IT'S TIME TO UNPLUG OUR KIDS.
Canada's Report Card on Physical Activity for Children & Youth 2008

active healthy kids CANADA
Active Healthy Kids Canada was established as a charitable organization in 1994 to advocate the importance of physical activity for children and youth where they live, learn, and play. As a national leader in this area, Active Healthy Kids Canada provides expertise and direction to decision-makers at all levels, from policy-makers to parents, in order to increase the attention given to, investment in, and effective implementation of physical activity opportunities for all Canadian children and youth.

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

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The views expressed in the Report Card do not necessarily represent the views of the Public Health Agency of Canada.
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<td>ALSPAC</td>
<td>Avon Longitudinal Study of Parents and Children</td>
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<td>BMI</td>
<td>Body Mass Index</td>
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<td>CAAWS</td>
<td>Canadian Association for the Advancement of Women in Sport</td>
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<td>CANPLAY</td>
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<td>CCHS</td>
<td>Canadian Community Health Survey</td>
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<td>CDC</td>
<td>Centre for Disease Control</td>
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<td>CFLRI</td>
<td>Canadian Fitness and Lifestyle Research Institute</td>
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<td>CHEO</td>
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<td>Canadian Parks and Recreation Association</td>
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<td>CPS</td>
<td>Canadian Paediatric Society</td>
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<td>CUHI</td>
<td>Canadian Urban Health Institute</td>
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<td>DPA</td>
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<td>INC</td>
<td>Incomplete</td>
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<td>ISRC</td>
<td>Interprovincial Sport and Recreation Council</td>
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<td>LTAD</td>
<td>Long Term Athlete Development</td>
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<td>Non-Government Organization</td>
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<td>National Health and Nutritional Examination Survey</td>
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<td>OECD</td>
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<td>Quality Daily Physical Education</td>
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<td>Royal Bank of Canada</td>
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<td>SES</td>
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<td>TTFM</td>
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<td>World Health Organization</td>
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<td>YMCA</td>
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Canada’s 2008 Report Card on Physical Activity for Children and Youth, published by Active Healthy Kids Canada, is the fourth annual overview of the physical activity levels of Canada’s young people. Each year, the goal is to further evolve the Report Card in providing an annual, comprehensive assessment of indicators that contribute to the physical activity behaviours of children and youth.

The 2008 Report Card examines indicators that involve objective assessment of physical activity levels, and the health and well-being variables associated with those physical activity levels, among Canadian children and youth. It also looks at the role of societal influences that can facilitate or inhibit physical activity, including family, school, community, and government.

Recognizing that the responsibility to improve the grades of the Report Card indicators cannot be accomplished by one organization, community or individual alone, Active Healthy Kids Canada is committed to working in partnership with all levels of government, non-government organizations, researchers, corporations and foundations in a collaborative effort to keep Canada’s kids active, healthy and happy.

The knowledge and insight gained from each annual Report Card is disseminated nationwide through the media, stakeholder networks and direct mail to practitioners, policy-makers and researchers. Our hope is that the findings in the Report Card will support effective program and message development and enhanced policy creation and implementation, and also identify areas that require further research and monitoring.

**2007 Report Card Recommendations for Action**

Each Report Card outlines key recommendations that, if acted upon and supported by all sectors, can assist in igniting some immediate and sustainable changes to enhancing physical activity opportunities and thereby improving future Report Card grades. Last year’s recommendations, which are addressed through the Report Card this year, included:

**Engage our Youth:** Creating a supportive environment for meaningful youth participation in directing and designing physical activity opportunities, will ensure their own needs are met in a way that is motivating, socially stimulating and enjoyable.

**Transform the After-School Hours from Screen Time to Active Time:** Children and youth commonly spend the hours immediately following the school day accumulating screen time, therefore targeting the after-school hours as a high priority time for physical activity opportunities is critical.

**Better Measurement, Better Progress:** Ensuring accurate and reliable measures of physical activity levels is imperative to further understanding the magnitude of the physical inactivity problem and to assessing what is and what is not working.
So how are we doing one year later?

In the 2007 Report Card, it was noted that reducing screen time needed to be a clear and ever-present message in media campaigns. With every passing year, numerous surveillance papers are published around the world indicating that Canada is not alone in dealing with the issue of physical inactivity. Additionally, with the availability of interactive media tools and mobile communication devices on the rise, it appears as though this trend is going to continue. While we know that excessive screen time is a problem in school-aged children and youth, new data this year indicates that this is a problem in preschool-aged children as well. This finding should be alarming as it shows how early our children are being programmed into a lifestyle of dependence on electronic devices that are often associated with sedentary behaviour.

Physical activity has numerous benefits to overall health and well-being. However, as a society, we have somehow managed to consistently link physical activity with weight loss. Instead of instilling an appreciation for healthy, lifelong physical activity behaviours, it appears as though we may have created a sense of anxiety and pressure to conform to some societal ideal of body weight. We need to pull these constructs apart and allow children to enjoy physical activity, exercise, sport, and free play just because they are intrinsically enjoyable pursuits. The ultimate goal should be to facilitate the development of an intrinsic understanding that being physically active is imperative to a healthy life that is free of chronic illness and disease.

Startling pilot data suggest that we are creating an environment in our communities that is not conducive to physical activity for children and youth. In recent years, there has been a noticeable increase in the number of by-laws restricting active play in public areas. For example, by-laws that restrict road hockey, cycling, and skate-boarding are becoming more common in public areas. In fact, 96% of the major municipalities in Canada have at least one by-law that is restrictive to physical activity for children and youth. It is not unreasonable to presume that children and youth are becoming confused with the increase in messaging around being physically active while simultaneously being restricted to do so in many public areas.

From all fronts there appears to be a gathering of momentum and energy around the issue of physical inactivity. It is almost impossible to watch the news on TV or read a newspaper without seeing an article about emerging research or new statistics on how dire the situation of physical inactivity and childhood obesity is in Canada. Initiatives are emerging among federal, provincial, and municipal governments, however it has been suggested that further national-level leadership on the issue would solidify the efforts and bring much-needed leadership, funding and attention to this area.
The 2008 Report Card is a comprehensive overview of issues and this year we are taking a focused look at screen time in relation to physical activity.

Each year, the Research Work Group considers the conceptual guideline established in the inaugural year of the Report Card to determine a grade assignment:

- **A** Canadian children and youth are active enough and reaching optimal growth and development.
- **B** The majority of Canadian children and youth are active enough and reaching optimal growth and development; however, children who are obese, or physically or mentally challenged may not have appropriate physical activity opportunities.
- **C** Insufficient appropriate physical activity opportunities and programs are available to large segments of Canadian children and youth.
- **D** Insufficient appropriate physical activity opportunities and programs are available to the majority of Canadian children and youth. **We are still here**
- **F** Canadian children and youth have a sedentary lifestyle.

The overall grade of D on the Report Card has been consistent from 2005-2008 because definitive and measurable progress is not yet fully evident, demonstrating the need for sustained and increased efforts. There are also a number of research and surveillance gaps, which need to be addressed to tell us more about the issue.

These challenges are in fact inherent to the value in the Report Card exercise each year. It is absolutely essential that we as a society be able to effectively reflect the progress we are making on the issue of physical activity for children and youth. The Report Card seeks to provide a comprehensive, yet simplified, overview of currently available research and progress in a series of indicators relating to physical activity. If the existing evidence is not yet reflecting changes, the Report Card serves as an annual reminder for all of us to keep up our efforts on the issue.

The Research Work Group for the Report Card includes an interdisciplinary selection of experts who are responsible for identifying and grading Report Card indicators in key issue categories based on current data and research. This group may also recruit additional experts and researchers to assist in gathering the current evidence in relation to the indicators.
Newly available data from the following sources were analyzed by the Research Work Group to inform this year’s grade assignments:

- **Health Behaviour in School-aged Children Survey (HBSC):** Expanded analyses were completed on the 2005/06 survey in an attempt to identify disparities in the data resulting from socio-economic status, urban/rural living, and school climate.

- **Tell Them From Me Survey (TTFM):** Data collected up to February 2008 was incorporated into this year’s Report Card and represents a sample size of 44,773.

- **Canadian Fitness and Lifestyle Research Institute (CFLRI):** Data from the 2005 Physical Activity Monitor (PAM), the 2006 Capacity Study, and the Canadian Physical Activity Levels Among Youth (CAN PLAY) study have been used to gauge levels and determinants of physical activity in children and youth.

- **The New Brunswick Student Wellness Survey (NBSW Survey):** These data were collected during the 2006/2007 school year and were incorporated into this year’s Report Card in collaboration with the Centre for Behavioural Research and Program Evaluation at the University of Waterloo.

- **Web-Survey of Physical Activity and Nutrition (Web-SPAN), Alberta:** This study was incorporated into the 2008 Report Card and provided key information on adolescent perceptions of healthy living.

- **The Prince Edward Island Sport Strategy Survey:** This 2005-2006 survey on sport participation and its determinants was completed by parents and children.

- **The Spatial Health Assessment of Preschooler’s Environments (SHAPE) Study:** An investigation of the correlates of overweight in preschool children in the Capital Health Region of Alberta.

- **Statistics Canada’s Canadian Community Health Survey (CCHS):** Most recent data from this survey was referenced where appropriate.

- **Statistics Canada’s National Longitudinal Survey on Children and Youth (NLSCY):** Most recent data from this survey was also referenced where appropriate.

- Where possible, studies conducted by particular provinces were considered and additional research in relation to the indicators was also referenced in each section.
More detailed information regarding primary data sources, Report Card methodology, an explanation of the grade rankings and an overview of grades from previous Report Cards can be found in the Appendix. A summary of the steps in the Report Card Development process are as follows:

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: Proceedings 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 collated 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 staff. 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.

