes play in considering their children’s travel behaviours and how environmental characteristics interact with these processes. It is likely that both quantitative and qualitative research will be needed to understand this complex process.
- Research the impact of having parks to play in, or shops or friends’ houses to visit en route on the likelihood of choosing active transportation to get to and from school.
- Include distance to destination as a covariate of interest or stratify by this measure when investigating active transportation.
- Research the influence of provision of facilities, level of urbanization, route directness and gradient on active transportation.
- Investigate the influence of school support for active transportation, in the form of policy, facilities and staff. Also, explore the combined effect of a supportive home, route or destination environment (school or elsewhere) on active transportation.
- Investigate whether active transportation leads to increases or decreases in physical activity undertaken during other parts of the day.
Very little is known from a national surveillance perspective about the physical activity and health of children and youth with disabilities. In the case of children, the information is often the reported perceptions of parents and/or caregivers. Many children and youth with disabilities have intellectual limitations that do not allow them to fill out the surveys themselves, and/or the individual may have limited communication abilities. This explains why direct measures are necessary to ascertain the true health and physical activity of Canadians with disabilities. National surveys such as the PALS provide valuable information; however, we challenge federal policy-makers to conduct a national, direct measures surveillance study that specifically targets children with disabilities in Canada. This survey should differentiate between the types of disabilities (e.g. spina bifida vs. learning disability vs. autism spectrum disorder). Aggregating disability data due to small sample size or high variability does not improve the quality of the data; in fact, it only makes the data more unclear.

Disabilities

- Investigate important elements of physical activity (i.e. levels, determinants, barriers, facilitators) in children and youth with specific disabilities (with dedicated focus on preschool-aged children).
- Explore the utility of using play to increase physical activity in children and youth with disabilities.
- Collect surveillance data on the television habits of all Canadian children, including those with physical, developmental and intellectual disabilities.
- Collect better data on the organized sport participation rates of Canadian children with disabilities. Regardless of the domain, research data on children with disabilities are highly variable; this should not prevent this type of research from being conducted. More large-scale surveillance studies are needed where the different types of disabilities are addressed separately. For example, data of children with Down syndrome should not be aggregated with children with spinal cord injuries for surveillance purposes.
Recommendations for Action

General

- Develop, disseminate and evaluate physical activity guidelines and recommendations for preschool children. Review and revise guidelines on a regular basis.

- Make the outdoors safe, exciting and inviting. The job of policy-makers, health practitioners, parents, teachers, concerned citizens, community leaders and programmers is to do what is necessary to encourage and facilitate children and youth to get outside more often to play.

- Promote and vote for politicians who promise – and deliver – the following:
  - Traffic calming measures/car-free streets/very low speed limits/shared space design in residential areas (especially in new housing developments) – in other words, children are more important than cars!
  - Greening of the environment – planting trees, conserving open spaces.
  - Better parks and parklands, and play-workers to supervise open spaces of all kinds and build a sense of community.
  - Daycare and after-school care facilities, properly supervised, that involve outdoor activities in exciting environments.
  - Linkage of programs intended to help children achieve activity targets. For example, if schools help achieve 30 minutes of daily physical activity (DPA), the community (through after-school programs, sport and recreation organizations) could contribute another 30 minutes, and family settings be seen as responsible for the remainder. That is, have marketing that promotes the joint responsibility and contribution of different partners.
  - Schools that aren’t frightened (or too burdened with red tape) to provide physical exercise and fun outdoor activities as part of the children’s education.
  - International laws and policing to ensure that those who threaten children’s safety are apprehended and their activities stopped.

- Ensure variety in the sport and physical activity programming that is offered to children and youth. Also, ensure that both competitive and recreational options are made available.

- Develop programs and messaging targeted at engaging children and youth in physical activity during the after-school period.

- Continue researching the impact of active gaming and screen time on physical activity levels.

- Develop educational messaging for parents of preschool-aged children focused on the importance of balancing physical activity and screen time.
Disabilities

- Promote motor skill development programs for all young children, including those with disabilities, to develop the fundamental movement skills necessary for lifelong physical activity participation.

- Increase the opportunities for preschool-aged children, including those with developmental and behavioural disabilities, to participate in organized sport.

- Develop and implement a media campaign to promote sport and physical activity opportunities for children with disabilities. The contact information of local disabled sport organizations should be included in this campaign.

- Establish a governing body that monitors how many children with physical disabilities are participating annually in Para-sports. Resources need to be allocated to determine how many Canadian children with physical disabilities are involved in sport during childhood in order to appropriately distribute resources and address gaps in participation.
<table>
<thead>
<tr>
<th>Indicators</th>
<th>Grade</th>
<th>Components</th>
</tr>
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<tbody>
<tr>
<td>Physical Education</td>
<td>C-</td>
<td>Only 23% of schools surveyed say that only a trained physical educator teaches physical education in their school – a substantial decrease since 2001. There is a smaller proportion of students taking PE at the secondary level compared to the elementary level, yet far more teachers trained in PE work in secondary schools than in middle and elementary schools.</td>
</tr>
<tr>
<td>Sport and Physical Activity Opportunities at School</td>
<td>B-</td>
<td>Regional data from a number of jurisdictions indicate that 70% of students feel schools place some emphasis on student participation in recreational sports, and more than 80% report that their school puts some emphasis on developing positive attitudes about physical activity and self-esteem.</td>
</tr>
<tr>
<td>Infrastructure and Equipment</td>
<td>B</td>
<td>80-95% of schools have a gym, playground equipment, playing fields and paved play areas, with 60-75% of students and schools reporting these are in good condition. There has been a decrease in some types of access to baseball diamonds, skating rinks, running tracks, swimming pools, tennis courts, or weight rooms.</td>
</tr>
<tr>
<td>School Policy</td>
<td>C</td>
<td>65% of schools report having a policy to increase physical activity among students. 53% have fully implemented policies to provide a range of physical activity opportunities. 46% have fully implemented policies to hire teachers with university qualifications in PE.</td>
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</tbody>
</table>
Almost all Canadian children spend approximately 30 hours per week at school, and because of this, schools are a setting that can reach the largest proportion and the greatest diversity of children. The influence of the school setting on the physical activity levels of Canadian children and youth is an active and dynamic area of the Report Card, evidenced by a surge of new information relating to research, policy and school-based programming.
Those working in the schools should be applauded for their efforts to bring the issue of physical inactivity to the forefront. The evidence base linking physical activity not only to physical outcomes but also to academic outcomes is growing. A key story of the 2009 Report Card is the link between physical activity and academic performance. There is strong and convincing evidence to show that taking time away from academics to ensure daily PE does not negatively affect academic grades. It is time to acknowledge that healthy bodies equal healthy minds!

There is immense variability across Canada in the amount, type and quality of PE being delivered. Many different approaches are in place across the country. This year we have highlighted a few examples of school-level physical activity programs, policy evaluation systems and a new initiative aimed at providing evaluative data on PE. Daily Physical Activity (DPA) policy has come to the forefront and new data from Alberta show a range of positive outcomes from DPA. Some other provinces are focusing their efforts more at the PE level, with attempts to improve the quality of instruction by hiring staff trained in PE (New Brunswick) or by implementing mandatory PE policies (Manitoba).

It is encouraging that staff trained in PE appear to be common at the secondary level. However, a concerning finding is the number of Canadian elementary schools without staff trained in PE. Childhood is a window of opportunity to establish lifestyle behaviours and exercise habits. If children are not learning the basics of movement in elementary school, how can we expect them to be motivated to maintain sport and physical activity participation as they enter adulthood?

The data in this year’s report card indicate that both DPA and quality daily PE promote and facilitate physical activity participation. We argue that one does NOT replace the other; rather, PE is a setting where children and youth learn how to be active so that they feel confident and motivated to undertake physical activity on their own outside of PE class. DPA has a completely different purpose; it provides an excellent opportunity for children to be active with their peers at school. Finally, we propose that PE is an area that is particularly important for key disparity groups in this country. Evidence shows that many girls are not feeling engaged in the way PE is currently being delivered. Children with disabilities are increasingly being included in mainstream classrooms and they are a group that has unique pedagogical needs when it comes to PE. Evidence shows the children with disabilities may obtain the greatest benefits from physical activity – from physical and emotional benefits to academic outcomes.
Main Findings

- Most Canadian elementary and middle school students report that they take at least 1 PE class per week (CFLRI).

- High schools are more likely to report that almost all or all of their students receive PE from staff trained in PE compared to elementary and middle schools. Among those employing a staff person trained in PE, high schools are roughly 9 times more likely than elementary schools to report that a typical student receives instruction from a physical education specialist every day (CFLRI).

- The Action! Schools BC school-based intervention significantly improved the delivery of physical activity by schools and led to improvements in physical activity levels, cardiovascular health and bone health. Additionally, although more time was allocated to providing physical activity opportunities, academic achievement did not suffer.

- The majority (83%) of schools provide intramural (within school) physical activities for students. In addition, 4 out of 5 (80%) schools provide inter-school physical activities (between schools) and other physical activity outings (CFLRI).

- Gymnasiums are the most common large facility available to Canadian schools, with almost all schools (96%) reporting having access to one (CFLRI).

- Many Canadian schools report that they share their space, facilities and equipment with the local community outside of school hours (CFLRI).

- Manitoba has made PE mandatory for all 4 years of high school and is currently the only province to take such a positive step. In addition, the grade 11 and 12 credits require students to demonstrate they are engaging in at least 30 minutes of moderate to vigorous physical activity at least 5 days a week. Well done, Manitoba!

- New Brunswick has recently hired more than 100 new teachers trained in PE in the Anglophone school system, where there was a shortage of teachers with PE training in comparison to the French schools in the province. Well done, New Brunswick!

Evidence of Disparities

- Girls need to feel competent and supported in PE and want classes to include more variety of non-traditional sports and activities.

- A large proportion of children and youth with disabilities are not receiving the specialized adapted PE instruction they need.
Physical education (PE) was included in the first Report Card (2005) and was graded an F to reflect the fact that only a small proportion of schools reported providing daily PE for at least 30 minutes per day. From 2006 to 2008, PE was evaluated in the Report Card within other school physical activity opportunity or programming indicators. The return of a PE indicator to the 2009 Report Card reflects the increasing attention around the importance of maintaining this critical aspect of the school day, or, in some cases, reviving it from a nearly non-existent state. The PE grade is made up of 3 primary components: quantity, quality and policy.

The grading of this indicator is particularly challenging because of the variation between preschool, elementary and secondary school systems. The grade of C- is an average of 3 very different realities occurring across the levels of schooling.
Given that education is provincially managed and highly variable, it is difficult to discuss PE at the national level. It is important to note that the implementation of provincial/territorial mandates for PE varies considerably at the school level. In other words, simply having a provincial/territorial recommendation or guideline for PE does not ensure that it is a reality in all schools. When teachers and students are asked about how much PE they participate in, the values rarely match the guidelines. What does this mean? It appears as though provinces and territories demonstrate investment in PE when a written guideline is needed; however, whether that written guideline translates into practice is questionable.

*Why isn’t PE getting the attention it deserves?*

While a comprehensive review of each provincial and territorial jurisdiction is beyond the scope of the Report Card, we have tried, where possible, to provide examples from across the country. Collectively, we need to address the particular needs of some segments of the population who we know are not consistently being engaged in their PE classes. There needs to be a sustained commitment toward PE at the school level as well as the government level whereby the time or facilities devoted to it are not sacrificed for other subject areas and where it is given equal priority with other academic subjects.

*Which province or territory will be the next to stand up for PE?*

<table>
<thead>
<tr>
<th>Preschool</th>
<th>Elementary</th>
<th>Secondary</th>
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<tr>
<td><strong>Current situation</strong></td>
<td>Very Poor</td>
<td>Poor</td>
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<td></td>
<td></td>
<td><strong>PE is generally not taught by staff trained specifically in PE</strong></td>
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<td></td>
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<td><strong>Daily PE is uncommon</strong></td>
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<td><strong>PE classes are short in duration</strong></td>
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<td><strong>Only 1 province mandates PE through all years of secondary school</strong></td>
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<td></td>
<td></td>
<td><strong>Evidence of staff trained in PE exists in secondary schools</strong></td>
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<td></td>
<td></td>
<td><strong>Poor access to quality preschool programs</strong></td>
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<tr>
<td></td>
<td></td>
<td><strong>Lack of staff trained in PE</strong></td>
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<tr>
<td></td>
<td></td>
<td><strong>Low physical activity levels observed in daycare and early education centres</strong></td>
</tr>
</tbody>
</table>
Quantity of PE

Quantity of PE being delivered in Ontario

Data from the Ontario School Health Environment Survey (SHES) show marked variation between the elementary and secondary levels in both the number of days per week that PE is offered and in the length of PE classes (Figures 26 & 27). It is encouraging to note that 87% of Ontario secondary schools surveyed report that their students participate in PE five days per week. By contrast, elementary students in Ontario are far less likely to receive daily PE, with only 15% of schools reporting this is the case (Red Flag!!!). At the elementary level, the majority of schools report offering 2 to 3 days of PE per week. PE classes at the secondary level tend to be longer than those offered at the elementary level. Almost 90% of secondary school PE classes are 30 minutes or longer, whereas this is true in about 34% of elementary schools.

The Ontario Student Drug Use Survey (1999-2005) observed a significant decrease in the percentage of students enrolling in PE. Girls and older students were the least likely to be enrolled in PE and to participate in vigorous movement aspects of the PE class.149 These statistics identify an area that requires monitoring over time.

Quantity of PE being delivered in British Columbia

In 2007-2008, 513 B.C. school principals were surveyed as part of the BC Principals Survey on the quality, quantity and components of PE in their schools. The amount of PE offered ranged widely, from 30 to 150+ minutes per week (6 to 30+ minutes per day) (Figure 28). Very few (16%) of the elementary schools surveyed reported that they offer 150 or more minutes of PE per week. Some secondary schools allow students in grades 11 and 12 to be exempt from PE if they participate in other school physical activity opportunities. This arrangement is a forward-thinking strategy to encourage more students to be physically active in a way that suits their interests and abilities. Research continues to emerge that highlights the importance of self-efficacy and feeling competent; therefore, any way that students who don’t identify with PE can be given the opportunity to be active in a way that they enjoy is a positive thing!
Figure 26: Number of days per week that PE is offered in Ontario (Source: SHAPES-SHES).

Figure 27: Average length of PE classes in Ontario (Source: SHAPES-SHES).

Figure 28: Duration of PE being offered in elementary schools in British Columbia (Source: BC Principals Survey).
Barriers to increasing physical education

Barriers to increasing PE in schools were reported as part of the BC Principals Survey (2007-2008). Figure 29 provides an indication of what the roadblocks are, and also provides some insight into the differences between elementary and middle/secondary schools. The results show that competing curricular demands seem to be a major barrier for elementary, middle and high schools to implementing physical activity guidelines.

Figure 29: Barriers to implementing physical activity guidelines, as reported by principals in British Columbia.

In general, there is much more support to increase PE in elementary schools than in middle and secondary schools. Principals perceive strong support from students (97%) in elementary schools to increase PE, whereas less support is perceived among middle and secondary school students (54%). However, there is far more perceived opposition from teachers and principals to increasing PE time in elementary schools than there is in middle/secondary schools. It remains unclear whether this is because PE levels are already higher in secondary schools, because there are more PE staff hired in secondary schools, or other reasons.

A group of 45 teachers from Toronto elementary schools was asked to provide barriers to participation in PE. Three broad categories of barriers to implementing curriculum guidelines emerged:

1. low priority for PE (lack of resources, not enough staff trained in PE),
2. lack of performance measures for PE, and
3. lack of sufficient infrastructure and facilities for quality PE instruction.150
Making PE a priority

Schools where PE is perceived to be a priority or where there is a lot of internal and external support for increasing PE time are more likely to have healthier PE practices or policies.151

Quality of PE

Does physical education facilitate increased physical activity levels?

The SHAPES data collected in British Columbia and Alberta showed that students participating in daily PE are more active than students who do not participate in daily PE. Interestingly, this is not the case in Ontario where there appears to be no difference in the likelihood of being considered ‘active’ between those students who receive and who do not receive daily PE. Two reasons are hypothesized to explain this counterintuitive situation in Ontario:

1. Alberta and B.C. samples included both elementary and secondary school students, whereas the Ontario sample included elementary students only. PE may be a critical source (in some cases, the only source) of physical activity among secondary students but a less critical source of physical activity among younger students.

2. All elementary schools in Ontario are mandated by the Ministry of Education to provide students up to Grade 8 with 20 minutes of DPA. This policy may be compensating for the lack of daily PE provided to elementary students in Ontario.

The Beyond an Apple a Day (BAAD) Project explored the policies that guide physical activity and nutrition programming in junior high schools in Alberta. When principals, parent advisory committee representatives and superintendents were asked to identify the most important issues in the school, PE ranked 8th after academic achievement (#1) and extracurricular sport (#6). The most important factors affecting decisions regarding physical activity and/or nutrition-related school health issues were the support of the principal and the practical benefits to the students.
More research is required to investigate the relationship between student participation in daily PE and physical activity levels to determine if PE as it stands now is an effective vehicle for increasing youth physical activity, or if DPA is an effective alternative. Perhaps the ultimate goal of PE is not to be a key source of physical activity in a child’s life. Rather, PE is where students learn how to play, move, jump, throw and run so they are more competent and confident to do these things outside of PE, whether that is through joining an organized sport or physical activity program, or simply by playing in their own backyard at home. In other words, perhaps the debate about what is better, PE or DPA, is irrelevant. Both are necessary for different reasons: PE teaches children and youth how to be active, while DPA facilitates physical activity in children and youth. The “notion” of DPA contributing to children reaching the standard 90 minutes of PA daily could be extended beyond the school setting, to include after school programs (i.e. community component) and homes (family component). If each setting worked together to contribute 30 minutes, all our children and youth could reach the standard.