Although awareness and support has been growing for several years regarding the need to improve physical activity levels among children and youth, the 2008 grade assignments demonstrate a need for continued attention and effort to that end as substantial behaviour change is not increasing relative to awareness levels. Trend analyses over time, along with ongoing refinement and accuracy in data-gathering methods, provide further indication that we need to build on and enhance the good work that is currently underway in order to address the issue of physical inactivity and the related health and development issues emerging among children and youth as a result.

The public policy agenda is ever-changing and with this comes an inability to predict which issues will be of priority for Canadians. However, particularly given rising concerns of increases in chronic diseases and the subsequent demands on our health care system, a proactive and preventative approach to the health and wellness of our children and youth must remain top of mind and on the country’s agenda. Children and youth are important members of our society and deserve no less than our best efforts to ensure they grow into healthy and vibrant individuals.
The objective of the Report Card is to examine the current state of child and youth health in Canada as it relates to physical activity and overweight and obesity. The purpose of the Physical Activity and Inactivity category is to set the stage for the remainder of the Report Card by providing a current snapshot of the overall physical activity patterns of Canadian children and youth. To do this, the issue of physical inactivity will be presented from all angles including actual physical activity levels, as well as the specific behaviours that contribute to overall physical activity such as time spent in front of screens, sport participation trends, and for the first time this year, the construct of active and free play. The importance of physical activity cannot be stressed enough given the simple fact that regular physical activity is associated with improved health outcomes, improved quality of life, and a lowered risk of chronic disease. Yet despite these benefits, many Canadian children and youth are not engaging in regular physical activity.

With an F grade assignment in both the Physical Activity Levels and Screen Time indicators this year, the message is clear: Canadian children and youth are not physically active enough.

Physical Activity (Figure 1): In 2007, the grade for Physical Activity Levels dropped from a D to an F as a result of improved measurement capabilities and the subsequent realization that the problem of physical inactivity was worse than we had originally thought. The same data were revisited this year to assess whether any progress had occurred. These data indicate that we still have work to do given that 90% of Canadian children and youth are still not meeting the guidelines set forth in Canada’s Guide for Physical Activity.1

Inactivity (Figure 2): A range of separate studies from across Canada indicate that levels of screen time continue to remain inappropriately high despite recommendations2-4 that children and youth should spend less than 1-2 hours per day in screen-related pursuits (Figure 2). In addition, Canada’s Guide for Physical Activity recommends that parents reduce screen time by 30 minutes per day and progressively work towards reducing screen time by 90 minutes per day.1

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**Table 1: Physical Activity and Inactivity Indicators**

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Components</th>
<th>Grades</th>
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<tbody>
<tr>
<td>Physical Activity Levels</td>
<td>• Proportion of children and youth meeting Canada’s physical activity guidelines</td>
<td>F</td>
</tr>
<tr>
<td>Screen Time</td>
<td>• Proportion of children and youth meeting Canada’s screen time guidelines</td>
<td>F</td>
</tr>
<tr>
<td>Organized Sport Participation</td>
<td>• Rates of Participation Disparities in participation and access to sport</td>
<td>C</td>
</tr>
<tr>
<td>Active Play</td>
<td>• Adequate opportunities for active play available at home, at school, and in the community</td>
<td>INC</td>
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**Figure 1:** Steps per day taken by children and youth by province. The bar denotes the approximate number of steps to be taken per day if the Canadian physical activity guides were being followed. (CFLRI CANPLAY). CDA = Canadian average

* Significantly different to Canadian average

**Figure 2:** Screen time in hours per day from four different Canadian research studies in relation to recommendations from Canadian and American pediatric associations.2-4
Main Findings

- 90% of Canadian children and youth are not meeting the guidelines set forth by Canada’s Physical Activity Guides for Children and Youth as determined by objective measures (CFLRI).
- Approximately half of the children and youth surveyed in the various studies self-reported that they are physically active, contradicting the first point above (HBSC, NBSW Survey, TTFM Survey).
- Physical activity levels drop off in the teenage years. In the NBSW Survey, more students in Grades 6-8 (58%) reported being active when compared to students in Grades 9-12 (47%).
- Girls are less active than boys. In the TTFM Survey, 50% of boys and only 36% of girls reported meeting a target of 90 minutes of physical activity on most days of the week. Fifty-nine percent of boys and 45% of girls reported that they were active in the NBSW Survey.
- Low socio-economic status (SES) of the family is associated with lower physical activity levels (HBSC Survey).

Background and Reflections

Has anything changed from 2007 to 2008?
It is evident that physical activity levels among Canadian children and youth continue to fall short of an acceptable level for what is required for healthy growth and development. In 2007, the grade dropped due to the inclusion of objectively measured physical activity data on a representative sample of Canadian children and youth. Upon examination of the updated data set from the CAN PLAY study by the Canadian Fitness and Lifestyle Research Institute (CFLRI), there is alarming news to report: **90% of children and youth in this country are not meeting physical activity guidelines when physical activity is measured objectively.**

What are the key messages?
The main findings listed to the left are consistent with what has been reported in the past. There seems to be a disconnect between objectively measured physical activity levels and self-reported physical activity levels. The exact reason for this difference is unknown, however possible explanations are offered later in this section. Physical activity levels vary depending on gender, age, and SES background. These disparities are important to highlight so that programs attempting to tackle the issue of physical inactivity can be shaped accordingly and address the needs of these groups with novel approaches to engaging them in activity.

Is the situation consistent across all of Canada?
For the first time in the history of the Report Card, provincial-level data are being presented with the aim of highlighting the point that, while subtle differences exist between provinces, all provinces need to improve. The most recent data suggest that Newfoundland, New Brunswick, Nova Scotia and Quebec are provinces that are in particular need of change, while British Columbia, Alberta, Yukon and Saskatchewan seem to be making progress (Figure 1). Can successful initiatives in one province be replicated and equally beneficial in other provinces?

How confident are we in the measures of physical activity?
A key recommendation from the 2007 Report Card was to continue striving for accurate and objective measures of physical activity. The transition from using self-reported data to objectively measured data, collected via the use of pedometers, marked a great leap forward in the ability to highlight genuine physical activity levels. However, while these data will continue to provide snapshots of progress from year to year, there are initiatives on the horizon that will further improve our ability to assess the situation in Canada.

New ways of measuring physical activity: accelerometry
Early 2008 saw the publication of the first objectively measured physical activity data on a nationally representative sample of American children: the National Health and Nutritional Examination Survey (NHANES) for 2003-2004. Canada is not far behind with the initiation of data collection in March 2007 for the Canadian Health Measures Survey (CHMS). It is expected that with the release of comparable data on Canadian children by 2010, there will also be a consensus on how to collect, analyze and interpret physical activity data collected by accelerometry.

We need to look at the whole day rather than just bouts of exercise
Using accelerometry data, researchers will be able to report on the proportion of the day that individuals typically spend in each of sedentary, light, moderate and vigorous physical activities. This comprehensive picture of physical activity behaviour is in line with recent reviews that are pushing the health community to start considering the entire 24-hour day instead of individual bouts of volitional exercise and sport.6

The CHMS will provide critical health information on a nationally representative sample of Canadians. While links between physical activity and health have been made previously, the confidence in the physical activity measure has been poor and/or the data has not been Canadian-specific. Stay tuned!
Rigorous and objectively measured physical activity data on a regional sample of children and youth provides invaluable data to a local government to effectively highlight the issue of physical inactivity in their own region. Researchers at Memorial University in Newfoundland are taking strides to collect data on physical activity levels of children and youth in Newfoundland. They are using pedometers to measure steps per day and so far have collected data on 283 boys and 295 girls. Similarly, work is underway in Manitoba to apply rigorous research methods to evaluate the effectiveness of a new physical activity policy put in place in the province in relation to increasing the physical education requirements in secondary schools in the province.

Addressing Research Gaps

The teenage years continue to be a problem

A key finding presented in last year’s Report Card was that as children reach adolescence, their activity levels begin to drop dramatically. As a result, the first recommendation for action in 2007 was to ‘engage our youth’. This suggestion was directed specifically at developing strategies that engage youth in a way that allows them to direct and design activities that they find motivating, socially stimulating and enjoyable.

The trend that physical activity declines in the teenage years is still evident with new data indicating that 58% of Grade 6-8 students from the NBSW Survey report that they are active, in contrast to 47% of Grade 9-12 students. Figure 3 shows a clear decline in the proportion of students meeting the physical activity target of 90 minutes per day as they get older.

What does the research say about age disparities?

This trend is echoed in the research literature, as recent data on a nationally-representative sample of U.S. children and youth demonstrated that those aged 5-15 years engaged in twice as much moderate intensity physical activity than did youth aged 16-19 years. Another study found that eight out of ten adolescents living in the U.S. failed to meet guidelines for two or more of diet, physical activity, and sedentary risk behaviours. A systematic review demonstrated that youth aged 11-16 years of age identified a need for greater choices and more facilities within communities, and that physical activities place an emphasis on socializing. In addition, adolescent females criticized the way physical activity was promoted in schools, indicating that novel school-based programming is needed.
Why don’t the self-reported and objectively-measured data agree?

The data consistently show that self-reported levels of physical activity are markedly higher than levels observed when physical activity is objectively measured. Half of youth aged 10-16 in the HBSC Survey reported that they engaged in 60 minutes or more of physical activity at least 5 days per week. Forty-three percent of children and youth in Grades 6-12 in the TTFM Survey reported that they were meeting the physical activity guideline of 90 minutes per day. Fifty-two percent of youth in the NBSW Survey report themselves to be ‘active’ and approximately half reported that they regularly participate in strength training and flexibility exercises. These findings are in direct contrast to the CANPLAY data from the CFLRI that shows only 10% are meeting the guidelines.

Explaining the discrepancy in these data is difficult and caution must be exerted when drawing conclusions. One possibility is that children and youth over-report their exercise because of an over-arching social desire to appear active. Conversely, the difference may simply arise because children and youth have difficulty remembering and/or describing how active they are. Something else we do not really understand is whether the gap between self-reported and objectively measured data has changed over time. It may be that the gap was there before, however we lacked the tools to measure physical activity objectively. In addition, while pedometers measure the majority of daily activity, they are still incapable of measuring activities such as swimming, cycling, and ice skating. Therefore, given the frequency in which these types of activities are engaged, the argument could also be made that pedometers are not capturing the whole story on physical activity either. There is no easy solution to deal with these limitations in the data reported. The important point to make is that the Report Card strives to use the best available data each year while at the same time acknowledging and clarifying the limitations inherent in these data.

Gender Disparities

The Report Card has previously highlighted that girls are less active than boys. It appears as if there is no change in this trend in 2008, with two Canadian surveys again showing this same distinction (Figure 4). Current research suggests that patterns of physical activity are not only more variable in girls aged 7-11 years, but overall levels of participation are lower and girls spend more time in sedentary pursuits. Recent objectively measured physical activity data on U.S. children found that 48% of boys aged 6-11 years met the physical activity guideline (60 minutes of moderate intensity physical activity per day on most days of the week), whereas only 35% of girls achieved this same target. This gender disparity widens as children enter adolescence. Some research suggests that girls engage in different sedentary pursuits such as reading, compared to boys who tend to prefer video games. This research informs potential strategies for designing intervention and/or messaging targets.

Addressing Research Gaps

How do we engage children and youth who are already suffering with overweight and obesity, without creating anxiety around body image? Research is needed to develop effective clinical programs for complex obesity as well as community-based programs to engage those at risk of experiencing unhealthy weight gain. In addition, education programs relating to tolerance of peers should be offered to children and youth to decrease stigma and teasing related to body weight.
**SES disparities**

Data from the HBSC Survey suggest that once family SES is accounted for, the effects of neighbourhood SES, urban/rural status and school climate had little or no effect on levels of physical activity. This finding suggests that SES plays a role in physical activity, however deciphering whether family or neighbourhood SES is a stronger determinant is difficult to explain given that the two variables inevitably confound each other.

The research literature\(^{13,14}\) has identified the following groups as being at risk for low physical activity levels:

- Children from ethnic minorities (especially girls)
- Pre-adolescents and adolescents
- Children living in poverty
- Children with disabilities
- Children residing in apartments or public housing
- Children living in neighbourhoods where outdoor physical activity is restricted by climate, safety concerns or lack of facilities.

**Is fear of injury a barrier to physical activity?**

The 2001/2002 HBSC study on Canadian youth in grades 6 to 10 found that the safety of environment was a stronger determinant of injury risk in youth when compared to engagement in risk behaviours such as smoking, alcohol, and drug use.\(^{15}\) According to this finding, efforts should be placed on making the environment safe for physical activity. A recent study in Australia in children aged 4-12 suggests that fear of injury should be of modest concern only. It was found that injury rates per hours of exposure to physical activity were low with fewer than 2 injuries requiring medical treatment for every 10,000 hours of activity participation outside of school.\(^{16}\)

**Asthma**

Asthma is considered one of the most common chronic conditions in childhood with data from the NLSCY showing that rates have increased from the early 1990’s to 2000/2001.\(^{17}\) Asthma has been identified as a barrier to physical activity in children and youth. For instance, children aged 7 to 14 years attending hospitals or clinics for asthma or other respiratory ailments were significantly less active than a comparison group with other medical conditions. In addition, these children were also more likely to be obese.\(^{18}\) Educating parents about proper asthma management might ensure that they feel more comfortable letting their children be active.

A positive development in this area is underway with the Canadian Healthy Infant Longitudinal Development (CHILD) study, which proposes to examine whether the indoor and outdoor environments, via interactions with biologic, psychosocial and genetic factors, leads to the development of allergy and asthma in children. The CHILD study will not only provide unique Canadian data essential to determining environmental effects on childhood allergy and asthma, but will also enable examinations of other important health research questions.

**Disabilities**

According to the Participation and Activity Limitation Survey,\(^{19}\) nearly two out of five school-aged children with disabilities could not participate in social or recreational activities in 2001 because of their disability. As the severity of disability increased so did the likelihood of being left out of recreational opportunities. Twenty-one percent of children with a mild disability reported being left out, whereas this proportion increased to 74% in children with very severe disabilities.

**Developmental Disabilities**

Developmental disabilities are inherently more difficult to recognize and diagnose. Therefore children and youth may get lost in the shuffle without the additional support they need. It is important to assist these children early so that they are given the support they need to participate fully in physical activity opportunities.

Children with autism spectrum disorder may be at an elevated risk for physical inactivity due to social and behavioural challenges often associated with the condition, such as missing social cues, avoiding eye contact and not engaging in typical play patterns with other children. It has been found that children with this disorder have lower physical activity levels compared to their peers without disabilities.\(^{20}\) An added advantage of promoting physical activity in this population is that it has been shown to decrease inappropriate behaviours. This outcome combined with increases in physical fitness mean that physical activity has multiple benefits in this population.\(^{21}\)
Main Findings

- Most children and youth are not meeting recommended screen time guidelines calling for a maximum of 2 hours of screen time per day. A range of different studies reported only modest proportions of children and youth meeting the target. Discrepancies exist between the NBSW Survey which found that 44% were meeting this target, the WEB-Span Study which found that 23% were meeting the target, and the HBSC Survey which found that only 11% were meeting the target.

- High screen times are now being observed in preschool-aged children, with one report indicating close to 2 hours per day.

- Total screen time reported in the HBSC Survey is higher on weekends when compared to weekdays (7hr 25 min/day versus 5hr 56 min/day) among Canadian youth in Grades 6 to 10.

Screen Time and Inactivity

A substantial proportion of Canadian youth (50.3% of males and 67.8% of females) are inactive. Regardless of SES characteristics, health status, and body weight status, screen time is associated with inactivity.12

Background and Reflections

Has anything changed from 2007 to 2008?

The 2007 Report Card reported screen time results from the HBSC Survey of 6 hours per day among children aged 10 to 16. This startling finding indicated that screen time was an issue of concern in Canada, however the number of data sets was limited so the grade was set at a D-. The screen time grade dropped to an F this year for two reasons: 1) The evidence base indicating that Canadian children and youth are engaged in too much screen time has increased and 2) New data indicate that even preschool aged children are getting high amounts of screen time. This latter finding in particular is raising the alarm that this issue needs to be addressed.

What are the key messages?

Recommendations from pediatric associations in Canada and the United States indicate guidelines of not more than two hours per day of TV or leisure-related screen time.2-4

The proportion of children and youth meeting guidelines for screen time varies widely between studies, from 10% in the HBSC to 44% in the NBSW Survey. The overall message from the range of studies is that regardless of whether the study is a national sample or a smaller regional sample, many children and youth are not meeting the guidelines (Figure 5).

New data emerged this year in the SHAPE study indicating that preschool aged children are not immune to high levels of screen time. This has been reported in the research literature for a few years now, however robust Canadian data are now emerging to confirm that we need to start taking action at an earlier age. A key recommendation from 2007 was to transform the after-school hours from screen time to active time. New analyses from the TTFM Survey are presented this year to further break down the after-school period. This continues to be a critical time, however further analyses on the HBSC data indicate that weekends are also of notable concern.

Figure 5: The proportion of children and youth meeting CPS screen time guidelines from a range of different research studies.
Startling screen time results in preschool aged children

There has been a recent increase in the volume of research directed towards the early childhood years, as the evidence in support of this time as a critical development period continues to accumulate.

The Alberta-based SHAPE Study reported that preschool-aged children are accumulating, on average almost 2 hours of TV per day. It is important to remember that the recommendation for this age group is NOT 2 hours per day as it is in older children, but actually much less, depending on the source.

Did you know?
The CPS suggests no more than 1 hour of TV per day for preschoolers. Similarly, the American Academy of Pediatrics recommends no TV for children under age two, stating that parents should focus on interacting with their children instead.

Early programming
A telephone survey of 1009 parents in the United States reported that by 3 months of age, about 40% of infants regularly watch TV, DVD’s or videos (approximately 1 hour per day). By 24 months of age, this proportion increases to 90% (approximately 1.5 hours per day). The median age of onset of regular media exposure was 9 months of age and parents report that they watch TV with their children for more than half of that time.
Recent data from the TTFM Survey provide up-to-date information on how youth are spending their time during the after-school period. The information is self-reported on a web-based platform. The main challenge with interpreting this data is that youth sometimes overestimate the time spent on activities, thus resulting in an unrealistic daily total value. To adjust for this, the data were collapsed to a 7-hour window to better indicate a proportional breakdown, collapsed into a viable period of time.

The key findings shown in Figure 7 demonstrate that girls spend more time on homework, reading, part-time work and volunteering than boys. By contrast, boys spend more time engaged in physical activity as well as in screen time. This gender difference is confirmed by CFLRI data as well.24

A key finding evident in Figure 8 confirms previous reports that physical activity decreases among youth as they get older. Interestingly, it appears as though the preference for the type of screen time changes as youth get older, with younger children watching more TV and older youth spending more time on computers and playing video games. Other findings reveal that reading for fun decreases with age, while time spent volunteering and doing homework remains steady through the years.