Quality of physical education instruction

The 2008 Report Card\textsuperscript{152} highlighted that 65% of students from a selection of elementary and secondary schools surveyed in Canada receive PE instruction from a teacher trained in PE. Qualified PE teachers are an essential component to any successful PE program. In the late 1980s and early 1990s, there was a decline in the use of teachers trained in PE within the Canadian school system. As a result, generalist teachers often fulfill the PE teaching role.

The 2006 Schools Survey (CFLRI) found that there is considerable variation among schools in their use of human resources to teach PE. Almost 1 in 5 schools (18%) said a principal or vice-principal teaches PE, whereas 9% of schools indicate PE is taught by a volunteer. The majority of schools (71%) reported using a classroom teacher for PE instruction, and 77% use staff with specific PE training. The proportions do not add up because PE is often taught by more than one individual and these individuals may have more than one role within the schools (e.g. teach physical education but also be a classroom teacher or principal). When one examines the proportion of schools where PE is only taught by staff trained in PE, the percentage drops dramatically to 23% of schools, a value that is considerably lower than that observed in 2001.
Data from the BC Principals Survey (2007-2008) shows that only 15% of elementary students are receiving PE from a specialist. This is very different to secondary schools in B.C., where 65% of students receive PE from a specialist. In general, there are more requirements in place among middle/secondary schools as to the type of curriculum teachers use for PE and how they assess motor skills and fitness as part of the PE curriculum. The data suggest that there is a perception among schools that specialized training in PE is not required until children are older. However, the elementary school years are a time of critical importance in the establishment of proper motor development and skills. **We argue that elementary students require high-quality PE instruction to ensure that they start off on the right path when it comes to physical activity and sport participation.**

Additional Qualification (AQ) courses are offered by the Ontario College of Teachers to increase the skill and knowledge base of teachers for a given topic area. Thirty percent of Ontario schools have no teachers with any AQ qualification courses in PE, and 44% have no teachers who have completed the AQ Honours Specialists in PE. The school-level data collected as part of the SHAPES research program is designed to determine how close a school is to being considered a ‘healthy school’ (Figure 30). Compared to other aspects of being a healthy school, ‘high-quality instruction’ was the component where the largest proportion of schools (48%), especially elementary schools (67%), were still in the initiation phase.153

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**Phase 1: Initiation**

A school currently in the **Initiation** phase:

- On average, falls short of meeting the recommendations related to school capacity for physical activity.
- Exhibits extensive room for improvement.

**Phase 2: Action**

A school currently in the **Action** phase:

- Meets the recommendations in several, but not all, areas related to school capacity for physical activity.
- Exhibits some room for improvement.

**Phase 3: Maintenance**

A school currently in the **Maintenance** phase:

- Consistently meets or exceeds the recommendations related to school capacity for physical activity.
- Is encouraged to maintain the current level of commitment to supporting physical activity at school.

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Figure 30: The Healthy School Continuum for physical activity (SHAPES).
Who is teaching physical education to Canadian children with disabilities?

The 2006 Schools Survey (CFLRI) reported that 65% of Canadian schools report that almost all or all of their students regularly receive PE instruction from a specialist. A further 14% of schools indicate that most students (65% to 90% of student population) have such a resource teaching PE and 8% cite that many students (50% to 65% of students) have such a resource. In other words, the health and PE curriculum is being delivered to 35% of Canadian children at least sometimes by teachers who may have little or no training in health and PE. In Canada, children with disabilities are being included in regular classrooms on a more routine basis. For example, in Ontario, 14% of the student population for 290,000 children attending publicly funded elementary and secondary schools receive special education programs or services, and 82% to 86% of these children with disabilities were included in regular classrooms for more than half the day in the 2007-2008 school year. The Ministry of Education for Newfoundland and Labrador reported that 17% of their enrolment was made up of children with disabilities in 2007-2008, and the Ministry of Education for British Columbia reported an 8% increase in students with sensory difficulties from 2001-2006 and an increase of 11% for children with behaviour disabilities. Therefore, the question is: Who is teaching PE to Canadian children with disabilities? Although little Canadian data are available on this issue, it is clear that a large portion of children with disabilities are receiving physical education instruction from teachers not trained in physical education, let alone adapted physical education. Not all children with disabilities require adapted physical education services; however, behavioural problems, general learning challenges and Individual Education Plans will be issues to consider for teaching all these children in either PE or in the regular classrooms. PE is a critical pathway for children to learn the skills necessary for participation in physical activity across the lifespan. Teaching PE to children with disabilities is a challenging task that most generalist teachers struggle with. The evidence indicates that children with disabilities engage in less physical activity than their peers; physical education is a venue and an opportunity for these children to participate and learn the skills they need to be more active. Teachers need more support and training to provide the best educational experience possible to children with disabilities in Canada.

Red Flag: Preschool-aged children are not engaging in enough physical activity!

The UNICEF Research Centre recently published a report card titled The Child Care Transition. This report card takes a critical look at early childhood education and care in economically advanced countries. The focus is highly topical given that today’s generation of children is the first in which a majority is spending a large part of early childhood in some form of out-of-home child care. Concurrent with this, research is demonstrating that loving, stable, secure and stimulating relationships with caregivers in the earliest months or years of life are critical for every aspect of a child’s development. In comparison to 24 other OECD countries, Canada was tied for last place (with Ireland) and meets only 1 of 10 established benchmarks. The only explanation offered for why Canada is so far behind is that “Canada postpones substantial public investment in education until children reach the age of five.”
A market research report commissioned by the Best Start Resource Centre in Ontario found that one-third of parents believe that their child does not get enough physical activity at daycare, at school or at home. More than half of parents felt they don’t have good knowledge or understanding of how much or what kind of physical activity their preschooler needs. About a quarter of parents reported that they seek advice from physicians on physical activity, and only 12% seek input from public and community health providers. The majority reported that they access friends, family and magazines for physical activity information. There is clearly a need to develop comprehensive materials targeted at parents to help them better understand how to facilitate and promote healthy physical activity habits in their preschool-aged children.

Overall, the literature is highly consistent in demonstrating that preschool-age children (3 to 5 years) spend very little time in moderate to vigorous physical activity (approximately 3%) and the majority of their time in sedentary behaviours (approximately 77%). Although it is not known whether this pattern is the same for children with disabilities, it is hypothesized that these children are at an even greater disadvantage.

Unfortunately, we have no surveillance data from within Canada on how much physical activity preschool-aged children are accumulating. Given the findings of the UNICEF report card, it is likely that if we examined program offerings in early childhood care centres in Canada, the results would be discouraging. Perhaps it is time to start investigating this further!

What are kids learning in PE?

The 2006 Schools Survey (CFLRI) found that approximately three-quarters (74%) of Canadian schools report placing a strong emphasis on developing knowledge and understanding about health and wellness, and on developing skills for lifelong physical activity (77%) within their physical education program. A slightly higher proportion of schools (80%) report placing a strong emphasis on regular student involvement in physical activity. The SHAPES research project (British Columbia and Ontario) found that 69% of students are learning about the benefits of physical activity, 49% about the illnesses related to an inactive lifestyle, 45% about the influences of families on physical activity, 39% about the influence of media and 57% about the influence of peers.

What a girl wants: to feel competent and supported

The Trial for Activity in Adolescent Girls (TAAG) is a school- and community-based physical activity intervention for middle school girls in the United States. Self-efficacy was the strongest correlate of PE class enjoyment, followed by perceived benefits, race/ethnicity and teachers’ support for girls’ physical activity, as compared to boys, at the school. These findings suggest that efforts to enhance girls’ self-efficacy, their perception of benefits and the provision of a supportive PE class environment that promotes gender equality can potentially increase PE enjoyment among young girls.
Grade 6 and 7 girls from Western Canada (n = 90) participated in focus groups, questionnaires and interviews regarding their experience in PE. Four themes were identified as notable aspects of the experiences of girls in middle school PE:

1. **Variety and choice for a lifetime**
   “It seems that the things we do in PE are the favourites of only a few of us...mostly the ones who play a lot of sports already.”
   “I dream about doing hip hop”
   “One time we got to do yoga. I loved it”

2. **Personal competence**
   “We hardly ever get to do anything in PE that I’m good at”
   “I wish we would get time to practise how to do things.... The teacher shows us something then, ta-da, we are supposed to be able to do it”

3. **A healthy body is a moving body**
   “I feel healthier when I exercise”

4. **Emerging sense of gender equity**
   “In PE it seems that the teacher chooses what the boys want to do and not what we want to do”

These included negative perceptions of girls’ competence by teachers, coaches and peers; the physical education curriculum and lack of opportunity to engage in activities they enjoy; social attitudes around ‘appropriate’ activities for girls; and practical factors such as cost and transportation. Despite these barriers, girls demonstrated ways in which they negotiated their social and physical environments in order to engage in activities they enjoy. This suggests that girls do value physical activity, but they require more supportive environments and increased opportunities.

**Leadership in New Brunswick**

It is encouraging to note that in May 2008, New Brunswick announced it would be hiring at least 111 elementary school teaching positions in the Anglophone sector for instruction in PE and music in time for the 2008-2009 school year, and also made a commitment that students in kindergarten through Grade 5 would receive more instructional time in PE. At the time of the press release, the requirement for PE was 100 minutes per week, while an average of 91 minutes per week was actually occurring. The hope is that within a few years, the average will be up to 150 minutes per week.
Background, Reflections and Rationale for Grade

School-based physical activity programs remained as an incomplete grade in the 2005 and 2006. In 2007, the grade was a C and then in 2008, the grade dropped to C-. Improvement has been seen this year with just over half of students reporting they participated in physical activity programs at school. The majority (83%) of schools provide intramural (within school) physical activities for students. In addition, 4 out of 5 (80%) schools provide inter-school (between schools) physical activities and other physical activity outings. Newly available data for Action! Schools BC shows the initiative is an excellent model for school-based physical activity programming and promotion. The Joint Consortium for School Health is also working hard to provide schools with resources to improve physical activity opportunities in a way that meets the unique needs of each school. The high proportion of students reporting that they participate in physical activity programs at school, combined with the emergence of new school-based initiatives, has caused a grade increase to a B-. To raise the grade, evidence is needed that these school-based programs are available in most provinces and territories. In addition, there needs to be a commitment in all programs to rigorously evaluate outcomes. Without this key step, the evidence needed to drive policy in this area will be limited.

Sport And Physical Activity Opportunities
Grade: B-
Proportion of Schools Offering Physical Activity Opportunities

The BC Principals Survey showed that greater physical activity opportunities exist in elementary schools than in middle and high schools (Figure 31). Participation in walking/cycling to school programs in middle and high schools is much lower than in elementary schools (45% vs. 18%), as is participation in other physical activity programs (91% vs. 37%). The high participation in other physical activity programs reported by elementary schools may be a result of Action Schools! BC, which has been promoted in BC for more than 5 years and has had an unprecedented uptake. In Ontario, SHAPES-SHES reported that 83.3% of schools reported offering intramural programs or clubs involving physical activity. Variation within the province was evident, with 74% of northern Ontario schools and 85% of southern Ontario schools reporting active intramurals. Active intramurals were also reported more often in secondary schools (88%) when compared to elementary schools (82%). Similarly, secondary schools reported offering active intramurals, on average, 4 days a week, whereas elementary schools reported offering active intramurals or days per week, on average.

Perception of Students

Thirty-three percent of students surveyed in Ontario, British Columbia and Alberta reported that too few opportunities for sport are offered at their school. This was slightly higher in Ontario (38%) when compared to Alberta (35%) and British Columbia (29%). Seventy-five percent of students felt that their school places at least some emphasis on student participation in competitive sports, and 70% felt the schools place at least some emphasis on student participation in recreational sports. Furthermore, the majority of students reported that their school puts at least some emphasis on developing positive attitudes about physical activity and self-esteem (84% and 81%, respectively).
School Climate

There are many facets of student participation in physical activity that can be encouraged and supported by schools. The 2006 Schools Survey (CFLRI) reported that more than half (58%) of Canadian schools report placing a strong emphasis on student participation in recreational team sports, 37% report a strong emphasis on participation in competitive team sports, and 53% report a strong emphasis on participation in individual physical activities or sports. Further, 46% emphasize developing strong sports teams that represent their school. Almost three-quarters of schools (72%) report a strong emphasis on increasing girls’ participation in sports and physical activity, 53% on a “no cut” approach, 71% on an “everybody plays” approach, and 75% on full participation of students with disabilities.

Data collected at the school level in Ontario show that schools are working hard to promote physical activity by recognizing students for participation in intramural (elementary: 74%, secondary: 68%) and interschool (elementary: 86%, secondary: 92%) clubs and activities. Physical activity is used as a reward in more than half of elementary and secondary schools. It is very encouraging to note that almost all schools report that they place emphasis on maximizing participation rather than focusing on competition (SHES Ontario). In addition, physical activity is rarely reported as a disciplinary measure (i.e. taken away as the result of bad behaviour).

Teachers and principals should never take away physical education as a form of punishment for bad behaviour for any child!!

In anticipation of the 2010 Paralympic Games to be held in Vancouver, a Pan-Canadian Paralympic School Week is scheduled for November 2-6, 2009. The aim is to expose students to the incredible sporting feats of Paralympic athletes, and help them realize the value of active participation in sport and fitness. For more information or to involve your school, visit www.vancouver2010.com.

A Cochrane Review was published in 2009 on the effectiveness of school-based physical activity promotion programs. Findings show that there is good evidence that school-based physical activity interventions are effective in increasing duration of physical activity, reducing blood cholesterol and time spent watching TV, and increasing fitness levels. However, it is important to note that school-based programs have yet to demonstrate a marked influence on obesity in children.
School-Based Physical Activity Programs

Examples of national initiatives

Joint Consortium for School Health (JCSH)

In Canada, the JCSH model (Figure 32) supports and encourages the partnerships between health and education that are essential to comprehensive school health. It works across provincial, territorial and federal governments to better coordinate and integrate efforts that champion improved health and learning for children and youth. Comprehensive school health is an internationally recognized framework for supporting improvements in students’ educational outcomes while addressing school health in a planned, integrated and holistic way. It is not just about what happens in the classroom. Rather, it encompasses the whole school environment with actions addressing four distinct but interrelated pillars that provide a strong foundation for comprehensive school health:

- Social and physical environment
- Teaching & learning
- Partnerships & services
- Healthy school policy

The JCSH Healthy School Planner is an online tool designed to help Canadian schools create healthier environments. It offers individual schools a way to assess the overall state of their environment as well as the choice to zero in on one or more specific topics such as healthy eating, physical activity or tobacco use. Pilot data have been collected and anecdotal reports indicate that the program is being well received. For example:

“We have been at this for a while and it has made great changes to our school community and especially our students. We will be using the assessment to help with our planning for next year; as well, it helped us realize where we are and where we want to go, as it made for great discussion as we were filling out the forms.”

For more information on the Healthy School Planner and/or comprehensive school health in Canada, contact the Consortium at inquiry@jcsh-cces.ca, or visit www.jcsh-cces.ca.

Figure 32: The four pillars of comprehensive school health.
The Canadian Assessment of Physical Literacy

Researchers in the Healthy Active Living and Obesity Research Group at the Children’s Hospital of Eastern Ontario (CHEO) Research Institute are in the process of developing a tool to assess the physical literacy of children. Physical literacy is a construct that captures the essence of what a quality physical education or community sport/ activity program aims to achieve. Physical literacy is deemed to have four core domains: (a) physical fitness (cardio-respiratory, muscular strength and flexibility), (b) motor behaviour (fundamental motor skill proficiency), (c) physical activity (objectively measured daily activity), and (d) psycho-social/cognitive factors (awareness, knowledge and understanding). The aim of this project is to develop a comprehensive tool to measure physical literacy in Canadian children. This will allow education, recreation and health experts to monitor this important measure and better understand how sport, physical education and recreation programming impact on the physical literacy of the children. In measuring the physical literacy of the children we will also be able to provide information for teachers, program leaders and coaches to improve upon existing programs, and ideas and avenues for the creation of new physical activity programs.

Examples of provincial initiatives

Action Schools! BC

Action Schools! BC (AS! BC) is a multi-level, multi-sectoral partnership that mobilizes schools and the larger community of education, health and physical activity stakeholders to enhance children’s physical activity levels. In 2004, five core provincial agencies (B.C. Ministry of Health Services, B.C. Ministry of Small Business and Economic Development, B.C. Ministry of Education, 2010 Legacies Now, Provincial Health Services Authority), provincial stakeholders in childhood education and physical activity and an interdisciplinary research team convened to take meaningful action to improve child health. With funding from the B.C. Government and the Canadian Institutes of Health Research, the AS! BC team conducted evaluations that clearly demonstrated that the AS! BC school-based intervention significantly improved the delivery of physical activity by schools and improved physical activity levels, cardiovascular health (by 25% compared with controls) and bone health, in boys and girls. In addition, although more time was allocated to providing physical activity opportunities, academic achievement did not suffer. The outcomes of this evaluation served as a catalyst for a commitment by the provincial government ($15 million) to disseminate the model across British Columbia and for its expansion to include children from kindergarten to Grade 3, middle school and eventually high school. The rapid uptake of this model is unprecedented. Current use of the AS! BC framework is high with over 91% (1402/1539) of schools adopting the Grade 4 to 7 resources, 89% the K to 3 resources and 85% the middle school resources. From a baseline enrolment of 500 children in 2004, approximately 450,000 children in British Columbia currently participate in AS! BC. For more information, visit www.actionschoolsbc.ca.
The Canadian Cancer Society is leading the development of national capacity to link research, policy and practice related to population level intervention. Local data collection and feedback systems are integral to this capacity. The SHAPES is one such system. It generates health profiles of schools, using standard core items. SHAPES is being used for planning, evaluation, surveillance and research across Canada. It was created by the Canadian Cancer Society’s Centre for Behavioural Research and Program Evaluation and the Population Health Research Group at the University of Waterloo. To date, SHAPES projects have engaged all 10 provinces, and the surveys have been completed in more than 1,500 schools by more than 400,000 students from across Canada. Recently, SHAPES teamed with the Joint Consortium for School Health to make the school-level assessment (Healthy School Planner) available free online (www.jcsh-healthyschooltool.uwaterloo.ca/jcshsite_app/controller/index.cfm).