Addressing Research Gaps

Are parents limiting their own screen time to model healthy behaviour for their children? Research on screen time of parents and children from the same families would provide interesting insight into this question.
Where can we take action?

Remove TVs from the bedroom
A study of children aged 4 to 7 years old (n = 80) found that those who had TVs in their bedrooms watched more TV than those who did not. Similarly, a study of 379 12-year old children found that having a TV in the bedroom was associated with increased viewing time and increased BMI in boys but not girls. Other studies have noted gender differences with indications that girls’ physical activity levels are more associated with reading whereas in boys, computer usage is a stronger correlate. To further complicate this issue, when TVs are located in children’s bedrooms, parents tend to underestimate the time spent watching TV and thus might not intervene when necessary. The family environment cannot be discounted either. An Australian study described how parents act as important mediators of their child’s sedentary behaviour, particularly with regard to rules and restrictions of TV viewing and modelling of screen-based behaviours.

Include messages in school curriculum
A school-based intervention was implemented for 16 weeks for 312 children, with an average age of 10 years, attending disadvantaged schools. The intervention consisted of 10 teacher-led lessons emphasizing self-monitoring, budgeting of time and selective viewing. Upon completion of the study, the intervention group had both higher levels of physical activity and self-efficacy. The authors concluded that the intervention was too short for there to be any significant effects on BMI. While this intervention is novel and shows promise, it has not yet been rigorously evaluated and interventions of this sort may be cost prohibitive for some schools.

What are the implications of spending too much time in front of screens?
Children with high screen time tend to exhibit obesity, low fitness levels, and lower levels of self-efficacy for physical activity. A group of 173 girls were studied through puberty and results showed that inactivity was related to accrual of body fat in adolescence, particularly if the child had at least one obese parent. This finding is not surprising given that the transition from childhood to adolescence has previously been highlighted as a critical point in a child’s development where lifestyle behaviours can change markedly.

Consumer demand for active video games is increasing
The 2007 Holiday Season in Canada brought a frenzy of activity with parents desperate to find and purchase a Nintendo Wii for their families. The interest in these types of games has led people to question their utility in the fight against reducing sedentary time among Canadian children and youth; that is, instead of getting them active, let’s try and make their sedentary pursuits as active as possible. While some research has suggested increased energy expenditure with these games when compared to seated video game playing, experts in the field remain cautious about the role of these devices in the fight to get kids active. Regardless of how active video games become, we must remember that even active video games should not replace physical activity time nor do they offer the same benefits associated with simply playing outdoors.

What about interactive media?
While TV time has received much of the focus, further research is suggesting that interactive media is partly to blame for the tendency towards a sedentary lifestyle. The book “Kids and Media in America” has suggested that interactive media, such as internet surfing and video games, may soon replace TV viewing as the most common sedentary activity. The only reason this has not yet occurred is that interactive media has not “fully penetrated the population” (p.134), whereas TV is accessible to more individuals. Another study found that among female adolescents, the association between obesity and time spent engaging in interactive media was not explained by decreased physical activity. This finding is in contrast to previous work suggesting that screen time was replacing physical activity and is in agreement with other work that observed an overall independence between screen time and physical activity. A potential explanation for this discrepancy is that screen time may be related to obesity more so because it is associated with increased energy intake. This is in line with other research that has found that youth consume a lot of food during screen time, especially high-fat foods and high-sugar drinks. The simple fact that interactive media occupies the user’s hands more than passive TV watching could be a reason why interactive media doesn’t relate as strongly to obesity.

Key Message
Screen time is not always a direct replacement of physical activity. Thus, public health messaging needs to address both increasing physical activity and decreasing sedentary time. The research appears to indicate that changing one does not automatically ‘fix’ the other and that both behaviours need to be targeted.
Main Findings

- Recent data from Statistics Canada indicates that self-reported sport participation rates in Canadian youth aged 15-18 declined from 77% to 59% between 1992 and 2005.38
- Overall, 55% of boys and 44% of girls report participation in sport; however it is worth noting that while participation rates in girls remained stable, rates in boys dropped by 4% between 1992 and 2005 (59% to 55%).38
- Children and youth from lower income households have lower sport participation rates (Figure 9).38
- Soccer has become the sport of choice for Canadian children aged 5 to 14, with a participation rate of 44%. Soccer was followed by ice hockey, swimming and baseball as the most popular sports for children and youth.38
- More than 70% of adolescents surveyed in the WEB-Span Study in Alberta and the PEI Sport Strategy Study self-reported that they participate regularly in sport.
- Data from CFLRI indicate that 72% of Canadian children and youth report participating in sport.

Background and Reflections

Has anything changed from 2007 to 2008?
The 2007 grade for Organized Sport Participation was also a C. At that time, it was evident that while overall participation rates were fair in Canada, disparities still existed in children and youth from disadvantaged populations, such as Aboriginal kids and those from low SES backgrounds. In addition, it was evident that adolescents were participating less frequently in sport. Unstructured sport and play was assessed as part of this indicator in pervious years, however this year it was separated as its own indicator and is described in the following section. The decision to keep the grade at a C is that available evidence still indicates disparities in sport participation and evidence that self-reported participation rates are encouraging in a selection of smaller studies conducted in PEI and Alberta.

What are the key messages?
The findings of a report released by Statistics Canada this year provide further insight into the sport participation trends in Canadian children and youth. These data suggest that participation in sport has dropped since the early 1990’s and that boys have higher rates of participation when compared to girls. SES continues to be a key determinant of sport participation, likely due to the costs associated with registration, uniforms, travel and accommodations. Encouraging data from smaller studies conducted in Alberta and PEI indicate that more than 70% of adolescents reported regular participation in sport. In light of other data indicating a drop in physical activity in adolescence, this information is a positive story. Obtaining similar data from other provinces across Canada would be a good next step to rounding out an understanding of sport participation. Such information would allow more effective provincial comparisons to be made which would then lead to an ability to determine what provincial-level physical activity initiatives are most effective.

Figure 9: Sport participation rates for children aged 5 to 14 by household income, in 1998 and 2005. From Ifedi, Statistics Canada - Health Reports, 2008.38
The gender difference persists

Similar to the physical activity findings, boys report higher overall sport participation than girls (Figure 10). The NBSW Survey also found that boys were more likely to report participation in sport when compared to girls (51 vs. 44% in competitive sports and 45 vs. 40% in non-competitive sports). One exception is that girls in PEI report higher levels of school sport participation. It is important to remember that lower sport participation in girls may simply be indicative of girls’ different interests when it comes to physical activity. As girls enter adolescence, many are looking for alternatives to sport such as yoga, pilates, dance, and circuit training. What this information portrays is that adolescent girls need to be engaged in choosing what activities are available to them to ensure that their needs and interests are being properly addressed.

The trend of declining physical activity with age persists

The NBSW Survey reported that fewer adolescents in Grades 9-12 (46%) participate in sports when compared to their younger peers in Grades 6-8 (69%). These trends are confirmed in reports from CFLRI.24

School sports may be especially important for girls in both urban and rural settings

In contrast to overall sport participation, which is fairly high, school sport participation is low in both PEI and Alberta. The PEI Sport Strategy Study indicates that the higher participation rate of girls in school sport is evident in both urban and rural settings (Figure 11). This finding has important implications for educators and school administrators as it highlights the importance of opportunity for physical activity in a group who are typically more difficult to engage in sport.

Does sport contribute to overall physical activity? Yes

The CANPLAY data from CFLRI reveal that children and youth who participate in sport accumulate between 1500 and 1600 more steps per day than those who do not participate in organized sport activities. Is this a direct effect of the sport participation or are these children and youth simply more energized throughout the day?

Figure 10: Overall and school sport participation in PEI and Alberta (PEI Sport Strategy Study, WEB-Span Study).

Figure 11: Differences in urban and rural sport participation (PEI Sport Strategy Survey).
### What are the factors that promote or hinder sport participation?

When asked the open-ended question about what they thought were the benefits of sport participation, Saskatchewan children most commonly reported socializing (44%), exercise (37%), health and well-being, self-confidence, sportsmanship, having fun, keeping out of trouble, and learning new skills. Alternatively, the three most frequently cited reasons for not participating in sports more often were lack of time (49.9%), financial costs (29.5%) and lack of local programs (17.3%).

### What are the disparities in sport participation?

Statistics Canada reported this year that a higher level of household income increased the likelihood that Canadians were actively participating in sport. In addition, families with minimum household incomes of $80,000 were twice as likely to participate in sports as those with household incomes less than $30,000. Similarly, the NLSCY Survey (from 1994-1999) demonstrated that children among the lowest income quartile were three times more likely to have never participated in organized sports than those in the highest quartile.

This SES disparity is not a new finding and it will be important to ascertain whether the implementation of the recently implemented fitness tax credit will help level the playing field among Canadians from different financial backgrounds. Data relating to the uptake of the fitness tax credit are not yet available.

### Aboriginal children

The 2001 Aboriginal Peoples Survey found that not unlike other Canadian children, approximately 65% of Aboriginal children participate regularly in sport. However, disparities emerged when the data were investigated further, with Aboriginal girls showing markedly lower levels of sport participation. This result indicates that the physical activity behaviours of these children are similar to those from other ethnic backgrounds across Canada. These findings were supported in a separate report out of Saskatchewan that also found non-Aboriginal males have a higher level of sport participation (84.6%) than non-Aboriginal females (64.5%), Aboriginal males (57.8%), and Aboriginal females (44.4%). In addition, Aboriginal children were reported to initiate sport participation at a later age (6.6-7.1 years old) when compared to non-Aboriginal children (5.7-6.0 years old). Aboriginal children have lower participation rates in 4 of the 7 most commonly coached sports: hockey, swimming, baseball, and volleyball. In contrast, Aboriginal males have higher participation rates in informal sports such as soccer, basketball and other undefined activities, a finding which suggests either a disparity in access to coached sports or a preference for informal activities.

### Canadian Sport Policy

Since its adoption in 2002, the Canadian Sport Policy has worked to increase dialogue and cooperation between various levels of government and their respective sport communities to further develop sport throughout Canada. Between 2002 and 2005, governments reported a 34% increase in funding for sport and physical activity. In addition to this achievement, the adoption of the generic Long-Term Athlete Development (LTAD) model, an inclusive model which promotes lifelong sport participation by linking physical education in school with elite sport and community-based programs, was realized.

### Current funding news

Announcement of a new and on-going annual investment of $24M in support of Canadian summer sport athletes, coaches, and programs was made on February 26, 2008 as part of the federal budget; a move which has caused this budget to be cited as one of the most important in Canadian sport history.

### Want to know more?

The Sport Matters Group is a collective of national, provincial and community sport organizations and leaders who care about the future of sport in Canada and who collaborate on various sport policy issues. The Group has actively worked together on the Canadian Sport Policy, the Sport and Physical Activity Act and on increasing the resources available for sport in Canada: [www.sportmatters.ca](http://www.sportmatters.ca).

For more information on sporting opportunities for girls in various cities across Canada check out the “Girls@Play” resources on the Canadian Association for the Advancement of Women and Sport and Physical Activity website: [www.caaws.ca](http://www.caaws.ca).
Background and Reflections

A new indicator for 2008
Active play was identified as an important new indicator for 2008 because of increased observations by concerned citizens that children and youth simply don’t play outside as much as they used to. Active play is critical to the healthy development of our children and youth, but are we making sufficient effort to facilitate this in their lives? Some have started to question whether society has gone too far in regulating the lives of children away from the free play that previous generations enjoyed and arguably, took for granted.

What are the key messages?
It has been suggested that increased time away from home (e.g. school, day care, after-school programs and organized sport), as well as concerns with safety, have taken time away from active play. Examination of time use research from 1981 and 1997 reveals that the largest change in children’s use of time in the past two decades is a decline in discretionary or free time.42

Given that active play is hard to define and even harder to measure, data specifically addressing this issue is scarce. Improved reporting techniques combined with objective physical activity measurement tools which can capture low-level, incidental physical activity, is needed to further clarify how common or uncommon active play is in the lives of Canadian children and youth.

Child’s Play
Silken Laumann highlights the importance of active play in her book “Child’s Play: Rediscovering the Joy of Play In our Communities”.43 She reminds us that we all have, not only a responsibility, but also the power to make change in our communities.

“People say the world has changed: our streets aren’t safe, kids can’t go outside alone and parents don’t have the time to watch their kids play in a neighbourhood park. I try to accept this logic and yet I can’t help but believe that the way we are living today isn’t really working. We are denying children the best and most vital part of childhood: play. Play is the lifeblood of childhood – it brings children joy, it nurtures and excites their creativity, it builds social skills and it strengthens their bodies. Play is the very best part of being a kid. I can’t accept that something so good for their hearts and minds and bodies, something so good for us as parents, has been lost.”

Nature-Deficit Disorder
A common message emerges from the excerpt below which was reprinted from LAST CHILD IN THE WOODS by Richard Louv, courtesy of Algonquin Books.44 He outlines how direct exposure to nature is essential for healthy childhood development and for the physical and emotional health of children and adults.

“One evening when my boys were younger, Matthew, then ten, looked at me from across a restaurant table and said quite seriously, ‘Dad, how come it was more fun when you were a kid?’ I asked what he meant. ‘Well, you’re always talking about your woods and tree houses, and how you used to ride that horse down near the swamp.’ At first, I thought he was irritated with me. I had, in fact, been telling him what it was like to use string and pieces of liver to catch crawdads in a creek, something I’d be hard-pressed to find a child doing these days. Like many parents, I do tend to romanticize my own childhood – and, I fear, too readily discount my children’s experiences of play and adventure. But my son was serious; he felt he had missed out on something important. He was right. Americans around my age, baby boomers or older, enjoyed a kind of free, natural play that seems, in the era of kid pagers, instant messaging, and Nintendo, like a quaint artifact. Within the space of a few decades, the way children understand and experience nature has changed radically. The polarity of the relationship has reversed. Today, kids are aware of the global threats to the environment – but their physical contact, their intimacy with nature, is fading. That’s exactly the opposite of how it was when I was a child.”
Health

A more comprehensive approach to the Health category was taken this year with the addition of indicators beyond body weight status. The inclusion of the new indicators is in response to increased interest and research around the health benefits associated with physical activity.

It is important to remember that all indicators listed at right are assessed and discussed within the context of how they relate to physical activity.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Components</th>
<th>Grades</th>
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<td>Healthy Body Weight</td>
<td>• Proportion of Canadian children and youth who are healthy body weight</td>
<td>F</td>
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<tr>
<td>Physical Health</td>
<td>• Proportion of Canadian children and youth who have a good overall health status</td>
<td>INC</td>
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<tr>
<td>Mental Health</td>
<td>• Proportion of Canadian children and youth who exhibit good psychosocial health</td>
<td>INC</td>
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<tr>
<td>Sleep Health</td>
<td>• Proportion of Canadian children and youth who exhibit healthy sleep patterns</td>
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Are our children getting old too fast? This question was posed in late 2007 by a ParticipACTION campaign to raise awareness of physical inactivity in Canadian children and youth. Type 2 diabetes, sleep apnea, depression and poor quality of life are not health issues children should be combating. While further research is required to clarify the most optimal approaches to promoting behaviour change in children and youth, “…the lifelong benefits of adolescent physical activity on adult health are unequivocal”.

The 2008 Report Card considers various health issues associated with physical activity, including healthy body weights as well as physical, mental and sleep health. Data from the CCHS from 2004 informed the ‘Obesity’ grade in the 2007 Report Card and no new data are available this year. However provincial differences are highlighted this year (Figure 13). The indicator has been changed from obesity to ‘healthy body weights’ to reflect an effort to minimize the stigma associated with the word obesity. While there is ample research confirming that physical activity plays a pivotal role in overall health and chronic disease prevention, very little data is available on a representative sample of Canadian children and youth. For this reason, physical, mental and sleep health all remain ‘incomplete’ this year. However it is important that they be included in this section as it is a method by which to highlight to researchers and funding bodies that there is a shortfall in Canadian data in this area.

Figure 12: Changes in the prevalence of obesity among Canadian children and youth.

Main Findings

- 26% of Canadian children and youth are overweight or obese.\(^{48}\)
- The prevalence of overweight and obesity increases with age. Twenty-one and a half percent of children aged 2-5 years are overweight or obese, while this proportion increases to 25.8% in children aged 6-11 years and 29.2% in youth aged 12-17.\(^{48}\)
- Girls have higher rates of obesity in childhood, while boys have higher rates of obesity in adolescence.\(^{48}\)
- The highest rates of childhood obesity in Canada have been reported in Newfoundland, New Brunswick, Nova Scotia and Manitoba.\(^{46}\)
- The lowest rates of childhood obesity in Canada have been reported in Alberta and Quebec.\(^{46}\)
- 16% of preschool-aged children in Alberta are overweight or obese according to international standards (The SHAPE Study, Alberta)\(^{46}\)
- Obesity rates are slightly higher among youth living in poor neighbourhoods compared to youth living in middle and high income neighbourhoods.\(^{46}\)
- Obesity rates are slightly higher among youth living in rural communities compared to urban communities.\(^{46}\)
- Screen time and sedentary behaviour are more predictive of obesity than more structured, active leisure-time.\(^{48}\)

Background and Reflections

Has anything changed from 2007 to 2008?
The grade did not change from 2007 to 2008 because no new obesity data was available. The most recent data we can report on is the CCHS from Statistics Canada.

What are the key messages?
The overall message is that childhood obesity has risen 3-fold in the last three decades. Canada now has one of the highest rates of obesity in the developed world, with 26% of Canadians aged 2-17 classified as overweight or obese. Children and youth classified as obese has risen from 2 to 10% in boys and 2 to 9% in girls.\(^{18,49}\) Despite progress in the options available for the management of obesity, its prevalence continues to rise. The 2006 Canadian Clinical Practice Guidelines on the Management and Prevention of Obesity in Adults and Children stated that “sweeping prevention and intervention strategies are required to slow, and hopefully reverse, the alarming increase in obesity prevalence in Canada and globally”.\(^{p.1,47}\) The propensity to be overweight or obese appears to be more common in girls, only until adolescence where a shift occurs such that the likelihood of being overweight or obese becomes more common in boys (Figure 14).