The overall aim of APPLE Schools is to make the healthy choice the easy choice by changing the school environment. The unique feature that sets this program apart is the allocation of resources to hire one full-time school health facilitator in each APPLE School. These facilitators engage all stakeholders within the school community to identify current policies and programs that support healthy eating and active living choices for students. In addition, they help school communities identify barriers that prevent students from making healthy choices. The project team will track changes in the health, nutrition and physical activity of students annually over the term of the project, which is from January 2008 until June 2011. For more information, visit www.appleschools.ca.

The Alberta government, through Alberta Health and Wellness, has invested $18 million into programs that promote healthy eating and active living for children and youth. The primary aim of REAL Kids Alberta is to evaluate Alberta Health and Wellness’s Healthy Weights for Children and Youth initiative, in order to learn whether it is effective in promoting the health of children and youth in Alberta. The evaluation includes school-based data collection in the spring of 2008, to be repeated in 2010 on a new group of Grade 5 students. For more information, see www.realkidsalberta.ca.
Background, Reflections and Rationale for Grade

The grade for school Infrastructure and Equipment is made up of the proportion of schools reporting they have adequate space, facilities and equipment, and the proportion of schools that allow off-hours access to their facilities. While the majority of schools report that facilities and equipment are adequate, long-term maintenance is an issue worth more attention. The grade for 2009 is B; this reflects the fact that very few schools report a lack of infrastructure and equipment is acting as a barrier to offering physical activity opportunities. The grade also reflects strong attempts on the part of most schools to share their space, facilities and equipment with community groups when possible.

The importance of this indicator is evident in the data from the HBSC 2005-2006. Individual aspects of the school recreational environment were modestly related to adolescents’ physical activity at school, particularly that which occurs during free time. Interestingly, the cumulative effect of school recreational features on students’ physical activity was greater than the modest associations observed between individual characteristics and adolescents’ physical activity at school. In other words, a combination of several school environment factors was more predictive of physical activity than some characteristics of the individuals themselves.
Adequate Space, Facilities and Equipment

Gymnasiums are the most common large facility available to Canadian schools, with almost all schools (96%) reporting having access to one. The majority of schools also reported having playground equipment (79%) and baseball diamonds (79%). Just over half (55%) reported having some other physical activity room, and a similar proportion (54%) have access to a skating rink. About one-third of schools have access to a running track (33%), swimming pool (33%) and/or tennis court (32%). Slightly fewer indicated they have a designated weight room (27%) or fitness centre available (26%), and only 9% have a dance studio. There has been a decrease in the proportion of schools claiming access to baseball diamonds, skating rinks, running tracks, swimming pools, tennis courts and/or weight rooms since 2001. A slight increase has occurred in the proportion of schools that cite availability of other rooms for physical activity (2006 Schools Survey, CFLRI).

Most school officials surveyed in the BAAD study out of Alberta stated that their school had adequate facilities and programs geared toward physical activity (93%). Principals in British Columbia did not paint such a positive picture, with 38% of elementary school principals reporting that their school had inadequate facilities and space, whereas only 6.5% reported that equipment was inadequate. Data from the 2005-2006 HBSC found that 92.2% of schools reported having a playing field and 93.5% reported having a gymnasium; however, only 66.2% agreed their playing field was in good condition and 83.4% agreed their gymnasium was in good condition. Beyond the provision of facilities, space and equipment requires sustained funding for maintenance and repair.

Evidence for how the school's physical environment affects physical activity is in its infancy. A review of 33 studies concluded that children’s participation in physical activity is positively associated with publicly provided recreational infrastructure. Another study found that girls and boys were more likely to choose to be active when there were many improvements to activity areas and when adults supervised the activities. An environmental factor of particular importance to children’s physical activity appears to be the presence of parks and open space. ‘Green’ schools are emerging and strive to include greater diversity of landscaping and design. The theory behind this approach is that by diversifying the play repertoire across a range of enjoyable and non-competitive options, more opportunities for play are created for boys and girls of all ages, interests and abilities.
Off-Hours Access to Space, Facilities and Equipment

Sharing school facilities and equipment with the community is a great strategy to maximize the usage of space, facilities and equipment. Data from the 2006 Schools Survey (CFLRI) found that 91% of schools reported that children are allowed to use their outdoor facilities for physical activity outside of school hours and 56% report this for indoor facilities. Similarly, 89% of schools report allowing community groups to use their facilities outside school hours, a proportion that is down slightly from what was reported 5 years earlier.

The Ontario SHAPES-SHES revealed that, generally, secondary schools allow greater access by students to facilities when compared to elementary schools. This may be due to issues around supervision and liability with younger students (Figure 33). Most schools in Ontario (95% of elementary schools, 96% of secondary schools) reported sharing their facilities with community groups during off-hours. This is consistent with data from CFLRI, where 89% of schools reported that they share their facilities.

Figure 33: The proportion of elementary and secondary schools in Ontario that report allowing off-hours access to facilities and equipment (Source: SHAPES).
Background, Reflections and Rationale for Grade

School policy is a new indicator this year; it has been included to reflect the increasing attention being given to the important role of the school environment, and policies therein, in facilitating physical activity for children and youth. Healthy School Policy forms one quadrant of a healthy school environment, according to Canada’s Joint Consortium for School Health (www.jcsh-cces.ca). Furthermore, a Daily Physical Activity (DPA) policy has been in place since 2005 in Ontario and Alberta, with British Columbia coming on board in September 2008. Manitoba has taken a different approach in its schools by making PE mandatory for each year of secondary school. Other school-related policies that promote or hinder physical activity were considered in the grading of this indicator. The grade of C is a reflection of positive steps evident in relation to school policy; however, there is room for improvement in many areas, most notably program evaluation and teacher engagement.

School Policy
Grade: C

Daily Physical Activity

DPA is a policy that has been implemented in several provinces; however, very little evaluative information is currently available. Alberta is the first province to publish comprehensive evaluative data on DPA implementation. The Alberta DPA policy states that school authorities must ensure that all students in grades 1 to 9 are physically active for a minimum of 30 minutes daily through activities that are organized by the school. The goal of DPA is to increase students’ physical activity levels, based on the belief that healthy students are better able to learn, and that school communities provide supportive environments for students to develop positive habits needed for a healthy, active lifestyle.
Alberta Education: Daily Physical Activity Survey Report\textsuperscript{176}

To gather information from teachers and principals regarding their perceptions of DPA, a survey was completed between March 30 and April 24, 2007. In total, 1,025 surveys were completed by teachers (60%) and principals (40%) – a representation of at least 83 different school authorities.

**Key findings regarding DPA in Alberta\textsuperscript{176}**

- The majority of respondents (58.3%) indicated DPA is being offered through daily PE classes, and three-quarters reported that DPA is scheduled into the school timetable.
- 47.6% reported that DPA is being delivered by both PE and classroom teachers.
- More than half of respondents (53.5%) reported that children in their school are active for a minimum of 30 minutes per day.
- Respondents indicated the intensity of movement during DPA sessions is less intense than that incurred during PE classes.
- Respondents reported DPA is being implemented primarily through maximizing facility usage within the school (87.8%) and maximizing outdoor opportunities on the school grounds (74.1%).
- The most common barriers reported by teachers and principals included: time allocation and timetabling, and lack of facilities and/or space.
- 84.4% ‘strongly agreed’ or ‘somewhat agreed’ that students were satisfied with the DPA opportunities made available to them.
- 76.5% felt parents were generally supportive of DPA.
- Principals were more likely to respond favourably toward DPA than teachers.

**Benefits Beyond DPA**

More than half of respondents indicated their schools had increased resources (other than the DPA funding) allocated to physical activity opportunities since the implementation of DPA. It is encouraging to note that prior to DPA implementation in Alberta, daily PE classes were offered in 30% of the respondent schools; in a more recent survey completed after DPA implementation, 70% of teachers reported that daily PE is occurring at their school.\textsuperscript{176}

**Key recommendations:**

Based on the results of the DPA Survey, key recommendations were made. First, greater distribution of the DPA Handbook as well as new complementary topic-specific booklets is needed. To encourage teacher perception of DPA, it was recommended that success stories and promising practices be highlighted on the Alberta Educator’s DPA web page. Furthermore, the implementation of mentorship opportunities for teachers was recommended to increase knowledge about healthy living and to promote school connectedness.\textsuperscript{176}

**Evaluation of DPA:**

School authorities appear to be passively monitoring DPA implementation, with only 32.3% of principals reporting that they are required to submit DPA information to school authorities as part of the Annual Education Results Report. One of the key recommendations out of the report is to develop an ‘Alberta Healthy Schools Analysis Tool’ to better evaluate DPA and other Healthy Alberta School Communities strategic issues.\textsuperscript{176}
Mandatory PE

In September 2008, Manitoba became the first province in Canada to take a strong leadership role regarding PE policy. Students entering Grade 10 in September 2008 were required to complete 4 credits of Health Education /Physical Education (HE/PE) by graduation. Basically, students are now required to obtain a HE/PE credit for each of the 4 years of high school. Manitoba’s grades 11 and 12 credits set explicit expectations for 30 minutes of moderate and vigorous physical activity at least five days a week, though in semestered schools, this only applies during one semester. The curriculum is focused on developing active, healthy lifestyles through in-class and out-of-class activities. In other words, students can opt to satisfy the HE/PE requirement by supplementing traditional PE with out-of-school physical activity pursuits. This flexible approach helps engage more students and also lessens the burdens on teachers and schools that may have inadequate facilities and equipment to satisfy the HE/PE policy requirements completely within the school setting. Students are encouraged to take greater ownership of their own physical fitness and find activities suited to their interests and abilities. To help teachers with the implementation of this policy, the Manitoba Government has introduced several resources to promote physical activity for children and families in response to the all-party “Healthy Kids, Healthy FuturesTask Force Report” released in June, 2005. The value of this policy is that it requires specific amounts of PE and stems the dropout in PE typically observed during secondary school. In other provinces, rates of participation in PE decline dramatically once the required credits are completed.

Evaluation

It is encouraging to note that Manitoba has partnered with Canadian researchers to ensure that high-quality evaluative data are collected both before and during the implementation of the new policy. To a large extent, these data are being collected thanks to extensive time and resources put forth by the Manitoba Regional Health Authorities. Baseline data collection was completed in June 2008. The Youth Health Survey was used to collect self-reported physical activity data and physical activity determinants data with students from a census of Manitoba secondary schools. Regional Health Authorities were collecting these data to inform their Community Health Assessment and have partnered with the research team to inform the implementation and impact of the new PE policy. In addition, a provincially representative sub-sample of 32 schools completed the Healthy School Planner, an assessment of resources, facilities and programs related to physical activity. Seven-day accelerometer data were collected from approximately 500 students within the sub-sample. Finally, extensive interview data were collected with key Manitoba stakeholders responsible for the development of both the PE strategy and revised PE curriculum.

Future data collection

Follow-up data collection is planned and will take place between 2009 and 2012. The Youth Health Survey will be administered to a census of Manitoba secondary schools by 2011-2012. Again, Regional Health Authorities will collect these data for local purposes but are also planning to partner with the larger research investigation. The SHAPES School Health Environment Survey (SHAPES-SHES) will also be administered each year over the next 3 years. As well, interviews with key school stakeholders will be
conducted over the next 3 years to determine the varying level of implementation across schools. Finally, 7-day accelerometer data will be collected longitudinally from a participating sample of students.

Other School-Based Policies Aimed at Increasing Physical Activity

The 2005-2006 HBSC Survey found that 64.7% of schools surveyed reported having a policy to increase physical activity among students. According to the BAAD study, only 32% of superintendents and 37% of principals in Alberta reported their district or school had written policies related to physical activity. In Ontario, 12% of schools surveyed reported that they had a Healthy School Committee that oversees policies and practices concerning physical activity (SHES Ontario). Presence of such a committee was related to the school receiving better ratings for a “Healthy School Environment.” The 2006 Schools Survey (CFLRI) provides some information about other policies relating to physical activity in schools (see Figure 34).

Policy and Research

The implementation of policies in the school offers unique opportunities for conducting research and evaluation. The use of natural experiments to contribute evidence on the effectiveness of policy interventions is an underused tool for public health. The challenge in evaluating policy interventions as natural experiments are twofold: (1) lack of baseline data available, and (2) adoption across large jurisdictions (i.e. provinces) resulting in wide variation in the design and implementation of interventions.178

Figure 34: The proportion of schools with policies relating to physical activity in children and youth (Source: 2006 Schools Survey, CFLRI).175
Research Gaps

- Asses PE and school-based physical activity programs to evaluate the trends and the effectiveness of existing and new programs.

- Increase the understanding of self-reported information on programs. Qualitative research is required to critically examine the accuracy of principal- and/or teacher-reported data regarding PE and physical activity opportunities in schools.

- Standardize tools to assess PE. We need to better assess time spent in PE and standardize its assessment. At the very least, we need to measure frequency and duration of PE time per week, but also need to measure whether students are receiving PE for half of the year or the full year. Failure to assess whether students are receiving PE for the full school year may grossly overestimate the time students spend in PE.

- Investigate what other physical activity students do when they are exempt from PE.

- Examine how research is conducted so that it adds value at multiple levels. For example, access to schools is becoming more challenging and threatens the representativeness of many studies. Ensuring that we use research methods that consider immediate value to the school may help stem the parade away from granting access.

- Investigate whether or not Canadian children with disabilities are having their PE needs met.
Recommendations for Action

- Evaluate DPA and its alternatives (e.g. extending curriculum time with explicit activity targets) in all provinces where it is being implemented.

- Develop and implement more PE policies like those reported in Manitoba and New Brunswick.

- Ensure that robust, ongoing assessments aimed at improvement are in place to support, monitor and evaluate the implementation of healthy active living policies.

- Ensure that new program developments build off, or replicate, existing successful interventions, programs and policies.

- Develop a system that highlights the stories describing evidence-informed programs and policies.

- Harmonize and standardize program assessment protocols.
<table>
<thead>
<tr>
<th>Indicators</th>
<th>Grade</th>
<th>Components</th>
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<tbody>
<tr>
<td>Family Physical Activity</td>
<td>C+</td>
<td>Parents do not have a strong sense of their children’s actual physical activity levels – one regional study indicates that 88% of parents say their kids are physically active, yet objective measures indicate that 87% of children are not meeting physical activity guidelines. However, there is evidence to indicate parents are working to ensure their kids are active through encouragement, financial support, transportation and volunteering.</td>
</tr>
<tr>
<td>Peer Influence</td>
<td>INC</td>
<td>While there are some interesting findings with respect to the influence of peer support on activity levels, there is not enough information at this time to assign a grade.</td>
</tr>
</tbody>
</table>
Active parents raise active kids. Evidence indicates that family role models and parental perceptions are key to ensuring children and youth are physically active. Other evidence indicates that peer engagement in physical activity contributes in a positive manner to physical activity levels, enjoyment and participation. There is even research to remind us all that sometimes the most important predictor of a complex behaviour is too obvious for us to see: that physical activity needs to be fun!
All previous Report Cards have examined aspects of the family environment and how they relate to physical activity in children and youth. This year, the indicators have been consolidated into one overall indicator for family. The indicator is made up of parental modelling of physical activity, parental perceptions of physical activity, and ensuring children and youth are active. An important message is that parents may often perceive that their children are active when in fact they are not. This disconnect is important to discuss given that many health surveys, particularly those of younger children, rely on parents’ proxy reports of their children’s physical activity. We also look at parental modelling of sedentary behaviour. Parents often report time as a barrier to getting their children active; however, recent data from Statistics Canada showed that many Canadian adults are spending well over 15 hours a week in front of the TV.180

Previously, the Report Card has not investigated the important influence peers can have on physical activity. The influence of peers is discussed for the first time in the 2009 Report Card. Children and youth generally develop friendships based on common interests and activities and as a result, tend to spend considerable amounts of time together after school. For example, 43% of boys in grades 6 and 8 reported that they spend 4 to 5 days per week with friends after school.179 Among girls, this proportion was lower at about 37%.179 A large majority (78%) of children and youth surveyed in several Canadian provinces reported they have at least 3 friends whom they consider active.

Main Findings

- In 2005, children’s sport participation rate was 35% if no parents were involved, compared to 57% if at least one parent was an active participant. When at least one parent was involved as an administrator, the children’s participation rate jumped to 80%.61

- Nearly 3 in 10 Canadian adults reported watching more than 15 hours of TV per week, and 19% reported watching more than 21 hours per week (approximately 3 hours/day).180

- Overall, 78% of students surveyed from Ontario, New Brunswick, Alberta and British Columbia say they have 3 or more friends whom they consider active (SHAPES).

- Students from Ontario, New Brunswick, Alberta and British Columbia who are more active themselves are more likely to report having 3 or more friends whom they consider active (SHAPES).

Evidence of Disparities

- Adult screen time values are higher among recent immigrants, families of low socio-economic status and those who are unemployed.180

- Boys are more likely to report receiving peer support for physical activity than girls.181,182 Peer support appears to be particularly critical for physical activity engagement in girls.183-185
Background, Reflections and Rationale for Grade

In 2008, family physical activity included two indicators that received grades. The grade for parental perceptions was a D because there was evidence suggesting that parents did not have a strong sense of the actual physical activity and screen time levels of their children. There was strong evidence that parents were doing a lot to ensure their children were active (e.g. financial support and transportation, as well as volunteering as a manager, referee or coach); therefore, this indicator received a B. In 2009, these two indicators have been consolidated into one and the grade assigned is a C+. Again, this moderate grade reflects the disconnect between how active children are relative to what their parents believe, in combination with evidence showing that many parents are trying hard to facilitate physical activity. A new angle taken this year is to look at parental modelling of not only physical activity, but sedentary pursuits as well.