Physical activity has a key role to play in obesity reduction. Recent data from Nova Scotia indicate that Grade 3 girls classified as overweight accumulate significantly fewer minutes of hard or very hard physical activity than girls of healthy weight.\(^{50}\)

Is the situation constant across Canada?
The prevalence of overweight and obesity in children aged 2-17 is higher in the Atlantic provinces and Manitoba, whereas the prevalence is lower in Alberta and Quebec.\(^{46}\) The CCHS found that excess weight in children was generally not related to urban-rural residence with the proportion of overweight and obese children remaining similar in census metropolitan areas (CMA) in comparison to non-CMA areas. This is in contrast to the HBSC Survey findings, which suggest that urban/rural differences do exist. Cities that had particularly high rates of obesity compared to the national average of 26% included Gatineau (48%), Kingston (46%) and Winnipeg (32%), while areas that were particularly low relative to the national average included Quebec City (15%), Ottawa (16%) and Calgary (16%).\(^{46}\)

Data Source: 2004 Canadian Community Health Survey: Nutrition
* Significantly different from estimate for Canada (p < 0.05)

Figure 13: The proportion of overweight or obese children and youth by province in Canada. From Shields, Statistics Canada- Health Reports, 2006.\(^{46}\)
Alarming rates of obesity in preschool-aged children

As highlighted in the physical activity discussion, there is “a paucity of information regarding the interrelationship between habitual physical activity, physical fitness and health status in children of preschool age”\textsuperscript{51}. More and more school-aged children in Canada and elsewhere are becoming overweight or obese. What is especially concerning is the emergence of data suggesting that even preschool children as young as 3 years of age are showing signs of excess weight and its complications. Figure 14 demonstrates that young children aged 2 to 5 years have a prevalence of overweight and obesity only slightly less than that of older children and youth. In a sample of 4161 babies born in 1997 in Newfoundland, 25.6\% were overweight or obese by the age of 3-5 years. Only 16.9\% of a similar cohort born in 1984 were overweight or obese at the same age, indicating that obesity has been on the rise even in very young children in Canada.\textsuperscript{52} The limited research in this area was highlighted in a recent paper which aimed to review the current evidence supporting the link between physical activity and biological and psychosocial development during early childhood (age 2-5 years).\textsuperscript{53}

Addressing Research Gaps:

- The optimal amount of physical activity required to maintain a healthy body mass, motor skill acquisition, aerobic fitness and self-esteem
- Objective measurement of physical activity
- Physical and psychosocial health indicators
- Family context and physical activity
- Development of specific guidelines
- Analysis of the relationships between perceptions of body weight, self-esteem and body image in relation to physical activity.

“Canada is facing an inactivity and obesity crisis whose impact on the cost of future chronic disease management is almost unimaginable.”

– ParticipACTION.com

Did you know?

The UNICEF Innocenti Research Centre reported that Canada ranks 27\textsuperscript{th} out of 29 OECD (Organisation for Economic Co-operation and Development countries in rates of childhood obesity. Compared to other developed countries, we have failed to provide environments conducive to healthy weights.\textsuperscript{54}
Are there disparities in healthy body weights in Canada?

Socio-economic status and urban vs. rural differences
The 2005-2006 HBSC Survey found that rates of overweight and obesity were slightly higher in youth living in low SES neighbourhoods compared to youth living in moderate and high SES neighbourhoods.

The HBSC Survey also found that obesity rates were slightly higher in youth living in rural communities compared to youth living in urban settings.

What does the research literature say?
Five cycles of the Canadian NLSCY were analyzed for factors relating to childhood obesity. The 1996 Census was used to categorize neighbourhoods from ‘most poor’ to ‘least poor’. After controlling for individual and family factors (age, sex, income, education, family structure), living in the ‘most poor’ neighbourhood was associated with an increased Body Mass Index (BMI) compared to a ‘middle’ income neighbourhood. Additionally, living in an urban (vs. rural) neighbourhood was associated with a decreased BMI percentage.

A comparison between Canada, U.S. and Norway found that child poverty was greatest in the U.S., followed by Canada, and then Norway. In addition, the extent of obesity was found to be greater for poor children than for non-poor children in both Canada and the U.S. In Canada, obesity prevalence for poor children is 27.6% higher than for non-poor children (19.4% compared with 15.2%).

Similarly, trends of increased overweight were greater in families living below the poverty line. This is more consistent among older adolescents than it is among younger adolescents.

New immigrants may be at increased risk
In 1996 and 2005, Statistics Canada reported that immigrants to Canada are less likely to be overweight than the average Canadian-born individual. However this difference diminishes the longer the child has lived in Canada. Similarly, chronic conditions are less common among immigrants when compared to the Canadian-born population (50% vs. 57%). General access to quality health care, especially in new immigrants, is low and the greatest impact may be on children. Two studies have shown that immigrants are less likely to be physically active when compared to non-immigrants. While leisure-time physical activity might increase after being in Canada for an extended period of time, it appears as though other changes, like decreased incidental physical activity and increased food intake, do occur and thus explain why a tendency towards weight gain occurs the longer immigrants are in Canada. The ‘healthy immigrant’ effect is well established among adults immigrating to Canada, however little information exists on how the transition affects the health and well-being of children and youth immigrating to Canada.

How do we help the already obese child or youth?
Overweight and obese children have been reported to be less likely to participate in all forms of physical activity, from daily lifestyle activity to overall total activity and vigorous physical activity.

This raises a ‘chicken or egg’ debate; Which came first: low physical activity leading to obesity, or obesity leading to discomfort and lack of interest in physical activity?

The current population of Canadian children and youth is such that much thought needs to be given to innovative ways of engaging this subset of our younger population who will undoubtedly have unique needs and challenges. We need to balance this with the creation of environments that are conducive to healthy physical activity behaviours.

Aboriginal children and youth appear to be at risk
Cree children from northern Quebec have higher rates of obesity than the average Canadian child. In a group of 82 Cree children aged 9-12 years, 33% were overweight and 38% were obese, according to international standards. In addition, the mean sum of five skinfolds exceeded the 95th percentile for Canadian children. These data are supported by low fitness scores (90% scored below the 20th percentile in a shuttle run test) and only 49% were sufficiently active according to pedometry. The community of Kahnawake, southwest of Montreal, has had a long-standing problem with obesity and type 2 diabetes, which led to the implementation of a diabetes prevention program and evaluation over an 8-year period. Despite efforts to ensure local community control and culturally appropriate programming, the goal of reducing the prevalence of obesity was not achieved. Longer term interventions have been proposed for the future, but it is clear that, at present, many challenges remain in managing this marked disparity in Canada.

Addressing Research Gaps
No data is currently available on the relationship between physical activity and health for children of families who have immigrated to Canada. Other research suggests this may be a sub-group of our population that needs special attention.
Canadian Clinical Practice Guidelines

The publication of Canadian-specific clinical practice guidelines marks a significant step forward – a move that will undoubtedly improve clinical practice in Canada and abroad. Chapters that are particularly relevant to child and youth health in Canada include:

- Classification of overweight and obesity in children and adolescents
- Clinical evaluation of obese children and adolescents
- Dietary intervention for the treatment of pediatric obesity
- Physical activity and exercise therapy in children and adolescents
- Combined diet and exercise in the treatment of pediatric overweight and obesity
- Pharmacotherapy and bariatric surgery for the treatment of obesity in children and adolescents
- Individual approaches to the prevention of pediatric obesity using physical activity

Some of the gaps highlighted in these chapters where work is ongoing include:

- Pediatric definition of metabolic syndrome: A clustering of cardiovascular disease risk factors
- Development and increased evidence-base for effective treatment options: dietary, exercise, pharmacotherapy, surgical
- Further characterization of obesity-related comorbidities: cardiovascular health, metabolic health, psychosocial (i.e. self-esteem, depression), orthopaedic (i.e. changes in bone development, increased injury risk), respiratory (i.e. obstructive sleep apnea), gastrointestinal health, reproductive health, renal health

Promoting healthy body weights requires novel thinking

“Healthy Buddies” is a novel, peer-led health promotion program designed to prevent obesity and eating disorders in elementary school children. Following training, older students (in Grades 4 through 7) are paired with younger students (kindergarten to Grade 3) to be positive buddies and convey key messages about healthy living from nutrition to physical activity to a healthy body image. Results from a pilot study in two Canadian elementary schools found that healthy living knowledge increased in both older and younger students. In addition, weight increase velocity in the older students appeared to be slowed. Student-led teaching may be an efficient, easy-to-implement way of promoting healthy messages (www.healthybuddies.ca).

The medical field is engaged in the issue of childhood obesity

The Provincial Council for Children’s Health (PCCH) in Ontario published an expert panel report in December 2007 outlining a proposed service delivery framework for healthy weights for children and youth. Despite the best efforts of obesity prevention strategies, Canada is now faced with a reality that interventions are needed for children and youth who are already overweight or obese. A main priority identified was the establishment of tertiary and quaternary programs for obese children and youth with significant co-morbidities. These children and youth have complex needs and comprehensive services are presently unavailable to them.
Background and Reflections

Why are children and youth now experiencing chronic diseases that we should only be accustomed to dealing with in older adulthood?

What are the key messages?

Some of the early consequences of child and youth obesity may include diabetes, high cholesterol, high blood pressure, early development of plaques in the coronary arteries, orthopedic abnormalities, neurological and gastroenterological problems, asthma and sleep apnea. Robust longitudinal research conducted on Canadian youth found that blood pressure increased to unhealthy levels when weight gain over a two-year period was beyond the weight gain that is expected with normal growth.68

The term ‘metabolic syndrome’ is used in adults to define a clustering of cardio-metabolic disease risk factors including obesity, lipid abnormalities, high blood pressure and impaired glucose control.69 Sadly, these conditions that used to only affect adults are now encroaching on the lives of Canadian children and youth, which has led to a desire to create pediatric-specific cut-points for this clustering of risk factors in children. While debate continues over how to define the metabolic syndrome in children,47 the health risk associated with each individual component is real and warrants significant attention.69

In recognition of a lack of consistency in defining the metabolic syndrome, Canadian researchers published new criteria for diagnosing the metabolic syndrome in adolescents. Age specific cut-points for each metabolic syndrome component (waist circumference, blood pressure, blood lipids and glucose) were developed to define high-risk values in 12- to 19-year-olds.70

Prevention is crucial

Regardless of age, there is conclusive evidence that physical activity contributes to a healthy lifestyle and prevention of chronic disease. In fact, regular participation in physical activity during the early years has been cited as the factor that will have the greatest impact on an individual’s lifespan and quality of life.51 Prevention of obesity during childhood through learned healthy lifestyle behaviours is the key to having “the largest possible impact on adult health at the population level.”69

The role of fitness in health

Children and adolescents with low levels of vigorous physical activity are more likely to be overweight and to have excess abdominal fat.72,73 Vigorous physical activity contributes to increased cardiovascular fitness, which, like overall daily physical activity, is associated with decreased risk of metabolic disease.74,75 The current evidence suggests that the deleterious effects of being overweight or obese can in part be attenuated by high levels of cardiorespiratory and muscular fitness.72 Therefore, the promotion of daily physical activity should coincide with encouragement to engage in some vigorous physical activity as well to further improve cardiovascular disease risk profiles. Other recent studies76-78 also showed a strong association between cardiorespiratory fitness and clustering of cardiovascular risk factors in children and youth.
Physical activity plays a pivotal role in the prevention of chronic disease: Robust evidence exists

The European Youth Heart Study (EYHS) is a multicenter, international investigation of the prevalence of and relationship between cardiovascular disease risk factors in children aged either 9 or 15 years. It is the first to investigate the association between different measures of accelerometry-assessed physical activity levels and clustering of cardiovascular disease risk factors.

Key findings from this and other important research projects are summarized below:

- Low levels of physical activity are associated with cardiovascular disease risk factors (Figure 15).79
- The current international guideline of 60 minutes per day of moderate physical activity underestimates the required activity necessary to prevent the clustering of risk factors in young children.79
- Ninety minutes of daily activity might be necessary to prevent insulin resistance, a pre-diabetes condition that seems to be the driving force of adverse cardiovascular risk factors. It is worth noting that this recommendation is in line with the current Canadian physical activity guidelines for children and youth.1
- The presence of features of metabolic syndrome (high insulin, low glucose tolerance, high blood lipids, high blood pressure, obesity) and insulin resistance are associated with low levels of physical activity.80
- Insulin resistance has been shown to be associated with higher body fat and waist circumference.81
- Children who have low levels of vigorous physical activity are four times more likely to be overweight and two times more likely to have high waist circumference measurements.
- Sedentary behaviours, such as watching more than 2 hours of TV a day are associated with high waist circumference measurements.
- High waist circumference measurements correlate with central obesity, a predictor of cardiovascular disease and diabetes.82
- Similar results linking physical activity and obesity were found in many other studies.64,83 Furthermore, associations between TV watching and adiposity and fasting insulin levels have been observed.84
- Data on adolescents from the U.S. demonstrate that regardless of physical activity level, screen time is associated with an increased likelihood of the metabolic syndrome in a dose-dependent manner (Figure 16).84

Figure 15: Odds ratios for clustered cardiovascular disease risk by quintiles of physical activity, as measured by accelerometer. From Andersen et al., The Lancet, 2006.79
Note: cpm = counts per minute (accelerometer output)

Figure 16: Prevalence of the metabolic syndrome (MetS) in males and females according to screen time category in hours per day. From Mark and Janssen, J Public Hlth, 2008.84
Physical activity may play a role in improving emotional wellness

The NBSW Survey asked students to what extent they felt pleasant (happy, energetic, cheerful, active, joyful and lively) emotions on a scale from 10 to 50. The results are presented in Figure 17 and indicate a clear trend that youth who are more active have more pleasant emotions and fewer unpleasant emotions.

What does the research literature say?

A Cochrane Review is a comprehensive review of research literature which follows stringent criteria. Such a review, completed in 2006, specifically examined the effect of exercise in the prevention and treatment of anxiety and depression among children and youth. The main conclusions included:

- There appears to be a small effect favouring exercise in reducing depression and anxiety in the general population of children and youth.
- A small number of studies and large diversity of participants made it hard to draw definitive conclusions.
- Little difference in mental health outcomes is evident between low and high intensity physical activity.
- Evidence base is scarce and is focused on older adolescents.

Other research literature reports associations between improving fitness and depression, anxiety, mood, self-esteem and higher academic performance. Participation in sport in adolescent boys appears to be protective against peer problems and depression. Odds of attempting suicide were found to be lower in adolescent boys and girls who were engaged in vigorous physical activity or participated on a sports team. Figure 18 depicts potential pathways linking physical activity and mental health.

Addressing Research Gaps

While some Canadian data was available this year, the majority of information continues to come from the research literature. The Mental Health grade will remain incomplete until further Canadian data becomes available.

“Addressing psychological concerns may be an essential preliminary component to the success of initiating and maintaining a physical activity routine”.

Figure 17: Student scores for pleasant emotions by physical activity status (NBSW Survey).

* Significantly different to scores for ‘inactive’.

Figure 18: Schematic diagram depicting the possible relationships between physical activity and mental health. Adapted from Floriani & Kennedy, Curr Opin Pediatrics, 2008.

Addressing Research Gaps

Very little national data is available on the relationship between physical activity and mental health in children and youth, and most of the data that is available focuses on adolescents only. There is a need to collect data on the mental health status of younger children and the role physical activity plays in preventing and managing psychological problems.
Addressing Research Gaps

Similar to Physical Health and Mental Health, the indicator for Sleep Health will remain incomplete until further data are available. While some Canadian data were available this year, the majority of information continues to come from the research literature.

The wealth of data confirming that sleep is an important health behaviour is increasing, leaving researchers and clinicians with a struggle to better understand yet another obesity-related co-morbidity. Yet again, there is another question of causality: Does sleep deprivation cause obesity or does obesity hinder sleep quality? Further, does good sleep behaviour promote an increase in physical activity? Or, do healthy physical activity levels promote good sleep behaviours? While extensive data are available from outside of Canada as well as in a small section of Quebec, further surveillance data within Canada needs to be obtained.

Background and Reflections

What are the key messages?
The ‘Quebec en Forme’ project has reported that short sleep duration in children is associated with obesity and more specifically abdominal obesity (Figure 19). The importance of sleep as a health behaviour is confirmed by the fact that sleep duration was a stronger correlate of adiposity in children than parental obesity, SES, education level, TV viewing, or limited participation in after-school sports.

Children and youth are sleeping less
Data on Australian children suggest their sleep time decreased by 30 minutes from 1985 to 2004 because of later bedtimes. Similarly, U.S. children are getting inadequate sleep and young adults are postulated to be getting 1 hour less sleep now than they were a few decades ago.

Attention is increasing on the influence of sleep quantity and quality on health outcomes, in particular on physical activity levels and obesity. A key publication came in 2005 from the Avon Longitudinal Study of Parents and Children (ALSPAC); a study conducted in the UK on 8,234 children followed from birth to age seven. A wide variety of risk factors that might predict obesity at age seven were investigated and short-sleep sleepers (<10.5 hrs/night) at age 30 months were 45% more likely to be obese at age 7 than those who slept longer (>12 hrs/night).

Similarly, a birth cohort from Brisbane, Australia (n = 2,494) showed that the presence of sleeping problems (maternally reported) at age 2-4 years was positively associated with increased BMI in young adulthood (age 21). This finding persisted after controlling potential confounders, including offspring sex, maternal mental health and BMI mediators such as adolescent dietary patterns and TV watching behaviours. In adolescents, it has been postulated that for every hour of lost sleep, the odds of obesity increase by 80%. It is also thought that considerations need to be made for gender differences and the impact of mental health in sleep-obesity associations. Despite the low energy expenditure of sleep, population studies have repeatedly indicated that short sleep duration is associated with excess body mass. The reason for this paradox remains unclear, although some research has suggested that sleep deprivation alters appetite and dietary intake behaviours.

Addressing Research Gaps

A range of questions around sleep and health in children and youth remain unanswered. There is a need to define the best method of measuring sleep time and sleep quality as well as how sleep time affects overall daily physical activity behaviour.
This section re-examines an indicator from 2007 (Family Perceptions and Roles Regarding Physical Activity) as well as one from 2005 and 2006 (Ensuring Kids Are Active). The choice of indicators this year reflects a need to look, not only at what parents perceive their role to be, but also at what actions they put in place.

<table>
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<tr>
<th>Indicators</th>
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| Family Perceptions and Roles Regarding Physical Activity | • Parental awareness of their child’s physical activity patterns  
• Child awareness of their parents’ physical activity patterns  
• Physical activity modeling by parents                     | D      |
| Ensuring Kids Are Active                               | • Parental support and encouragement for their child’s involvement in physical activity  
• Parental engagement in physical activity (i.e. coaching, volunteering, financial support) | B      |

While school and community-based programming are important, children and youth ultimately spend a lot of time within the family home. Therefore, the responsibility on the part of parents and guardians is immense and every effort should be made to provide parents with concise, effective information on how to create a healthy physical activity promoting environment at home. This category is comprised of 2 indicators. The first relates to how parents perceive their role in providing a healthy environment and the second relates to specific actions parents take to ensure their children are active. Figure 20 below is from a 2008 report released by Statistics Canada that demonstrates the influence of parental involvement on sport participation in children and youth in Canada.

The new data this year collectively paint a picture of high parental engagement in physical activity participation in families. This indicator received a B grade this year to reflect increased awareness among parents. However the goal of becoming a physically active nation is certainly unrealized in Canada and parents must continue to be advocates for their children’s healthy futures. We applaud parents on their progress but implore them to stay the course and think of new ways to influence their neighbours, their children’s schools, their local communities and government to take action.

Figure 20: Sport participation rates for children aged 5 to 14 years, by level of parental involvement. From Ifedi, Statistics Canada – Health Reports, 2007.
Main Findings

The CFLRI reported that:

- 30% of parents feel that there are not enough places to be active as a family.
- 21% of parents feel that their children have no peers to play with.
- 25% of parents feel that it is hard to find proper physical activity instruction for their children.