Family Physical Activity
Grade: C+

Parental Modelling and the Home Environment

Do active parents have active children and youth?

Children of parents who participate in sports are more likely to participate in sports themselves. The sport participation rate in 2005 for Canadian children aged 5 to 14 years was 35% if no parents were involved, compared to 57% if at least one parent was an active participant. When at least one parent was involved as an administrator, the children's participation rate jumped to 80%. In other words, if parents do not want to play sports themselves, they can still have a great influence on their child's participation by simply being involved with the team or organization in some capacity. Data from the PEI Sport Strategy Study found that about half of parents report being involved in their child's sport either by volunteering (38%), coaching (10%) or refereeing (4%).
These findings are encouraging; however, we must remember that a large majority (70%) of the adult Canadian population does not participate in any sport. On a positive note, when Canadian parents were asked about the benefits of sport participation, 43% reported that it is a good way to encourage family physical activity. Whether this translates into action when it comes to being active as a family is unknown.

The *SHAPES* survey (Alberta, British Columbia, Ontario) found that 25% of students surveyed reported that neither of their parents was active. An Ipsos Reid survey found that 60% of parents said they participate in a common family physical activity with their children at least once a week; however, only 27% of children agree with this statement.

### Family structure

Family structure (e.g. number of parents living at home) was associated with playing organized sport at ages 6 to 9 and 14 to 17 years. Nearly three-quarters (74%) of 6- to 9-year-olds who lived with 2 parents played sports, compared with 58% of those living with one parent. These figures were 78% and 69%, respectively, for youth aged 14 to 17 years (*NLSCY 2000-2001*). However, the GSS found very little difference in the participation rate between children aged 5 to 14 years living in one-parent households versus those living in two-parent households (48% versus 51%, respectively). Upon closer examination of the GSS 2005 data, a gender difference was evident, with girls in lone-parent families (39%) less likely to be sports participants than girls from two-parent families (48%).

There is evidence from several Canadian sources that family structure can impact upon physical activity participation in children and youth, and girls may be particularly vulnerable. Given that more and more children and youth are living in one-parent families or blended families, this is an area that may warrant specific messaging and support to help parents prevent this from hindering physical activity participation in their homes. Furthermore, the impact of SES should be considered when exploring this issue.

- Even conscious attempts to be supportive of physical activity and sport participation can make a difference: youth who come from homes they perceive to be more supportive are substantially more active (27.5% active) than those who perceive their home to be less supportive (19.4% active) (*HBSC 2005-2006*).

- Parental modelling of physical activity may alleviate issues associated with family structure: the 2005 GSS found that regardless of family structure, children of parents who participate in sports are more likely to participate in sports themselves.
The home environment: do we live in a ‘TV Culture’?

Not surprisingly, TV viewing in the household has steadily increased over the past 5 decades (Figure 35). The European Youth Heart Study found that a family setting where after-school TV viewing was part of the home culture and children had more autonomy over their own behavior was associated with an increased risk of watching more than 2 hours of TV per day after school and spending more than 1 hour per day playing computer games. A qualitative study with parents in Western Canada found there was resistance to reducing screen time at home because parents thought it was important for the children’s social lives. Similarly, some parents of preschool-aged children surveyed in Ontario reported that they generally “don’t set limits at home” and this translates into their children not cooperating at daycare centres when organized activities were being led. The latter two findings are concerning and suggest that parents may not be setting the required limits and boundaries in the home environment when it comes to acceptable amounts of sedentary behaviours. The work of child psychologist Dr Maggie Mamen highlights the importance of this issue: children need boundaries to feel secure and develop into well-adjusted, happy and healthy adults.

Simple solution for the home environment: fewer TVs, computers and video games, and more basketballs, skipping ropes and hockey sticks!

A longitudinal study of children aged 10 to 12 years found that if there were more pieces of physical activity/sports equipment in the home, then children were more physically active. The same study found that more items in the home conducive to sedentary behaviour (e.g. TVs, computers) were associated with increased body mass index (BMI) among boys.

Parents don’t have time to be active with their kids...or do they?

One of the most commonly reported barriers of physical activity reported by parents is lack of time. Interestingly, recent data from Statistics Canada shows that nearly 3 in 10 Canadian adults are watching more than 15 hours of TV per week, and another 19% are watching more than 21 hours per week (approximately 3 hours/day). Similarly, a 2007 study commissioned by the Canadian Medical Association, the Canadian Paediatric Society and the College of Family Physicians found that 57% of parents reported watching 2 hours or more of TV a night; this number rose to 66% when children were asked about their parents’ viewing habits.

Is it reasonable to accept time as a barrier to facilitating physical activity opportunities for children and youth when the average Canadian seems to be able to find the time to watch 2 hours of TV every day?

Figure 35: The increase in TV viewing time in US households from the 1960s to the 2000s (Adapted from Christakis et al. 2009).
Parental Perceptions Around Physical Activity

Parental perceptions of their children’s physical activity habits

The SHAPES studies asked parents of students in grades 1 to 4 to report, on average, how many hours per day their child was physically active at a moderate to vigorous intensity. The 7-day questionnaires indicated that 88% of the children surveyed are considered “active” by their parents. There is some evidence that parental reports of physical activity are stronger than self-reports of children less than 12 years of age. However, there is reason to question these data given that recent evidence from the United Kingdom found that parental reports showed that 83% of boys and 56% of girls are getting at least 60 minutes of moderate to vigorous physical activity each day; in contrast, direct measurements with accelerometry showed that, in fact, only 3% of boys and 2% of girls met the target. In other words, parents thought their children were getting about 146 minutes of physical activity each day, compared to an average of 24 minutes measured by the accelerometer.

Barriers to physical activity

A sample of 39 parents of preschool-aged children (2-5 years) from Ontario was interviewed about perceived barriers to physical activity. Parents reported intrapersonal factors (e.g. children prefer sedentary activities, children too tired), interpersonal factors (e.g. lack of time, parents too tired) and physical environment factors (e.g. weather, fear of injury, stranger danger, poor proximity to parks, interference with parental work schedules). These answers provide some level of insight into the competing demands and hurried lifestyle Canadian families are currently experiencing. Lack of time was reported along with frustration with scheduling the day to be active with their children. These barriers reported in Ontario are similar to those reported by parents in Australia, where safety concerns and time constraints are also commonly reported factors preventing regular physical activity.
Influence of family on the physical activity and health of children with disabilities

Families with children with disabilities experience a significant amount of stress and challenges that are unique to raising a child with a disability. Most parents recognize that their child with a disability faces greater obstacles and that they need work hard at health promotion. Healthcare providers need to work with parents to provide them with specific information regarding physical activity, recreation and nutrition. They also need to discuss and promote family strategies that balance parental involvement with their child’s need for independence but also their child’s need to live a healthy and active life. One Canadian study found that whether a child with a disability engaged in recreational activities was predicted by parental distress. In other words, the higher the parents’ stress level, the less likely the child was to participate in recreational activities.67

Parental Support to Ensure Kids are Active

Historically, the information reported each year in the Report Card has demonstrated that this is an area where parents have consistently done well, and they continue to do so. Overall, 85% of students surveyed in Alberta, British Columbia and Ontario report that their parents both encourage and support them to be physically active (e.g. drive to games, buy sports equipment, etc.) (SHAPES). It is encouraging to note that no gender difference in parental support (for daughters versus sons) was found in this study. In contrast, fewer older students (grades 9 to 12) reported being encouraged when compared to younger students (79% versus 88%). Students who were classified as active or having low screen time were more likely to experience encouragement from their parents (88% and 87%, respectively) than those who were classified as inactive or having high screen time (73% and 74%, respectively). This discrepancy is expected, given that it is easier to reinforce rather than change behaviour. The key message to provide to parents is that regardless of a child’s current activity level, children should always perceive that their parents are supportive of them being physically active.
Background, Reflections and Rationale for Grade

Peer influence was added as a new indicator this year in response to interest from those working in youth engagement. There is increasing evidence that social support from peers plays an important role in the physical activity behaviour of children and youth. There are several studies that show strong relationships between physical activity levels of peers and social support from peers on physical activity behaviour. The large majority of children and youth (78%) surveyed in several provinces across Canada have three or more friends whom they consider active (SHAPES). However, we do not feel that enough information is available at present and therefore the grade for this indicator is INC for 2009. In the future, we will be seeking more information from school and community programs to see what proportion are responding to the evidence on the importance of peers in physical activity by including this as a key factor in the design of interventions.

![Figure 36: The proportion of students reporting they have 3 or more physically active friends, by level of activity of respondent (Source: SHAPES).](image-url)
Do Canadian Children and Youth Have Active Peers?

Overall, 78% of students surveyed from Ontario, New Brunswick, Alberta and British Columbia say they have 3 or more friends whom they consider active. Generally, a gender difference is not evident. However, this varies between provinces. In Alberta and New Brunswick, boys are more likely to report having 3 friends whom they consider active. By contrast, in Ontario and British Columbia, girls are more likely to report having 3 friends whom they consider active. Not surprisingly, students who themselves are active are more likely to report having three or more active friends (Figure 36).

What evidence exists to tell us that peers matter when it comes to physical activity?

A review of the literature (57 papers) from 1999 to 2005 on children and youth aged 4 to 18 years concluded that a positive association exists between physical activity and friend support in adolescence. In Canada, friends’ participation (e.g. “They all played, so I joined too”) and support (e.g. “Friends taught and encouraged me”) were both identified as frequently occurring social correlates of physical activity participation, and each was reported by 55% of participants. Notably, more participants identified friends’ participation as being associated with unstructured but not structured physical activity. In Ontario, youth in grades 9 to 12 with low social support for physical activity were less likely to be active than their peers with more social support, and the number of friends and family members engaging in physical activity were both associated with physical activity in urban and rural schools in the province. Researchers in Saskatchewan have shown that the influence of friends on physical activity participation is strong in all youth, regardless of SES.

It is important to note that the integral role that friends play in physical activity is consistently linked to the intrapersonal factor of fun. This is consistent with findings from the European Youth Heart Study, which also showed that friends contribute to youth enjoyment of physical activity. Before high school, the main reasons reported by youth for participating in physical activity are to meet new people and make new friends. Importantly, it seems the role of friends shifts in secondary school and is more focused on the actual decision to participate or not.

Data from the United States mirror what we have observed in Canada. Peers, and not parents, were the only source of support associated with improving physical activity in a group of children (average age approximately 12 years) from rural Midwestern U.S. Another study of 10- to 14-year-olds found that the source of support most highly correlated to physical activity was friends. Adolescent girls identified peers, gym teachers and coaches (rather than family) as the most important sources of support for physical activity. Children who reported that their friends watched them engage in physical activity more frequently had higher levels of physical activity overall, and youth engaged in more intense physical activity in the presence of peers than when they were not in the company of peers.
Peer influence is particularly evident in girls

For girls in particular, the influence of peers appears to be quite strong. When physical activity was objectively measured using pedometers in a group of Australian youth, peer support was significantly associated with mean steps per day in girls, but not boys. Younger girls (8 to 10 years) were more likely to agree that “My friend has encouraged me to physically active in the past 2 weeks” compared to older girls (aged 11 to 14 years). Adolescent girls are torn between wanting to look feminine versus engaging in physical activity and potentially looking unfeminine. In essence, there is an indication that adolescent girls are more worried about impressing peers than getting involved in physical activity. This finding is highly relevant to PE teachers trying to engage pre-adolescent and adolescent girls in PE classes. Furthermore, this finding has implications for policy-makers, who may be able to lessen the pressure felt by young women to look a certain way by implementing policies that mandate that the models used in any advertising targeted at adolescent girls are realistic and healthy. Overall, the findings relating to peer support in girls suggest that when interventions are aimed at increasing physical activity among adolescent girls at risk for sedentary lifestyle and obesity, efforts should be made to provide support from significant others.

Peer influence in children with disabilities

Parents report that their children with intellectual disabilities are very socially motivated; if their peers are engaging in an activity, the child with a disability is more motivated to follow suit. Parents of preschoolers in Menear’s study said that “unless the sibling is there to encourage physical activity, if their child [with Down syndrome] has a choice between a sedentary activity and a physical activity, then their child will always choose the sedentary activity” (p.63, brackets added). Therefore, inclusive programs where peers or siblings can participate alongside the child with a disability are recommended.

Sogo Active

Sogo Active is an interactive physical activity program targeted at youth, aged 13-19. Sogo Active was launched at www.sogoactive.com in December 2008, offering youth who register with the program the chance to be selected to carry the torch in the Vancouver 2010 Olympic Torch Relay. Sogo Active is presented by Coca-Cola Canada in collaboration with ParticipACTION, and gives young Canadians the tools to design, change and control their own “get active” plan. Its unique approach to inspiring “for youth, by youth” group activity draws on the power of peers reaching out to less active peers, promotes the development of leadership skills, and facilitates the breakdown of barriers to active living. The program hopes to build ownership and leadership within youth groups and communities so they can carry on under their own power through 2012. Look for evaluations of the first phase of Sogo Active in next year’s Report Card.
Research Gaps

- Conduct further research on the influence of peers and family on the physical activity behaviour of children with different disabilities.

- Examine whether correcting misperceptions of the level of activity/inactivity of peers can serve to have individuals change their perception of their own activity levels, and to make improvements.

- Look deeper into the various components of parental modelling on their children’s physical activity in terms of physical activity levels, participation in organized sport and participation in activities as a family (such as bowling, going to the park to play catch or play on the swings, going skiing as a family or volunteering with child’s sporting activity) to see what types of modelling have the most impact.

- Conduct intervention studies designed to investigate how peer support can encourage physical activity in pre-teens and teens. Examine these influences separately for boys and girls.

- Conduct networking studies in which physical activity levels of members of friendship networks are measured objectively. Those ratings can then be used to determine the “real” influence of peers and the proportion that are indeed active.

Recommendations for Action

- Promote active time as quality family time to help combat the barrier of lack of time.

- Encourage families to support and engage in regular physical activity pursuits of interest to the entire family.

- Encourage families to experiment with different physical activities proposed by children and youth and not be constrained to traditional family physical activities.

- Continue to promote screen-free weeks and, within this promotion, provide suggestions of what families can do together and what children and youth can do with their friends to be active.

- Lobby politicians, daycares, schools, youth groups etc., to gain commitment for making a contribution to ensuring children and youth meet Canadian Physical Activity Guidelines. All caregivers and social support groups have a role to play in encouraging and supporting children and youth to make active choices in all of their daily activities.

- Support parents of children with disabilities to reduce their stress and provide the children themselves with opportunities to be active.

- Design physical activity programs for pre-teens and teens that include social components/include social events at the same time.

- Develop and promote girls-only programs to increase skills and feelings of self-efficacy, and involve social support from peers and other significant others.

- Develop physical activity programs for children with disabilities that involve their siblings.

- Increase youth-led, peer focused physical activity program opportunities.
<table>
<thead>
<tr>
<th>Indicators</th>
<th>Grade</th>
<th>Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proximity and Accessibility</td>
<td>B</td>
<td><strong>92%</strong> of parents surveyed feel there are adequate programs and facilities for their kids to be active locally.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>58%</strong> of Canadian municipalities surveyed offer discounted fee structures for families to help encourage and promote physical activity.</td>
</tr>
<tr>
<td>Usage of Facilities, Programs, Park and Playgrounds</td>
<td>D</td>
<td>Only <strong>15%</strong> of parents report frequent use of programs and facilities, and <strong>34%</strong> report frequent use of parks and spaces.</td>
</tr>
<tr>
<td>Community Programming</td>
<td>B+</td>
<td><strong>84%</strong> of Canadian municipalities report that they offer physical activity programming or scheduling targeted toward families – an increase since 2000.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The majority of Canadian parents also report that the programs and facilities meet the needs of their children well or very well.</td>
</tr>
<tr>
<td>Perceptions of Safety and Maintenance</td>
<td>B</td>
<td>For over a decade, perceptions of neighbourhood safety have remained high in parents of preschool children.</td>
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<tr>
<td></td>
<td></td>
<td><strong>83%</strong> of youth in Canada report that their neighbourhood is safe for younger children to play outside.</td>
</tr>
<tr>
<td>Municipal Policies and Regulations</td>
<td>D</td>
<td>Only one-quarter of municipalities have guidelines specifying bicycle racks at public buildings and only <strong>20-40%</strong> indicate having specific policies requiring safe pedestrian and bicycle routes when retrofitting existing communities or developing new areas.</td>
</tr>
</tbody>
</table>
The community and the built environment (the manufactured physical structures and infrastructure of communities) continue to play an important role in the uptake of child and youth physical activity. Factors related to the design of our communities impact the settings in which children and youth live, and ultimately have the capacity to affect their choice to be active.
Main Findings

- 93% of Canadian municipalities surveyed with populations of 1,000 or more that offer some type of programming or scheduling to specific groups do so for children (A Municipal Perspective on Opportunities for Physical Activity, 2004, CFLRI).

- Just over half of members surveyed reported that their municipalities offer some form of program to help residents afford the costs of physical activity programs and facilities (2009 CPRA survey).

- Physical activity participation is higher when children and youth perceive their neighbourhoods as safe. Fortunately, the majority of Canadian parents and youth feel that their communities are safe. In the HBSC survey, 83% of Canadian youth agreed that their neighbourhood is safe for younger children to play outside (HBSC 2005-2006).

- The majority of members surveyed reported that their municipality has at least some guidelines in place for park and recreation safety specifically related to equipment or supervision and monitoring against strangers (2009 CPRA survey).

- Almost all parental respondents reported that all or most of their municipality’s parks and playgrounds were adequately maintained to ensure the safety of their children (2009 CPRA survey).

The evidence continues to support the impact that the built environment and community infrastructure play on physical activity behaviours. Characteristics such as the presence, accessibility and maintenance of parks and facilities, availability of community programs, safety in communities, and urban design have all been linked to child and youth physical activity levels. Canadian municipalities are making efforts to offer programming and facilities targeted at children and families, and parents and children generally report adequate accessibility to facilities and a sense of safety in the community. However, costs associated with many programs and facilities are creating barriers for families to be physically active, and these should not be ignored.

Access to and maintenance of facilities is reported as high by Canadian parents, youth and municipalities; however, the usage of facilities remains low. New data are needed to understand whether current initiatives targeting children and youth physical activity related to the built environment are having an impact on usage rates of recreation facilities and programs. Municipal policies and regulations have the capacity to act as barriers for children using facilities, yet many Canadian municipalities report the presence of by-laws or regulations that do just that. As municipalities plan for the future, policy-makers should take an interest in the design of their communities and in the extent to which they can maintain and increase accessibility of facilities and programs for physical activity in children, youth and their families.
What are Our Municipalities Doing to Help Children and Youth to be Active? A survey of the Canadian Parks and Recreation Association members

Last year’s Report Card was particularly interested in the barriers children face in being physically active, and reported on a survey of 27 of the largest Canadian municipalities. The municipalities were surveyed to identify the presence of by-laws that discourage physical activity. In preparation for the 2009 Report Card, the Research Work Group identified an interest in the efforts of Canadian municipalities to increase access to facilities and programs and to what extent municipalities were actively involved in the safety and maintenance of those facilities. Therefore, the Canadian Parks and Recreation Association (CPRA) was approached to help distribute a bilingual (English/French) survey to its membership. CPRA members were contacted by email and asked seven simple questions regarding their employment position and their municipality, access to facilities and programs (related specifically to cost subsidies), and the safety and maintenance of their facilities. If they were parents, members were also asked to respond to a further three questions regarding their perceptions of these factors from a parental perspective.

In total, 170 members accessed the survey and responded to at least one of the questions. The majority of members reported being involved in planning and development (31%) or programming (36%) within their municipality. Five percent reported they were from a rural-sized community, 25% were from a small-sized town, 41% were from a mid-sized municipality and 29% were from a large metropolitan city. The majority of respondents were from Ontario (29%), but responses were also received from Quebec (18%), British Columbia (15%), Saskatchewan (13%), Alberta (11%), New Brunswick (8%), Manitoba (3%), Nova Scotia (2%) and Prince Edward Island (1%). Unfortunately, no responses were obtained from members in Newfoundland and Labrador, Nunavut or the Yukon. It should be noted that the sample is a convenience sample only and therefore the findings must be interpreted with caution. The survey responses were used to inform this year’s grade assignments for various indicators and are inserted throughout the Community and Built Environment section.
Background, Reflections and Rationale for Grade

Proximity and access join forces in 2009

Last year’s Report Card reported on access to facilities and programs as a separate indicator from proximity to parks and playgrounds. Increasingly, evidence is showing that not only is the presence of facilities and programs in the community important for child and youth physical activity, but also whether or not these opportunities are easily accessed as a result of other factors such as cost of use and transportation. Therefore, this year the Report Card discusses proximity and accessibility of programs and facilities as a combined indicator. Generally, no data emerged to alter the grading of this indicator; however, this year’s grade fell from a B+ to a B in recognition of disparities that exist with regard to proximity and accessibility for those with disabilities.

Proximity and Accessibility

Grade: B

Figure 37: Absence of physical activity facilities within a 1- to 5-kilometre distance from schools (Source: HBSC 2005-2006).
What does the literature say about proximity and access?

Access and proximity to facilities and programs have begun to emerge from the literature as associated with physical activity levels and preferences. A lack of proximity and resources and inaccessibility and costs of using facilities have been reported by Canadian youth and parents as barriers to physical activity. Canadian children and youth who perceive high availability of recreational facilities and resources are more likely to be physically active than those who report poor availability. Canadian children who live in neighbourhoods where there is a high parental report of good access to parks, playgrounds and recreational facilities are more likely to engage in sports with a coach and less likely to spend time in front of a TV or computer. Findings from the international literature have also identified that the presence (greater number) and proximity of recreational facilities are associated with both self-reported and measured physical activity. Not only is the mere presence and location of recreational facilities important for youth physical activity, but perceived access to recreational facilities, particularly those that are free or that have a low cost, has also been shown to be associated with youth physical activity.

How accessible are Canadian facilities and programs?

Research continues to identify that the majority of parents report that there is an adequate presence of places for their children to be physically active. However, the 2006 HBSC study identifies that within school communities (1- to 5-kilometre radius from schools), principals report a low availability of recreation facilities. Municipalities appear to be doing well with their support for children and families to be physically active. The Municipal Perspective on Opportunities for Physical Activity from CFLRI reports that 58% of Canadian municipalities offer some form of discounted fee structure for families to help encourage and promote physical activity. Of those municipalities with a discounted fee structure, 65% identify that there is a discounted fee structure in place specifically for children. While it is good news that the majority of municipalities are making efforts to support children and family to be physically active, the number of municipalities with these efforts has declined from 2001 (A Municipal Perspective on Opportunities for Physical Activity, 2004, CFLRI).

This year’s CPRA survey identified a wide range in the percentage of recreation spending that is focused on child recreation facilities within municipalities. The respondents were almost equally split between the categories, with almost none reporting a percentage of spending focused on children above 80% (Figure 38). Members were also asked to report on whether their municipality had provisions in place to cover program and facility access and costs to assist residents with financial difficulties. The majority of respondents reported their municipality had a provision in place to help residents access most programs and facilities. Only one of the respondents reported that their municipality had no provisions in place (Figure 39). When asked to report on their views as parents, the findings were surprising as the responses were split, with half of the parent responders reporting their municipal spending on recreation programs and facilities for children was adequate while the other half felt it was not.
How accessible are communities for children and youth with disabilities?

The built environment has the capacity to impede or promote the participation of individuals with disabilities in terms of activity participation. Although the Canadian Charter of Rights and Freedoms guarantees rights and access to people with disabilities, true accessibility for participation in physical activity is not always the reality.

In a study from McMaster University, parents were asked to indicate their perceived barriers to their child’s participation – parents indicated that their children experienced significant barriers to participation in the natural and built environments. The physical and structural barriers reported by parents of children with physical disabilities pertained to the characteristics, design and layout of built and natural environments. Environmental barriers to participation in physical activity for children with disabilities include lack of curb cuts, problems with uneven pavement, problems with snow removal, narrow sidewalks, inadequate or poor lighting, inaccessible access routes, cluttered sidewalks, doorways being too narrow for wheelchair access, lack of elevators and facility front desk being too high. In a survey of 35 health clubs across the United States, six areas of accessibility were assessed – built environment, equipment, swimming pool, information, policies and professional behaviour. The results indicated that all facilities had low to moderate levels of accessibility.

While very little is known about barriers in the built environment for children with intellectual disabilities, Temple recently identified barriers experienced by Canadian adults with intellectual disabilities. The participants answered questions about the barriers, enjoyment and preferences for physical activity (Figure 40). “No sidewalks/bicycle paths” identified as a consistent barrier, as was “difficulty getting there.” It was concluded that for individuals with disabilities, both personal and environmental barriers impact on physical activity participation.

Barriers to physical activity in the built environment for persons with disabilities persist in spite of legislative requirements and existing accommodations.

Kent Patterson, Athletes participating in Special Olympics British Columbia’s Youth Days
Figure 38: Percentage of recreation spending focused on child recreation facilities as reported by members of the Canadian Parks and Recreation Association.

Figure 39: Municipal provisions for access and costs associated with programs and facilities to assist residents with financial difficulties as reported by members of the Canadian Parks and Recreation Association.

Figure 40: Barriers to physical activity, by physical activity level, reported by Canadian adults with intellectual disabilities (Source: Temple, 2007).
Background, Reflections and Rationale for Grade

While the proximity and availability of facilities, programs, parks and playgrounds appears to be meeting most parents’ and children’s expectations, the usage of these environments and services remains low (Figure 41). No new data were available on the use of facilities, programs, parks and playgrounds among Canadian children; as a result, this year’s grade remained a D from the previous year. The 2008 Report Card reported data from the CFLRI which showed that while the availability of programs and facilities (92%) and parks and playgrounds (95%) reported by parents was very high, reports of the actual use were quite low, with only 23% of parents reporting use of programs and facilities often or very often and 34% of parents reporting use of parks and spaces often or very often (Encouraging Children to be Active, CFLRI, 2005).

Usage of Facilities, Programs, Parks and Playgrounds
Grade: D

Figure 41: Parental report of access to and use of facilities, programs, parks and playgrounds (Source: CFLRI 2005 Encouraging Children to be Active).
Background, Reflections and Rationale for Grade

A strong debut for a new indicator

Last year’s Report Card did not discuss community programming as a specific indicator. As more research has emerged on the influences of the community and built environment on child and youth physical activity, the appropriateness and quality of programs and facilities is becoming more apparent as an important indicator. This year’s grade for the new indicator starts out strong at a B+, with data showing the majority of Canadian municipalities offer child- and family-focused programming, and the majority of Canadian parents report that these programs meet the needs of their children. Research has begun to show that children and adolescents report a preference for facilities that have an availability of preferred activities and equipment. As children age and mature, their interests in physical activity differ. Child physical activity has been shown to be positively associated with the activity friendliness of neighbourhoods. Canadian parents perceive that their child’s physical activity preferences could serve as potential barriers to their being physically active. Furthermore, parks and playgrounds designed for younger children may not be appropriate for adolescents as they may not offer the activities that older children enjoy.
This indicator assesses the availability and quality of programming directed at children and families. Most Canadian youth (68%) feel that their neighbourhood has good places to spend their free time and more than half (57%) of those that agree, report being physically active (*HBSC 2005-2006*). The majority of Canadian parents also report that the programs and facilities meet the needs of their children well or very well (Encouraging Children to be Active, CLFRI, 2005). In addition, Canadian data identify that 93% of municipalities with populations of 1,000 or more who offer some form of programming or scheduling to specific groups do so for children (A Municipal Perspective on Opportunities for Physical Activity, 2004, CFLRI). Furthermore, 84% of Canadian municipalities with a population of 1,000 or more report that they offer physical activity programming or scheduling targeted toward families, with increases in this percentage seen since 2000 (A Municipal Perspective on Opportunities for Physical Activity, 2004, CFLRI).

Quality of programming is important as it affects a child’s experience of recreation and sport, and influences whether they enjoy the activities and are likely to want to engage in the activities in the future. In 2001, the Ontario Parks and Recreation Association founded HIGH FIVE® after years of research. This is Canada’s only comprehensive quality standard for children's sport and recreation programs and service delivery. It is currently being used by the following seven provinces: Alberta, British Columbia, New Brunswick, Newfoundland and Labrador, Nova Scotia, Ontario and Saskatchewan. For further information, please visit www.highfive.org/default.aspx.

Is programming equal across Canada?

Geographical differences do exist across Canada, with physical activity programming or scheduling for families being more likely to be offered in municipalities in Western Canada and less likely in Quebec compared to all other Canadian municipalities (*2006 Schools Survey, CFLRI*). While the data identify that there is good quality and availability of facilities and programming for children, youth and families in Canada, there remains a lack of assessment of their quality in the Canadian literature.
The first community design pictured here is an example of a community where residents are wholly dependent on their car because of a lack of street and walking connectivity. The second community design allows easy and direct access to open and visible parks within a maximum 5 minute walk. This community design is more conducive to active transportation.
Background, Reflections and Rationale for Grade

A new indicator for 2009

This year’s issue of the Report Card examines perceptions of safety and maintenance as an indicator of the community and built environment. In general, Canadian parents and children report high perceptions of safety and maintenance in their neighbourhoods and the majority of Canadian municipalities report that maintenance and repair of community recreation facilities is quite good. As a result, this year’s Report Card designates a B for this indicator.

What is the research literature telling us?

The literature identifies that children and parents often report safety issues as barriers to being physically active and are subsequently more likely to be physically active in environments where safety is perceived as high. Studies in the literature have reported on the following components of safety as playing a role in child and youth physical activity: the presence of good lighting (e.g. streetlights, floodlights), the amount of traffic in the neighbourhood, the risk of injury, opportunities for strangers to approach children and access to supervision. Cleanliness, aesthetics and maintenance of facilities and equipment have also been identified as important factors in how likely it is that children will be physically active. In a Canadian study of parents’ preferences for neighbourhood parks, parents reported that one of the main reasons for choosing parks was their cleanliness. Perceived environmental aesthetics or having a nice-looking place to go that is well maintained have been shown to be associated with higher levels of physical activity.
Canadian parents and youth feel safe

Within the Report Card, *perceptions of safety and maintenance* are examined with regard to facility safety and maintenance, risk of injury, and safety from strangers while engaging in physical activity. Parental perception of safety is shown to be more critical for younger children, while youth perception, though very important, is less influenced by parental perceptions and control. In Canada, parents of preschool children report that they perceive that their neighbourhood is very safe, including being safe to walk alone after dark and safe for children to play outside during the day (*NLSCY 1994-2005*). Over time, perceptions of neighbourhood safety have remained high in parents of preschool children; there has been a very slight but steady increase over time, but generally safety has remained stable (*Figure 42*).

The majority of Canadian parents also report that they are not generally concerned about their child’s safety. Just over 1 in 10 parents say that their child does not walk or bicycle in their neighbourhood due to their concern over safety (*Survey of Children’s Opportunities, CFLRI, 2004*). The majority of Canadian youth (83%) also report that their neighbourhood is safe for younger children to play outside. This is important because youth physical activity participation is shown to decrease as neighbourhood perceptions of safety decrease (*HBSC 2005-2006*). Canadian parents also generally perceive that the facilities in their neighbourhood are well maintained. Only one-quarter of parents strongly agree that badly maintained sidewalks and bike lanes in their neighbourhood keep their children from being more active (*Survey of Children’s Opportunities, CFLRI, 2004*).

While not necessarily representative of Canadian parents, the majority of parental responders to the CPRA survey felt that all or most of their municipality’s parks and playgrounds are adequately maintained to ensure the safety of their children (*Figure 43*). The parental respondents also generally agreed with previous surveys and reported that all or most of the time they feel that their children are safe from strangers and crime and can play freely at their local recreation facilities (*Figure 44*).

*Figure 42: Ratings of neighbourhood safety by Canadian parents of children aged 0 to 5 (Source: NLSCY 1994-2005). Note: The scale is from 0 to 10, where 10 is the highest rating for safety perception.*

*Figure 43: Ratings of safety by parents (Scale 0-10)*

*Figure 44: Grades of Canadian parents’ perceptions of safety and maintenance (Grade B)*
How are our municipalities fairing on safety and maintenance?

While only 18% of Canadian municipalities with populations of 1,000 or more strongly agree that their sidewalks and bike lanes are in need of repair, approximately half (45%) of Canadian municipalities strongly agree that their local sport and recreation facilities are in need of repair or maintenance (2004 Municipalities Survey, CFLRI). Regional differences are also apparent in the maintenance levels of municipal facilities. Municipalities in Ontario are slightly more likely to report that their local sport and recreation facilities are in need of repair or maintenance, and Quebec municipalities are slightly less likely to report this compared to Canadian municipalities overall (2004 Municipalities Survey, CFLRI).

Almost all respondents of the CPRA survey reported their municipality had many or some guidelines in place for park and recreation safety specifically related to equipment (e.g. park cleanup, graffiti and trash removal, lighting) (Figure 45). The majority of respondents also reported that their municipalities have at least some guidelines in place for park and recreation safety specifically related to supervision and monitoring against strangers (e.g. lifeguards, bike path patrol, alarm stations, park supervisors) (Figure 46).
Safety is often cited as the reason that parents do not let their children play outside more often. There seems to be a disconnect emerging here, with the CFLRI data showing that the majority of parents are not concerned about their child’s safety when they are playing outside or walking to school. The disconnect is confused by the perception we have from the media that the world is a more dangerous place than it was 20 years ago. Another factor might be that parents are focused on the achievements of their children and thus want to be involved in everything they do (e.g. drive them everywhere and be part of every activity). Collectively, a better understanding of parental decision-making around facilitating outdoor independent play would help advance thinking in this area.

Figure 45: Presence of guidelines for park and recreation safety specifically related to equipment, as reported by members of the Canadian Parks and Recreation Association.

Figure 46: Presence of guidelines for park and recreation safety specifically related to supervision and monitoring against strangers, as reported by members of the Canadian Parks and Recreation Association.
Background, Reflections and Rationale for Grade

Great energy is being spent on initiatives to increase physical activity levels among children and youth, but can we really expect children to be active when they are surrounded by barriers created by the communities in which they live? The grade for 2009 is a D, and remains unchanged from last year as no new data emerged on the role municipalities play in developing policies and regulations targeted at child physical activity. This year, reference is made once again to data from a municipality survey conducted in 2008, in which 27 of the largest municipalities in Canada were identified and contacted by phone and email, and asked 3 simple questions regarding by-laws that hindered physical activity. Twenty-four of these municipalities responded. Sadly, policies and regulations hindering physical activity is an issue in Canadian municipalities where very few report policies designed to promote physical activity and where 96% report that their municipality has at least one by-law that would be considered prohibitory to physical activity in children and youth. Three-quarters of municipalities have by-laws specifically aimed at restricting bicycle and skateboard use in public areas. Road hockey, a popular activity among Canadian youth, is not permitted by law in more than half of our major Canadian municipalities.
While the number of municipal policies and regulations hindering youth physical activity is high, very few Canadian municipalities report policies and regulations that promote physical activity. In 2004, just over one-quarter of municipalities with populations greater than 1,000 said they had guidelines specifying bicycle racks at public buildings (*A Municipal Perspective on Opportunities for Physical Activity, 2004, CFLRI*). Only 20% reported that they had specific policies requiring safe pedestrian and bicycle routes when retrofitting existing communities and 40% reported they had these policies when developing new areas (*A Municipal Perspective on Opportunities for Physical Activity, 2004, CFLRI*). Some geographic differences exist across Canada, with Quebec municipalities being more likely to have guidelines specifying that bicycle racks are available at public buildings; and policies ensuring safe pedestrian and bicycle routes when new land areas are development are more likely reported in municipalities in Western Canada (*A Municipal Perspective on Opportunities for Physical Activity, 2004, CFLRI*).

What Research is Emerging from Canada? – An Update on the HSF Initiatives

The 2008 Report Card reported on the progress of gathering key information on how the community and built environment related to child and youth physical activity in Canada. The strategic initiative in the area of the built environment, obesity and health launched by the Heart and Stroke Foundation of Canada and its partners – the CIHR Institutes of Aging; Circulatory and Respiratory Health; Human Development, Child and Youth Health; Musculoskeletal Health and Arthritis; Nutrition, Metabolism and Diabetes; and Population and Public Health – had recently issued funding to nine successful projects. Of these, four projects had a specific interest in investigating the effects of the built environment on childhood physical activity levels. This year’s Report Card provides more details on these projects.
Built Environment and Active Transport (BEAT):

The objectives of the BEAT project are to: (1) examine how parents and children view the trip to school, specifically, what limits childhood active transport to school; (2) identify how the features of the built environment influence the decision to walk or drive to school; (3) identify whether children who walk or cycle to school are more physically active overall and have healthier examine what can be changed to help parents and children consider more active ways to get to and from school. The BEAT project will provide key evidence in support of the development of better policies and programs designed to positively affect school travel behaviour and the lives of children. For more information, visit www.beat.utoronto.ca.

Features of the built environment in residential neighbourhoods that influence excess weight and weight related behaviours in a cohort of children at risk for obesity (the QUALITY Residential study):

The QUALITY Residential study objectives include: 1) to identify those attributes of the built environment that are most strongly associated with indicators of adiposity, physical fitness and obesity-related behaviours at baseline, and with the changes in these same outcomes between baseline and two-year follow-up; 2) to identify features of the built environment that influence active commuting to school; and 3) to assess agreement between three different sources of describing neighbourhood characteristics: child/parent perceptions, geocoded databases, and in-person neighbourhood audits. For more information, visit www.etudequalitystudy.ca.
Environment, Nutrition, and Activity (ENACT) Project: Optimizing investments in the built environment to reduce youth obesity:

The two principal objectives of the ENACT project are: (1) to understand the role of the built environment and the policies that affect its use, in contributing to youth obesity; and (2) to determine what modifications to policies and practices can help government to optimize investments in the built environment to modify obesity-related risk factors (especially those related to physical activity and nutrition). The program of research is organized in two streams: population health and policy. Using a social ecological framework, the project examines multiple levels of influence on youth behaviour including individual, interpersonal (e.g. family), institutional (e.g. school), and environmental (e.g. availability of recreational facilities). It simultaneously investigates the policy framework that surrounds each of these levels. The researchers involved in this three-year study hope to use the results to advise municipal and provincial decision-makers about how they can invest in infrastructure and policy changes in order to promote physical activity and healthy eating among Nova Scotia’s youth to reduce obesity outcomes. For more information, visit:

www.ahprc.dal.ca/projects/ENACT.htm

A longitudinal study of environmental determinants of overweight among children: The shapes of things to come (SHAPE-Preschool):

The objective of the SHAPE-Preschool project is to determine if aspects of the built environment (e.g. neighbourhood design, access to facilities) are linked to changes in weight or changes in physical activity and/or diet among a large sample of young children in Edmonton. The investigators have previously recruited 2,000 children and their parents who agreed to participate in future research. From these children, measured height and weight were collected and parental reports of child physical activity, dietary intake and habits, and sedentary behaviour were obtained. In the SHAPE-Preschool study, the investigators plan to assess the same criteria in physical fitness and dietary behaviour for both the children and the parents. They will also survey parents on their education, household income and perceptions of the neighbourhood in which they live. The data analysis will be used to determine if the children’s weight is linked to their behaviour (physical activity, dietary intake, sedentary behaviour) or the characteristics of the neighbourhood in which they live. For more information, visit:

www.power.ualberta.ca/SHAPEs.cfm
Building Healthy Communities – Environmental Scan Project: Building Healthy Communities is a 12-month collaborative project with a goal to build awareness of the impacts of the built environment on human health, and to draw together planners, developers, public health staff, environment groups and community associations to develop strategies that will improve the design of their communities from a health perspective. The project is funded by the Public Health Agency of Canada and involves several components, including a literature review, environmental scan, regional forums, community workshops and facilitation services. For more information, visit www.ohcc-ccso.ca/en/building-healthy-communities-project-components.

Active Transportation Bulletins: The CFLRI recently published a series of eight Active Transportation Bulletins for use by public health and active transportation practitioners. These bulletins are intended for those who wish to build the case for active transportation in their community. Topics include Health Benefits, Environmental Benefits, Economic Benefits, Barriers, Built Infrastructure, Safety, Increasing Social Capital and the Role for Municipal Decision Makers. For more information, visit www.cflri.ca.

Research Gaps

- Measure the actual usage of recreational facilities and programs by Canadian children and their families.
- Examine the effects of policies and regulations targeted at the built environment on physical activity of children and youth.
- Explore the environmental barriers to physical activity experienced by children with intellectual disabilities.
- Examine the specific components of the built environment that are measurable and can be used by future municipalities to assess the adequacy of their community design.
Measuring the built environment:
Generally the built environment is measured using three categories of data: (1) self-reported child/adult perceptions; (2) geocoded databases; and (3) in-neighbourhood observational audits. The development and evaluation of these three measures is still in the early stages; recently a review by Brownson and colleagues undertook a comprehensive examination of the literature with respect to such measures.\textsuperscript{239}

Self-reported child/adult perceptions:
These reports are generally obtained by interview or self-administered questionnaires, and obtain information regarding how individuals perceive access and barriers to various elements in the built environment related to recreation and transportation.\textsuperscript{239}

Geocoded databases:
These measures generally involve data that are retrieved from pre-existing data sources and linked to geographical locations using an address or postal code. These measures are often analyzed using geographical information systems (GIS).\textsuperscript{239}

In-neighbourhood observational audits:
This set of measures examines the environment by using systematic observations or audits conducted by trained staff in order to objectively quantify attributes of the built environment.\textsuperscript{239}

Recommendations for Action

- Consider universal design when designing streetscapes, parks and facilities. Designing for vulnerable populations will ensure accessibility for all populations.

- Educate municipal decision makers (urban design/planning, transportation, public health, recreation, etc.) regarding the health and environmental benefits of active transportation and being active outside for leisure, and advocate for improvements in built environment design.

- Provide further funding for research into the assessment of measurable built environment factors in order to establish usable benchmarks for the design of communities.

- Develop education programs on the use of quality assessments in community programming, such as through the HIGH FIVE\textsuperscript{®} program, in order to ensure that programs meet the needs of children and youth.

- Implement evaluation of community physical activity programming to assess quality of program delivery.

- Advocate and work with municipal-level policy-makers and programmers to ensure that when by-laws are developed, consideration is given to how they may affect healthy active living.

- Encourage support for community development programs that allow for supervised but unstructured physical activity and playtime in community parks and facilities to further support community perceptions of safety.
<table>
<thead>
<tr>
<th>Indicators</th>
<th>Grade</th>
<th>Components</th>
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<tr>
<td><strong>Federal Government Strategies and Investments</strong></td>
<td><strong>C</strong></td>
<td>While there were some promising investments in sport and recreation infrastructure in 2008, the actions from the Standing Committee on Health Report from 2007 need greater attention. Federal transfer payments on sport and physical activity have dropped slightly, despite a promise of 1% of federal health funding to be directed at health promotion in 2007.</td>
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<tr>
<td><strong>Provincial and Territorial Government Strategies and Investments</strong></td>
<td><strong>C+</strong></td>
<td>The collective goal declared by Federal-Provincial-Territorial Ministers of Sport, Physical Activity and Recreation to increase physical activity levels by 2015 provides an impetus to reinforce strategies and investments, but there needs to be increased attention given to gathering data and evaluative information on these various strategies.</td>
</tr>
<tr>
<td><strong>Industry, Philanthropic and Research Investments</strong></td>
<td><strong>B-</strong></td>
<td>There has been an increase in support from philanthropic, research and industry funding sources in the area of physical activity – continued engagement and enhanced involvement of these sectors is critical to further facilitating behaviour change.</td>
</tr>
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</table>
Policy

Building healthy public policy puts health on the agenda of policy makers in all sectors and at all levels, directing them to be aware of the health consequences of their decisions and to accept their responsibilities for health.

– Ottawa Charter for Health Promotion

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The latter half of 2008 began an economic downturn experienced like no other in more than 50 years. Few aspects of society were immune to these global changes and all aspects of our lives have faced some degree of uncertainty: governments, philanthropists and industry are intricately tied to these global shifts. Many have re-examined their priorities and seek to provide “stimulus support” to revitalize our economy and build a strong and sustainable society.

Movement in the Right Direction

While the Report Card’s focal indicator assesses physical activity levels among children and youth and remains at an F, it is imperative to note the upward trend in meeting Canada’s recommended physical activity guidelines: 9% in 2006, 10% in 2007 and 13% in 2008 as reported in the CFLRI CANPLY study. This positive direction cannot be underestimated and requires urgent and sustained attention in the current economic climate. As the economy dominates the agendas of policy-makers, media and Canadians, it is important to focus on the small but incremental positive changes in achieving a more physically active child and youth population. To this end, youth physical activity must be considered worthy of a “stimulus package” as well.

As noted throughout the 2009 Report Card, research highlights the positive links between academic achievement and physical activity: such reassurances must be stressed as we move forward in these challenging times. Strong, healthy children and youth have the potential to build a solid foundation upon which a healthy, functioning society is built and sustained. While gains have been made in physical activity levels, we also need to pay particular attention to the disparities evident in the field. For example, in assessing many of the indicators, children with who have disabilities or are from low-SES backgrounds are at a disadvantage. For many of these disadvantaged families, the economic downturn has made it increasingly difficult to access physical activity programs. Now more than ever we need to be strategic in working across levels of society to foster healthy bodies and minds in our nation’s young people. Cross-sectoral partnerships and alliances are crucial in that regard, and it is important to note that while many sectors of our economy are faltering, both education and health have been relatively stable with respect to job losses and funding, thus opening opportunities for physical activity to remain on these agendas and to be pursued more diligently.
Current Initiative Highlights and Considerations

Various elements of the 2009 Report Card have addressed policy concerns with respect to family and peers, school, community and the built environment. This section presents broader policy and strategic initiative developments occurring over the past year, and provides specific examples where action has occurred, and gaps to be addressed.

- Improvements have been made in government- and industry-supported social marketing campaigns.
- Federal Children’s Fitness Tax Credits have been adapted to meet the needs of lower-income families by making the credit fully refundable, and provincial tax credit initiatives continue to benefit more families. However, a thorough evaluation of the uptake and effectiveness of such tax credit initiatives is required.
- The 2009 federal budget identified a new $500 million fund over two years, to renew and build sport and recreation facilities in communities. This was a first step toward addressing the estimated $1.5 billion infrastructure deficit and the projected $18 billion required to meet new demands in growing communities.
- During the 2008 election, there was consensus across all political parties that Canada’s target for annual federal government spending on sport and physical activity programs be equivalent to 1% of health spending (approximately $500 million each year); however, current federal spending for sport and physical activity programs falls well short of this realistic goal and is estimated at $200 million annually.
- There is an increased drive from various physical activity proponents for a national physical activity policy to ensure strong policy leadership in Canada.
- While there is a Minister of State for Sport, calls for a Cabinet Minister appointment and a national centre of physical activity expertise have not been realized.
- At the provincial and territorial level, a number of innovative initiatives are being implemented utilizing multi-setting strategies (i.e. this is where public education and outreach has been managed and where government and non-government partnerships to enhance physical activity play out; however, there is inconsistency in the evaluation of strategies, or the ability to access evaluative information).
- In August 2009, the Ministers Responsible for Sport and Physical Activity will be presented with a plan of action prepared by the Deputy Ministers in each province and territory to meet targets set for increasing the number of children and youth meeting physical activity guidelines.
- Bilateral federal and provincial funding announcements have been made, directed at Aboriginal population initiatives and the facilitation of Sport Canada’s Policy on Sport for Persons with a Disability; however, specific implementation of these initiatives is unclear.
- Funding for research, as well as corporate and philanthropic investments in physical activity initiatives, have increased since the inception of the Report Card.
It has been more than 20 years since the declaration of the Ottawa Charter, yet it continues to be one of the key drivers in physical activity and health promotion. It has played a pivotal role in identifying the importance of advocating for healthy public policy as a fundamental building requirement to ensure healthy individuals, communities and societies. During the past five years since the inception of the Report Card, innovative and progressive physical activity strategies have been proposed but not fully realized. What follows is an overview of key directions to be taken and promising findings to date.

The Coalition for Active Living created a Pan-Canadian Physical Activity Strategy and Business Plan in 2006, which also identified the importance of healthy public policy and the importance of actions that worked across sectors and levels of government: “Governments at all levels must provide leadership and collaborative efforts with the voluntary sector to design and implement effective public policy which removes barriers and encourages daily physical activity.”

The strategy identified the need for a bilateral agreement between the federal and provincial/territorial governments to develop an umbrella brand for the physical activity movement that adds value to national, provincial/territorial and local actions with innovative approaches to communication and media campaigns. In addition, the strategy spoke to the need for coordinated leadership through a national centre of expertise involving cross-sectoral participation to develop policy and program recommendations, and support training and development for practitioners on physical activity interventions.

More specifically, the following public policy actions were identified in the strategy:

1. Establish a national Physical Activity Policy coordinated by the federal government.
2. Enact comprehensive tax policy by all governments that would encourage physical activity.
3. Enact provincial legislation for daily physical education and physical activity programs in schools across Canada.

An international review of national physical activity policy developments echoes the directions identified in these documents, pointing out that better practices involve inter-sectoral approaches, consultation and partnership across governments, and the need for multiple strategies across a variety of settings.
During the 2008 election, the Sport Matters Group (www.sportmatters.ca) created an outline for a Comprehensive Approach to Sport and Physical Activity and provided it to all political parties, recommending the following core strategies:

1. Investment Targets: Increased federal investment in sport and physical activity to a minimum of $500 million per year, so that Canada can meet its target of investing the equivalent of 1% of healthcare spending on sport and physical activity.

2. Infrastructure Funds: Substantial long-term investments to erase the infrastructure deficit (estimated by the Canadian Parks and Recreation Association to be $15 billion) in sport and recreation and address new demands in growing communities (projected at $18 billion by the Federation of Canadian Municipalities), through partnerships with the provinces, territories, municipalities, community organizations and the private sector.

3. Tax Measures: Innovative tax measures to encourage greater participation in sport and new sources of funding from the private sector and the public.

4. Leadership Changes: New federal leadership strategies including a Cabinet Minister responsible for Sport, Physical Activity and Vancouver 2010, and an integrated departmental corporation or separate agency responsible for sport and physical activity policy implementation.
Social Marketing and Physical Activity – Building on Promising Findings

Comprehensive physical activity strategies require strong social marketing elements. The U.S. Centers for Disease Prevention and Control’s successful commercial marketing campaign, VERB, utilized innovative marketing methods to promote physical activity to children. Research findings indicate children who viewed VERB messages reported a more physically active lifestyle and more positive attitudes about the benefits of being physically active. Children aware of VERB reported engaging in significantly more physical activity than children unaware of VERB.

Recent analysis of two Canadian social marketing initiatives also show promising findings for the role of social marketing. ParticipACTION’s 2007-2008 campaign was specifically targeted at parents, with advertisements building a sense of urgency to more fully recognize and address the need to increase their children’s physical activity levels. The campaign evaluation results indicated that more than half of parents who recalled the ads were “called to action” – that is, they reported engaging in some behaviour change in the family to encourage physical activity, such as talking directly with their children, setting stricter rules about sedentary time, participating in more physical activity as a role model or participating in more physical activity as a family.

Current research on the 2007 Long Live Kids social marketing campaign led by Concerned Children’s Advertisers also indicates early positive findings; active children were twice as likely to recall the campaign compared to inactive children. Specifically, children were more active during their free time at follow-up compared to baseline, and increases in recall of the Long Live Kids campaign were related to increases in free-time physical activity participation. It is not possible to conclude that the Long Live Kids campaign caused increases in physical activity research, but the association between recall and increased physical activity suggests the campaign may have had an effect. The researchers do reinforce that this campaign, and social marketing campaigns in general, are most effective when supported with health promotion strategies that build individual skills and foster community engagement.

“So How Are We Doing?”

The Pan-Canadian strategy called for an emphasis on effective social marketing, a physical activity brand and strong messaging. This was also noted in the Standing Committee on Health Report, presented to the House of Commons in March 2007 and identified in the 2007 Report Card.

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“...Current research on the 2007 Long Live Kids social marketing campaign led by Concerned Children’s Advertisers also indicates early positive findings; active children were twice as likely to recall the campaign compared to inactive children. Specifically, children were more active during their free time at follow-up compared to baseline, and increases in recall of the Long Live Kids campaign were related to increases in free-time physical activity participation. It is not possible to conclude that the Long Live Kids campaign caused increases in physical activity research, but the association between recall and increased physical activity suggests the campaign may have had an effect. The researchers do reinforce that this campaign, and social marketing campaigns in general, are most effective when supported with health promotion strategies that build individual skills and foster community engagement.

“So How Are We Doing?”

The Pan-Canadian strategy called for an emphasis on effective social marketing, a physical activity brand and strong messaging. This was also noted in the Standing Committee on Health Report, presented to the House of Commons in March 2007 and identified in the 2007 Report Card.
The need for a national centre of expertise was also identified in the Pan-Canadian Physical Activity Strategy, as was the importance of support for physical activity in the education system. These areas of priority were also reiterated in the Standing Committee on Health Report as well as the Reaching for the Top report developed by the federal government’s appointed advisor on Healthy Children and Youth, which was referenced in the 2008 Report Card policy section. At present, this is an area that has not been fully developed to support public policy in physical activity. The need for strong leadership in the form of a Cabinet Minister is also not in place.

The Pan-Canadian Physical Activity Strategy and the Comprehensive Approach to Sport and Physical Activity documents both highlighted the need for a comprehensive tax policy by all governments to encourage physical activity. The federal government’s Children’s Fitness Tax Credit has since been implemented, with matching tax credits also in place in some provinces. The federal tax credit has been further developed, extending it to lower-income families by making the credit fully refundable. It is critical to evaluate the uptake and effectiveness of both federal and provincial level tax credit initiatives and report cards, and to that end, recent calls for such research have been made and will reported on for the 2010 Report Card.

It is also necessary to further develop tax credit initiatives. For example, Sport Matters has proposed other areas such as the extension of charitable status benefits to all non-profit amateur sport organizations through the amendment of the Income Tax Act, or the introduction of tax credits for coaches and officials to claim the cost of their training, certification and professional development. Thus, there is room for more comprehensive tax policies to build on progress of the Children’s Tax Credit.

The federal budget for 2009 did identify a new $500 million fund, to be expended in the next two years, to renew and build sport and recreation facilities in communities, aimed at reducing the long-standing infrastructure deficit. The program will be a 50/50 matching initiative, delivered through regional development agencies whereby provinces and municipalities, community sport organizations and the private sector may all apply for matching funds. This is a first step toward addressing the estimated $1.5 billion infrastructure deficit in sport and recreation, and the projected $18 billion that will emerge from new demands in growing communities. It is critical that the issue of infrastructure stays on the agenda as this initial support is just the starting point.

During the 2008 election, the Sport Matters Group examined party platforms and confirmed that there was consensus across all parties that Canada’s target for annual federal government spending on sport and physical activity programs be equivalent to 1% of health spending, approximately $500 million each year. It was noted that current federal spending for sport and physical activity programs is estimated at $200 million annually, with a projection to include the foregone revenue to the treasury resulting from the Children’s Fitness Tax Credit, estimated at $135 million annually. Public information records from Canadian Heritage actually indicate a slight drop in projected transfer payments in the past year. As such, we are still below the proposed target.

At the federal level, the grade of C has been assigned. While there has been some good movement in certain areas, it is concerning that the formal responses to the Standing Committee on Health Report and the report from the government-appointed advisor on Healthy Children and Youth have not been tabled in the House of Commons, as this would demonstrate priority for and commitment to the recommendations in these reports regarding active, healthy living. There is a need to ensure that continued priority for and investments in physical activity remain a priority for investment in economically challenging times.
Municipal Strategies and Community Engagement Approaches are Key

It is beyond the scope of the Report Card to provide a full breakdown of strategies and initiatives at the municipal and community level, but there are a number of these happening in cities and towns across Canada, often working in conjunction with provincial and territorial jurisdictions. This is the critical level of implementation. Other levels of government and those in non-government organizations rely on the support of the recreation, public health, social service and education sectors, which is most effectively facilitated when physical activity is identified as a priority and has an overarching strategy supported by mayors, city councils, boards of health and school boards. Some cities, for example the Get Active Toronto initiative, have begun to also use the report card framework to help assess what is happening at the municipal level to inform and drive their strategy.

The greatest challenge at the provincial-territorial level is the inconsistency in the evaluation of strategies, or the ability to access evaluative information. The grade of C+ has been given to recognize the important work being done at this level, but the lack of evaluation prevents the possibility of having a fully accurate assessment of these strategies. Annual cycles of CANPLAY can provide us with some objective measures of physical activity levels in each province and territory in the coming years to provide some insight, and provinces such as Nova Scotia have conducted and shared evaluative data, which was shared in previous Report Cards.

The Physical Activity Monitor (from the Canadian Fitness and Lifestyle Research Institute) can also provide some information, but there is a need to build capacity for evaluation within provinces and territories in order to more fully understand the impact of physical activity strategies being implemented at this level.

The 2007 Report Card also noted that Sport Canada and the Public Health Agency of Canada supported the resurgence of ParticipACTION, which released its first campaign in the fall of 2008 and has further developed its social marketing initiatives. Provincial social marketing initiatives are also occurring. Social marketing campaign140 highlights and research findings are more fully addressed below.

At the provincial and territorial level, a number of province-wide physical activity initiatives are being implemented. Examples include Act Now BC, Active Living Northwest Territories, Saskatchewan in motion, Manitoba in motion, Nova Scotia Active Kids Healthy Kids, Alberta Active Living Strategy and the Kino-Québec Action Plan, to name a few examples. In fact, at this point nearly all provinces and territories are implementing province-wide strategies directed at physical activity. This work has led to some critical steps that have been identified as important. It is at this level where daily physical activity and physical education policies have been established, where multi-setting strategies have been implemented, and where public education and outreach has been managed. It is at the provincial-territorial level where government and non-government partnerships to enhance physical activity play out.
Provincial and Territorial Work: Sharing and learning from one another

Based on feedback received from nationwide consultations, Active Healthy Kids Canada is working with provincial and territorial contacts to develop a knowledge-sharing piece whereby strategies and initiatives will be shared in a supplement to the Report Card in the fall of 2009.

Active Healthy Kids Canada has also been commissioned through non-government networks to develop a pilot Report Card supplement that will examine the assessment of physical activity levels and the indicators that influence those physical activity levels in the province of Saskatchewan. This pilot will provide valuable learning for how similar approaches could be done in other provinces and territories. This supplement will also be released in the fall of 2009.

The 2008 Federal Report on Disabilities indicates that in 2008 an additional $3 million was provided to National Sport Organizations as base funding for the development of sport programs for athletes with a disability – whether or not this money is actually allocated to athletes with a disability is difficult to determine. Additional money was also allocated to the National Sport Organizations for the preparation for the 2008 Summer Paralympic Games in Beijing, China. However, the athletes participating in Beijing were not children. In terms of federal funding, it is not clear how much money is being allocated to the participation of children with disabilities, not just those athletes who are attending the Paralympic Games.

Long-Term Athlete Development Models

Sport Canada has invested time and resources in creating their Long Term Athlete Development Model. We commend Sport Canada for creating a LTAD for Athletes with Disabilities called No Accidental Champions. (For more information, visit www.canadiansportforlife.ca).

Under the leadership of Special Olympics Canada, a Long Term Athlete Development Model has also been developed for athletes with intellectual disabilities. (For more information, visit www.specialolympics.ca).

Both of these documents are steps forward in providing increased opportunities for children with disabilities to participate in organized sport.

Policy for Canadians with Disabilities

Sport Funding

Canadians with disabilities make up approximately 14% of the population, yet the funding to disabled sport organizations only amounts to only 3.8% ($4,245,049) of the annual budget from Sport Canada (www.pch.gc.ca/pgm/sc/cntrbtn/2007-2008/index-eng.cfm, updated 2008-11-19, accessed January 9, 2009).
Chronic Disease Prevention Initiatives and Physical Activity

Various chronic disease prevention strategies have been supported at various levels of government over the years, and all identify physical activity as one of the key areas of consideration for primary prevention. Evolving from the Canadian Heart Health Initiative, which began in 1987 and is a multi-level strategy linking national, provincial and local health departments, The Canadian Heart Health Strategy and Action Plan was released in Ottawa on February 24, 2009. The action plan is not yet fully resourced for implementation, however.

In 1999, the federal government invested for five years in the Canadian Diabetes Strategy with a focus on:

- development of a health promotion-disease prevention strategy for the entire population;
- care and treatment, and diabetes prevention for First Nations people on reserves and in Inuit communities; and
- improvement of national and regional data about diabetes and its complications.

Diabetes strategy support has garnered further investment through some provincial-territorial level investments. The level of investment varies across the country.

The Canadian Partnership Against Cancer is an independent organization currently funded by the federal government to accelerate action on cancer control for all Canadians, stimulating new knowledge and accelerating the implementation of existing knowledge about cancer control for individuals, researchers and policy-makers.

Their work includes helping to build a stronger evidence base to support prevention initiatives as well as enhancing research, surveillance, public awareness and training capacity across the country; as well, developing working relationships and partnerships with other disease groups will maximize the impact on the overall health of Canadians.

A new initiative of the Partnership, the Coalitions Linking Action & Science for Prevention (CLASP) project, is identifying groups of experts and frontline practitioners involved in prevention of cancer and other chronic diseases to support the integration, implementation and evaluation of evidence-based prevention programs. The goals are to accelerate the movement of knowledge into action, and to assist the process of learning from program actions already being carried out by partners to develop a stronger information base that can be shared across the country.
Contributions by Other Sectors

In addition to the work being done by government, those who fund research and physical activity initiatives have had increasing support since the inception of the Report Card, and a grade of B- has been allotted in this regard.

The Heart and Stroke Foundation of Canada, the Canadian Cancer Society, the Canadian Institutes of Health Research, the Social Science and Humanities Research Council and the Canadian Institute for Health Information have all focused efforts to grow research in the area of physical activity.

Numerous corporations have begun to provide initial support to work in the area of physical activity, and relationships to work appropriately and effectively with the corporate sector have only begun to be explored. Philanthropic foundations have worked independently and across funding organizations to develop more focused funding streams directed at physical activity.

These sectors need to continue their engagement and to work in all areas of their business – product development, marketing and advertising, and charitable donations – to play a leadership role in helping to improve physical activity levels among children and youth.
Working Across Levels of Government and Across Sectors

As noted earlier, in August 2008 the Ministers responsible for Sport, Physical Activity and Recreation set targets to increase the percentage of children and youth meeting physical activity guidelines and the average number of steps taken per day. In November, their corresponding Deputy Ministers began a process to develop priorities and areas of focus to be coordinated across governments through the Interprovincial-Territorial Sport and Recreation Council Physical Activity and Recreation Committee, with support from the Public Health Agency of Canada. The 2008 Report Card findings were considered in the process along with input from international research experts. A plan of action will be presented to the Ministers in August 2009 as a result of this work. The Joint Consortium on School Health, referenced in the School section, also provides an important mechanism to facilitate coordination across provincial jurisdictions and is also connected to the work that will be presented to the Ministers.

In 2008 there were a variety of announcements of bilateral (federal-provincial) funding initiatives directed at Aboriginal populations for physical activity and sport, and there was also investment toward bilateral support with respect to Sport Canada’s Policy on Sport for Persons with a Disability, but it is not clear if the Action Plan called for in the policy has been developed.

There is also evidence of initiatives seeking to foster greater connections across governments and non-governmental sectors. One example is the Working Together Initiative, facilitated by the Sport Matters Group and the Public Policy Forum.

This initiative is focused on identifying the contribution of sport and physical activity to multiple policy objectives, and is engaging policymakers in supporting sport and physical activity as a means to “create conditions that will foster achievement of wider policy objectives”, with focus on children and youth, particularly rural Aboriginals, urban Aboriginals and immigrants.248

Recommendations for Action

- Maintain the momentum in policy work that has been directed at physical activity.

- Assert physical activity as a priority again through formal responses to the Standing Committee on Health Report and the report from the Advisor on Healthy Children and Youth, as well as follow through on the commitment to 1% of healthcare spending.

- Continue to grow the priority of physical activity beyond the sport, recreation and health ministries. Increased effectiveness in linking to the ministries of education, environment, municipal services, etc., is critical if they are to more effectively work together regarding aspects of schools, community and the built environment that can both influence physical activity and provide benefits from increased physical activity.

- Effectively evaluate physical activity strategies and initiatives at the federal, provincial-territorial and municipal level to better assess the impact of this work.

- Maintain ongoing outreach to enhance the engagement of the corporate and philanthropic sectors in the issue of physical activity.
The 2009 Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth marks the 5th annual reflection on the many issues impacting upon the physical activity levels of young people in this country. This year, we highlighted the important role physical activity plays in facilitating learning and academic performance.

We started the 2009 Report Card by highlighting academic performance along with several other known outcomes of regular participation in physical activity including the prevention of chronic disease, improved mental health and management of a healthy body weight. It is imperative that individuals working in this field have a strong understanding of these outcomes to help solidify arguments relating to why we need to pay attention to the issue of physical inactivity in this country.

We also consolidated the most current literature examining the relationships between individual characteristics and the many influences connected to physical activity. We assessed indicators within the following sources of influence – school, community and the built environment, family and peers, and policy – regarding their effectiveness in facilitating, promoting and encouraging physical activity.

As always, we have attempted to draw particular attention to the disparities in physical activity. In assessing many of the indicators, we found that children with disabilities and children from low socio-economic status backgrounds are at a disadvantage. The benefits of physical activity are far-reaching and include physical, mental, social, and emotional aspects. Therefore, we need to remember that the disparity groups identified are missing out on many critical outcomes of regular physical activity.

Conclusions
Appendix

Report Card Development Process

The final product

The Report Card is a comprehensive compilation of the best available and most up-to-date information relating to physical activity in children and youth in Canada. The final product comes together as a result of collaboration between dedicated staff at Active Healthy Kids Canada, a Research Work Group and strategic collaborations, as well as key funding agencies. Several information sources are accessed including national data sets from Statistics Canada, peer-reviewed research publications, industry reports and various media sources. Once gathered, the raw report card data is organized into a detailed version (long form) of the Report Card and condensed to produce a summary (short form) Report Card. The summary report card is very concise and is designed to be a compelling communication piece, while the more detailed version provides the evidence base for indicator grades. The promotion and distribution of the Report Card involves a variety of communication methods, ranging from media distribution to direct mail dissemination and via various stakeholder networks. In 2008, the Report Card received significant media exposure with more than 150,000,000 media impressions.

Research Work Group

The development of the content for each annual Report Card is supported by the work of a Research Work Group (RWG). The RWG includes an interdisciplinary selection of experts who are responsible for identifying and ranking Report Card indicators based on available data, research and key issue areas that can be graded nationally. All RWG members are actively working in the area of physical activity in children and youth, and therefore contribute both data and expertise to the Report Card. In addition, additional experts/researchers are accessed to fill issue specific gaps as applicable.

2009 Research Work Group Members

- **Dr. Rachel Colley** – Children’s Hospital of Eastern Ontario Research Institute
- **Sue Cragg** – Canadian Fitness and Lifestyle Research Institute
- **Erin Hobin** – University of Waterloo
- **Dr. Ian Janssen** – Queen’s University
- **Dr. Steve Manske** – University of Waterloo
- **Dr. Louise Mâsse** – University of British Columbia
- **Dr. John Spence** – University of Alberta
- **Dr. Mark Tremblay** – Children’s Hospital of Eastern Ontario Research Institute
- **Dr. Douglas Willms** – University of New Brunswick

Active Healthy Kids Canada Staff

- Michelle Brownrigg, - Chief Executive Officer
- Adrea Fink - Project Coordinator
- Katherine Janson - Manager of Public Relations and Communications
Identification of Research Work Group [RWG] Members: The research team is an interdisciplinary selection of experts, who are responsible for identifying and ranking Report Card Indicators based on available data, research and key issue areas that can be graded nationally.

Report Card Indicator Meeting: The indicator meeting is a face-to-face meeting of the RWG and the Active Healthy Kids Canada staff. The team is asked to identify new data coming available and to highlight emerging trends in the research literature. Indicators are chosen based on these discussions while referring back to the document which established the basis for the first Report Card: Proceeding of the National Physical Activity Symposium which was held on November 30, 2004.

Report Card Content Development: Research team members and other experts are contracted to contribute comprehensive data reports to Active Healthy Kids Canada. Active Healthy Kids Canada completes a review of the current research literature in all indicator areas. Additional information is collected where required and issue experts and partners are engaged where possible to ensure the most up-to-date information is being included in the report card.

Grade Assignment Meeting: Active Healthy Kids Canada summarizes the RWG reports and the current research literature in preparation for the face-to-face Grade Assignment Meeting. This meeting includes all RWG members and the Active Healthy Kids Canada. The relevant information for each indicator is discussed at length with the aim of coming to a group consensus on the appropriate grades to assign. Key Indicator Considerations Include: Prevalence levels, international comparisons, trends over time, disparities (age, sex, geography, ethnicity, SES, etc.), and examination of newly emerging research and initiatives.

Report Card Writing and Release: The final draft is written by Active Healthy Kids Canada and reviewed thoroughly by the research team and key issue area partners.
Funders

It would not be possible to produce the Report Card without the diverse funding sources that are received from various partners. For 2009, these include the Lawson Foundation, the Public Health Agency of Canada, the Heart and Stroke Foundation and Kellogg Canada. The Report Card serves as an example of an initiative that is supported across government, philanthropic, non-government and corporate sectors, and as such serves as a model for how we must work together effectively to increase physical activity levels among children and youth.

Healthy Active Living and Obesity Research Group

In 2008 and 2009, the content development process and the activities of the RWG were managed by the Healthy Active Living and Obesity Research Group (HALO) at the Children’s Hospital of Eastern Ontario (CHEO) Research Institute through a strategic partnership with Active Healthy Kids Canada. Under the guidance of Dr. Mark Tremblay (Director of HALO), Dr. Rachel Colley (Junior Research Scientist with HALO) led the development and writing of the long form Report Card. Content-specific contributors included Dr. Meghann Lloyd (children with disabilities), Stephanie Prince (Community and the Built Environment) and Wai-May Wong (Outcomes of Physical Activity). In addition, the CHEO-HALO team supported a number of knowledge exchange and consultation activities for Active Healthy Kids Canada. In essence, HALO is the ‘knowledge partner’ of AHKC and provides specialized expertise in the area of physical activity for children and youth.

ParticipACTION

In 2008, Active Healthy Kids Canada entered into a strategic communications partnership with ParticipACTION to facilitate planning, coordination and dissemination of the Report Card. In concert with Active Healthy Kids Canada, ParticipACTION manages the marketing, design, public relations and network partner communications related to the development and release of the Report Card. The ParticipACTION staff members who play key roles on the Report Card team are Elio Antunes (COO, VP of Partnerships), Marianne Bernardo (VP of Marketing), Katherine Janson (PR and Communications Manager), Jordanna Porter (Marketing Coordinator), Diana Dampier (Manager of Projects) and Adrea Fink (Project Coordinator). ParticipACTION’s role is to work with Active Healthy Kids Canada to facilitate knowledge exchange and other evidence-informed communication to mobilize action across government, non-governmental organizations, the media and the public.
Description of key data sources

- **Beyond an Apple a Day (BAAD):** The BAAD project explored the policies that guide physical activity and nutrition programming in junior high schools in Alberta. Principals (n = 162), chairpersons of Parent Advisory Committees (n = 113) and District Supervisors (n = 19) were surveyed in the spring of 2003. In a pen-and-paper questionnaire, participants were asked to respond to questions about nutrition and active living policy, facilities, opinions about nutrition and physical activity, and fundraising activities.

- **British Columbia (BC) Principals Survey:** In the spring of 2008, school principals throughout the province of British Columbia were invited to participate in a study that examined opportunities for physical activity and healthy eating at school, and assessed the factors that can influence the implementation of physical activity and healthy nutrition guidelines in the school environment.

- **Canadian Community Health Survey (CCHS), Statistics Canada:** The CCHS is a Statistics Canada survey that seeks to provide regular and timely cross-sectional estimates of health determinants, health status and use of the healthcare system. The 2009 Report Card uses data from the 2004 CCHS to produce overweight and obesity rates for children and youth aged 2 to 17 years. Data are presented by gender, age and province.

- **Canadian Fitness and Lifestyle Research Institute (CFLRI)**
  - **PAM:** The Physical Activity and Sport Monitoring Program of the CFLRI is undertaken in partnership with the Fitness/Active Living Unit of the Public Health Agency of Canada, Sport Canada and the Interprovincial Sport and Recreation Council. PAM is an annual telephone survey that tracks changes in physical activity patterns, factors influencing participation, and life circumstances in Canada (i.e. outcome indicators of the efforts to increase physical activity among Canadians). Each year it focuses on different populations or settings (children and opportunities at schools, workers and opportunities at work, community opportunities, awareness of messaging). Reports consulted in the creation of this year’s report card are:
    - Physical Activity among Canadian Workers, 2006
    - Encouraging Children to be Active, 2005
    - Local Opportunities for Physical Activity and Sport, 2004
    - Communicating the Benefits of Physical Activity for Children: A parent’s perspective 2003
  - **CANPLAY:** Undertaken in partnership with the Public Health Agency of Canada (PHAC) and the Interprovincial Sport and Recreation Council (ISRC), CANPLAY is designed to collect comprehensive and accurate, objective information on the physical activity levels of Canadian children and youth (10,000 recruited annually in approximately 6,000 families). Through the use of pedometers, CANPLAY measures the number of steps taken daily for children and youth aged 5 to 19 years. This year’s Report Card features data from 2005 to 2008.
• **Capacity Study:** This study collects data from settings to examine the extent of systemic opportunities available to Canadians. The themes follow those of the PAM (schools, workplaces, municipalities, communication strategies). In addition to highlighting the extent to which various facilities, programs and opportunities are available in Canadian schools, municipalities and workplaces, the analysis focuses on regional differences, settings and community characteristics within topics. The report provides a synopsis of the current situation in Canada that is relevant to policy and decision-makers in designing initiatives to reduce physical inactivity. Reports consulted in the creation of this year’s report card are:

  - *Working to Become Active: Increasing Physical Activity in the Canadian Workplace, 2008*
  - *Opportunities for Physical Activity in Canadian Schools, 2006*
  - *A Municipal Perspective on Opportunities for Physical Activity, 2004*

• **General Social Survey (GSS), Statistics Canada:** The GSS was initiated by Statistics Canada to fill in gaps in the national statistical information system with respect to data on socio-economic trends. In 1985, Statistics Canada initiated the General Social Survey (GSS), which over five years would cover major topics of importance. The GSS has two principal objectives: (1) to gather data with a degree of regularity on social trends in order to monitor changes in Canadian society over time, and (2) to provide information on specific policy issues of current or emerging interest.

• **Health Behaviour in School Aged Children (HBSC):** The HBSC Survey is an international study of health and its determinants in young people aged 11, 13 and 15 that takes place every four years. The HBSC is sponsored by the European branch of the World Health Organization (WHO) and is carried out by research teams from 41 countries. The Canadian HBSC is funded by the Public Health Agency of Canada (PHAC). The 2009 report card uses data from the 2005-2006 HBSC Survey. Data on physical activity levels are collected using a self-report technique.

• **National Longitudinal Survey for Children and Youth (NLSCY), Statistics Canada:** The NLSCY is a long-term study of Canadian children that follows their development and well-being from birth to early adulthood. The study is designed to collect information about factors influencing a child’s social, emotional and behavioural development and to monitor the impact of these factors on the child’s development over time.

• **Participation and Activity Limitation Survey (PALS), Statistics Canada:** The PALS is a survey conducted on Canadians (adults and children) whose day-to-day activities may be limited because of a condition or health problem. Survey results are meant to identify difficulties and barriers these Canadians may face. PALS is a post-censal survey because it uses the census as a sampling frame to identify its target population. For example, the 2006 Census questionnaire included two general questions on activity limitations. The 2006 PALS respondents were selected through the use of the census information on age, geography and the responses to these two general questions. The data collected by the survey are used to plan services and programs required by persons with disabilities to participate fully in our society. PALS is funded by Human Resources and Social Development Canada (HRSDC).
• **School Health Action, Planning and Evaluation System (SHAPES):** SHAPES is used to create health profiles of students and school environments. It collects data from elementary or high schools on topics such as smoking, eating and physical activity. The survey data are then used to generate profiles to help schools, public health and communities to take action to improve the health of young people. Data can be compiled across regions, provinces or the country to identify trends for policy and planning, and develop strategies for intervention. SHAPES was created by the Canadian Cancer Society’s Centre for Behavioural Research and Program Evaluation, and the Population Health Research Group at the University of Waterloo.

• **SHAPE-Preschool:** The SHAPE-Preschool Study investigates the correlates of overweight among preschool children in the Capital Health Region (including Edmonton), Alberta. The population of interest was children, aged 4-6 years, who attended a health centre for preschool immunization within the region. The 2009 Report Card includes data from 2,114 children, collected between November 2005 and July 2007.

• **SHAPES School Health Environment Survey (SHES):** SHES collected data from a representative sample of more than 500 Ontario elementary and secondary schools. School-specific feedback reports facilitated planning and action on the part of the schools, while aggregated data informed local public health and provincial Ministry of Education and Ministry of Health Promotion priorities. An Advisory Group helped define a set of recommendations resulting from the report.

• **Tell Them From Me (TTFM):** TTFM is an evaluation system for school reform and evidence-based decision-making. A web-based evaluation system, the TTFM allows teachers and students in grades 5 to 12 to given continuous feedback on a concise set of school indicators in three domains: student engagement, student health and wellness, and school/classroom climate, which are all directly linked to school policy and practice. The 2009 Report Card included data from the TTFM cycle from September 2008 to February 2009 \((n = 44,773)\). These data were used to inform the indicators on physical activity, screen time, and organized sport participation.

• **Web-SPAN:** Web-SPAN is a web-based survey of grades 7 to 10 that assesses nutrition, physical activity, smoking and related meal behaviours. All 59 public and separate school boards in the province of Alberta were selected for participation, which included schools in both rural and urban areas, public schools, Catholic schools and private schools. Web-SPAN includes a range of questions about demographics, health behaviours (i.e. diet, physical activity, smoking, screen time), determinants of those behaviours, school environment, and height and weight.
Methodology of the Report Card

The challenge

Since the inception of the Report Card, there has been much discussion and debate around how the indicators should be chosen and how the grades should be assigned. Unlike other report card publications that often rely on a single data source, the Active Healthy Kids Canada Report Card synthesizes data from multiple data sources as well as from the research literature. To further complicate the process, the type and quality of data collected varies widely among the data sources used. For example, some studies may report population surveillance information while others will report results from a smaller study in a defined geographical location or in a specific population. Some of the information used is gleaned from peer-reviewed literature while other information is drawn from industry reports. Finally, consistent information from year to year and across the country is rarely available. This creates another challenge such that we may have to wait several years before updating Report Card readers on a particular issue.

Historical overview of the grade assignment process

The grade assignment process thus far has been completed during a full-day face-to-face meeting with all RWG members and Active Healthy Kids Canada staff. The research data and literature are summarized into tables to facilitate the review of the information. Each indicator was discussed at length and a consensus was reached as to where the grade should fall. The primary driver of the grade was a subjective assessment of whether the current state of an indicator was poor, adequate, good or excellent. Other key considerations included trends over time, international comparisons and the presence of disparities. Given the large variation between each indicator, it is difficult to make the process and discussion consistent or systematic. The challenge of grading exists because we are pulling together such varied and diverse information, something that is also a primary strength of the Report Card.

Making strides to improve the process

Discussion among RWG members in combination with feedback from a provincial/territorial consultation process in 2008 led Active Healthy Kids Canada to conclude that the grade assignment process needed to be more transparent and systematic. Report Card readers were particularly interested in knowing what an “A” grade looked like for each indicator so that they had some context to work within when they were setting goals and monitoring progress. It was felt that the current methodology explanation failed to clearly justify why a grade was given at a certain level.

Improving the process in 2009

The first step in assigning grades is the establishment of a benchmark or the optimal scenario. In other words, what do the data need to look like for an “A” to be assigned to an indicator? For some indicators, this is easier than others. For example, we currently use a recommendation of 16,500 steps per day as the optimal number of steps children and youth should be accumulating.
However, what proportion of children and youth has to be meeting this threshold for us to assign the indicator an “A”? In an ideal world, we would want this value to be 100%, but we have to consider the reality that this is perhaps an unrealistic ideal. Thirteen percent of children and youth are currently meeting the guidelines for step counts per day; at what point will we increase the grade from an “F” to a “D”? Following a standard assessment approach, the following grade breakdown was used for any indicators that assessed the proportion of children and youth receiving, attaining or having access to something.

\[
\begin{align*}
    A &= 80\% + \\
    B &= 60-79\% \\
    C &= 40-59\% \\
    D &= 20-39\% \\
    F &= < 20\%
\end{align*}
\]

In other words, we are essentially saying that:

- **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

**Acknowledging key disparities in the data**

In addition to evaluating the main result for a given indicator, we must consider the presence of disparities and our international standing (if known). Disparities can include disabilities, race/ethnicity, immigration status, geography (provincial/territorial comparisons), socio-economic status, urban/rural, gender and age (e.g. adolescence). The challenge is that some indicators will have disparity information available while others will have information on several of these factors. When evidence of disparities exists, grades are lowered to reflect that we are not reaching the children and youth who may benefit most from physical activity opportunities.

**Monitoring trends over time**

Another area of keen interest has been the monitoring of trends and progress over time. Instead of including the trend in the grading itself, the trend has been kept separate from the letter grade. This is for two reasons: (1) trend information is not available for all indicators, and (2) the separation of the arrow from the letter grade draws attention to an important element of the indicator. The only indicator where the trend arrow is applicable this year is the physical activity indicator. The proportion of children meeting the guideline this year is 13%, which still falls under the “F” grade if we refer to the grade range presented above. However, 13% is a statistically significant increase from the 9% reported in 2007. Based on this, we have good reason to believe that while the situation is still poor, it may be heading in the right direction.
Shifting components of grades from year to year

Some indicators are stand-alone while others are comprised of several “components.” During the grade assignment meeting, each component of an indicator is assessed. There has been an attempt to move toward indicators that are more broad so that they can remain consistent from year to year. The components of each grade may change from year to year; however, the hope is that the indicators will remain more constant. However, how do we come up with a grade for an indicator if its components all have differing grades? Instead of trying to weight different components within an indicator, a simple averaging of the components is done. For example, the indicator “physical education” is made up of “quantity of PE” and “quality of PE.” It is possible that quantity of PE is high and we assign it a B. By contrast, we may grade quality lower (perhaps D) because many schools are not hiring staff trained in PE. Therefore, the grade for ‘physical education’ would become a C.

### 2005 Overall Grade: D

<table>
<thead>
<tr>
<th>Physical Activity / Inactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Physical Activity Levels: D</td>
</tr>
<tr>
<td>- Screen Time: C-</td>
</tr>
<tr>
<td>- Sport Participation: C+</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Family</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Family Physical Activity: D</td>
</tr>
<tr>
<td>- Ensuring That Kids Are Active: C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>School</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Daily Physical Education: F</td>
</tr>
<tr>
<td>- Trained Personnel: D-</td>
</tr>
<tr>
<td>- School-Based Physical Activity Opportunities: INC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Community Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Access and Quality of Programs: C</td>
</tr>
<tr>
<td>- Community Infrastructure: INC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Policy</th>
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</thead>
<tbody>
<tr>
<td>- Federal Strategies and Investments: C-</td>
</tr>
<tr>
<td>- Provincial / Territorial / Municipal Strategies and Investments: INC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Overweight / Obesity: Ft</td>
</tr>
<tr>
<td>- Chronic Disease Risk Factors: INC</td>
</tr>
</tbody>
</table>

### 2006 Overall Grade: D

<table>
<thead>
<tr>
<th>Physical Activity / Inactivity</th>
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</thead>
<tbody>
<tr>
<td>- Physical Activity Levels: D</td>
</tr>
<tr>
<td>- Screen Time: D-</td>
</tr>
<tr>
<td>- Organized Sport Participation: C-</td>
</tr>
<tr>
<td>- Unstructured Sport Participation: C</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Family</th>
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</thead>
<tbody>
<tr>
<td>- Family Physical Activity: D-</td>
</tr>
<tr>
<td>- Ensuring That Kids Are Active: D</td>
</tr>
<tr>
<td>- Parent Perspectives on Activity: D (new)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>School</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Physical Activity at School: INC</td>
</tr>
<tr>
<td>- Access and Quality of Recreation Programs: C</td>
</tr>
<tr>
<td>- Built Environment: INC</td>
</tr>
<tr>
<td>- Neighbourhood Safety and Support: B (new)</td>
</tr>
<tr>
<td>- Proximity to Parks and Playgrounds: B- (new)</td>
</tr>
<tr>
<td>- Active Transportation: D (new)</td>
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<th>Policy</th>
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<tbody>
<tr>
<td>- Overweight / Obesity: F</td>
</tr>
<tr>
<td>- Overall Physical and Psychological Well-Being: C (new)</td>
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<tr>
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<tbody>
<tr>
<td>- Overweight / Obesity: F</td>
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<tr>
<td>- Chronic Disease Risk Factors: INC</td>
</tr>
<tr>
<td>2007 Overall Grade: D</td>
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<tr>
<td><strong>Physical Activity / Inactivity</strong></td>
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<td>• Physical Activity Levels: F</td>
</tr>
<tr>
<td>• Screen Time: D</td>
</tr>
<tr>
<td>• Sport Participation: C</td>
</tr>
<tr>
<td>• Active Play: INC</td>
</tr>
<tr>
<td><strong>Family</strong></td>
</tr>
<tr>
<td>• Family Perceptions and Roles Regarding Physical Activity: D</td>
</tr>
<tr>
<td></td>
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<tr>
<td><strong>School and Community</strong></td>
</tr>
<tr>
<td>• Physical Activity Programming at School: C</td>
</tr>
<tr>
<td>• Social Support for Physical Activity at School: B- (new)</td>
</tr>
<tr>
<td>• Training of School Personnel: C- (new)</td>
</tr>
<tr>
<td>• Community Facilities and Programs: Access and Use: C</td>
</tr>
<tr>
<td>• Community Parks and Outdoor Spaces: Access and Use: C+</td>
</tr>
<tr>
<td><strong>Community and the Built Environment</strong></td>
</tr>
<tr>
<td>• Access to Facilities and Programs: B+</td>
</tr>
<tr>
<td>• Use of Facilities and Programs: D</td>
</tr>
<tr>
<td>• Access to Parks and Playgrounds: B+</td>
</tr>
<tr>
<td>• Use of Parks and Playgrounds: D</td>
</tr>
<tr>
<td>• Municipal Regulations: D</td>
</tr>
<tr>
<td>• Urban Design: INC</td>
</tr>
<tr>
<td><strong>Policy</strong></td>
</tr>
<tr>
<td>• Progress on Government Strategies and Investments: C</td>
</tr>
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<tr>
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References


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Physical activity plays an important role in facilitating learning and academic performance. Research indicates that parents, educators and policy-makers who are concerned that physical activity participation decreases study time, should in fact welcome time devoted to physical education, physical activity or sports. Even when the time is taken away from other subjects, physical education does not negatively affect academic achievement. In fact, increased physical fitness and active living opportunities have positive effects on academic performance. Studies within Canada and from across the globe indicate that physical activity, sport, and comprehensive school health approaches are related to enhanced learning and academic performance through:

- production of substances that protect delicate neurons in the brain
- improvements in memory, concentration, and attention span
- improvements in grades and test scores
- increased self-esteem, and self-image
- reduced misconduct behaviours at school
- increased feelings of school connectedness
- facilitating the inclusion of children with developmental or learning differences

* The views expressed in the Report Card do not necessarily represent the views of the Public Health Agency of Canada.*

For example, a comprehensive Ontario school health initiative including physical activity as a key element indicated a 36% increase in reading and a 24% increase in math scores over a two-year period. A study of over 5,000 students by the U.S. Centers for Disease Control and Prevention indicated that girls with the highest levels of physical education participation had higher math and reading scores. Another US study of over 12,000 students indicated that daily physical activity was associated with higher math and reading achievement, echoed by an Alberta study of 5,000, which showed that active living had positive results on school performance. Healthy bodies and healthy minds are what Canada needs to have a strong, thriving society!

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* CHEO Research Institute
* ParticipACTION

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