The PEI Sport Strategy Study surveyed parents over the phone and found that:

- 85% of respondents stated that their child was currently participating in a sport.
- The most common reasons given by parents on why their child participated in sport were:
  - Fun
  - Staying in shape
  - Feeling good
  - Being with friends.

Background and Reflections

Has anything changed from 2007 to 2008?

In 2007 we indicated that parents often report that their children are more active than they actually are. This finding could be interpreted as meaning that parents feel pressured by society to have active children and thus report this is the case. Otherwise this finding could simply indicate that parents don’t have a strong handle on their child’s exposure to physical activity or the factors that influence physical activity.

What are the key messages?

Some interesting findings arose this year in the PEI Sport Strategy Study when a comparison was made between child and parental beliefs about and reasons for participation and non-participation in sport. For instance, while children were more likely than their parents to endorse reasons for participation relating to fun, socializing, staying in shape and having new experiences, parents were more likely than their children to endorse safety and keeping out of trouble as reasons for involving their children in sports. In terms of dropping out of sports, children were more likely than their parents to report lack of time as a reason. Conversely, parents were more likely to report the program being cancelled, their child being cut from a team and affordability of the program, as reasons for their child dropping out.

Collectively, the evidence from both Canadian data sources and the research literature indicates that parental modeling is critical in the development of healthy lifestyle habits in children. Parents may be striving to place their children in organized sports to ensure they are active, however they must also remember how critical it is that they themselves model healthy behaviours. Figure 21 shows the proportion of parents who report playing actively with their children often or very often.

Parental modeling of physical activity behaviour

The NBSW Survey asked youth questions about the physical activity levels of their parents. Parents were considered ‘active’ by their children if they reported exercising for 30-60 minutes at least 3 times per week. Just over half (56%) of youth reported that their parents were physically active. Youth who rated themselves as ‘active’ were 3 times more likely to have parents who were also physically active. This relationship indicates that families have an important role to play in modeling healthy behaviour.

The findings of the NBSW Survey are in agreement with messages from the research literature which report that physical activity levels of children and youth appear to correlate with family physical activity levels. In addition, research has shown that parental physical activity levels explain an additional 46.2% of the variance in child physical activity. Young adolescence appears to be a critical time for parental modeling. More specifically, it has been shown that the same-sex parent has especially high influence during this time. A systematic review done in 2006 aimed to unite the existing research on parental influences on children’s physical activity. Overall, the data were mixed. One study found that children in families where both parents are active were more likely to be active: 7.2x for boys and 4.5x for girls. Adolescent girls were found to adopt fewer healthy lifestyle behaviours (physical activity, screen time, diet) if their parents had a history of smoking and were not meeting vegetable and fruit consumption guidelines.8

Figure 21: Proportion of parents who report playing with their children often or very often, presented by region in Canada. North = NWT and Nunavut; West = BC, Alberta, Sask, Manitoba; East = Nfld, PEI, New Brunswick, Nova Scotia; Source: CFLRI
Background and Reflections

Has anything changed from 2005 to 2008?
In 2005, a grade of C- was applied in response to evidence that parents were transporting their children to sporting activities but were less likely to be active themselves at home. Since 2005, more data has come available from CLFRI, the NBSW Survey, and the PEI Sport Strategy Study. The new information indicates that parents are not only providing transportation to activities but are also actively engaged through coaching, refereeing or other volunteer capacities. The importance of this involvement was shown in Figure 20, which demonstrates that participation is higher when parents are more engaged. In addition, the new data indicates that children and youth feel that they are receiving a lot of support and encouragement from their parents to be physically active. Collectively, these findings paint a promising picture and suggest that perhaps parents are becoming more aware of their role in promoting physical activity.

What are the key messages?
Data from CFLRI indicate that many Canadian parents continue to struggle to facilitate physical activity opportunities for their children. A third of parents reported that there are not enough places to be active together as a family. Twenty-five percent of parents report that they cannot find proper sport instruction for their child. What does this suggest about the built environment of our local communities? What types of facilities and outdoor spaces are these parents searching for?

Parents of children with disabilities are faced with unique challenges to ensure their children are active. A large proportion of parents (82%) cited “insufficient staffing or insufficient special education services” as the primary challenge faced within the school system. Problems with getting children properly tested (51%) and communication difficulties with the schools (48%) were also reported as challenges faced by parents. What is the additional strain placed on the family unit and the health of parents in these situations?

Providing encouragement is key for parents to ensure their kids are active
The NBSW Survey asked youth the following question: “How much do your parents, step-parents or guardians encourage you to be physically active?” It is encouraging to note that 78% of youth reported that both of their parents or guardians encouraged and supported them in their physical activity pursuits. This support appears to decline as youth get older, however it is unknown whether the decline is simply reflective of the decrease in physical activity itself as children get older. Youth who were classified as active (based on self-report) were two times more likely to receive parental support and encouragement for physical activity. This finding is intuitive, but also suggests that encouragement acts as a facilitator to ongoing physical activity participation.

Findings in the research literature suggested that adolescent-reported maternal and paternal encouragement to be active and paternal care for fitness were positively associated with increased weekly hours of moderate-to-vigorous physical activity. The PEI Sport Strategy Study surveyed parents over the phone and found that mothers were more often (87%) providing information pertaining to their child’s physical activity and sport pursuits. This finding suggests that mothers might be more engaged in organizing participation in physical activity and sport, however this is difficult to confirm.

The conclusion of a review of this research was that parental support is important, both directly by affecting levels of physical activity and indirectly by affecting self-efficacy. The 3 most important forms of influence were: ENCOURAGEMENT, INVOLVEMENT and FACILITATION.

Main Findings
The PEI Sport Strategy Study surveyed parents over the phone and found that:
- Approximately half (52%) of parents reported that they contributed to community sport as a coach (10%), referee (4%) or volunteer (38%).

The NBSW Survey indicated that:
- 78% of youth surveyed report that their parents encourage and support them to be physically active.
- Youth report that parental support decreases as they get older: 87% of Grade 6 to 8 youth report receiving support while only 70% of youth in Grades 9 to 12 report the same.
- Active children were more likely to report that their parents were supportive and encouraging.
- Active children were more likely to report that they had physically active parents.

Addressing Research Gaps
How does parental physical activity modeling impact upon children’s physical activity behaviours in the short-term and later in life? Would interventions aimed at increasing physical activity levels in children be more effective if they engaged the whole family unit?
The 2008 Report Card indicators build on those from previous years, taking a look at the role of key people, as well as the role of spaces and equipment, in supporting physical activity at school.

A key area of concern in looking at schools and physical activity is the lack of research into and evaluation of school programming. There is a need for more in-depth and objective examination of physical education and physical activity in schools.

### School-Community Assets and Engagement
- Shared use of school and community facilities
- Use of community experts in school
- Engagement of parents
- Staff and student role modeling
- Student roles in developing/delivering programs

### School Sport Opportunities
- Documented benefits of school sport
- Participation opportunities and limitations
- Student perceptions of school sport

### Effective Evaluation of School Programming
- Type and frequency of evaluation
- Objective research and evaluation

### School Facilities and Equipment
- Facilities and equipment available
- Quality of facilities and equipment

### Active Transportation to School
- Proportion of children and youth actively commuting to and from school regularly

School continues to be a key consideration in the Report Card because it plays a key role in facilitating and inhibiting overall physical activity behaviour given that it is an environment where children and youth spend a large proportion of their time each week. The variation between provinces, regions, school boards, and schools has made this category a challenging one to characterize at the national level. This has always been a key area of consideration for the Report Card, but one of the most difficult for which to gather information.

An increasing number of studies are available, but data that reflects a broad-based national picture are more difficult to access. The CFLRI Survey of Canadian Schools, conducted in 2000 and then 2005, has been the primary information source, with supporting studies and literature considered as well.
Retrospective

As the Report Card has evolved over four years, we have sought to explore different areas relating to school-community influences on physical activity as effectively as possible, considering the challenge with respect to available information.

Grades assigned in 2005 included *Daily Physical Education* (F), and *Trained Personnel* (C-) and were based on the 2000 CFLRI Survey of Canadian Schools. In 2006, having no new data, Physical Activity at School was given a grade of “incomplete” to identify how little current research we had about this important setting, and information about promising interventions was shared.

For the 2007 Report Card the data from the 2005 CFLRI Survey of Canadian Schools was just becoming available, and the early findings examined indicators that reflected *creating physical activity as a social norm in schools*. The CFLRI findings were supported by some key provincial research. The indicator *Physical Activity Programming at School* (C), built on the 2005 indicator for *Daily Physical Education* as it considered both scheduled physical education classes and daily physical activity initiatives. Research in this area demonstrated that daily physical education is not typical and that while some strong successes could be noted in initiatives that supported daily physical activity, daily physical activity overall was not consistent in its implementation.

*Training of School Personnel* (C-) built on its corresponding 2005 indicator as well. This looked not only at more support being provided to those considered physical education “specialists”, but also to the provision of training for all staff as they have a key role to play in fostering a culture of physical activity in schools. A new indicator for 2007 was *Social Support for Physical Activity at School* (B-), which looked at the way in which physical activity was communicated and promoted in schools. This demonstrated some positive findings, as several schools initiated activities that contributed to growing awareness and engagement in physical activity as a key element of the school experience.

So where are we now?

This section provides a follow-up look at the 2007 indicators, as well as examination of the new indicators for 2008.

School and Community: Key Partners

The 2007 Report Card noted that comprehensive and community engagement approaches played a key role in successful physical activity programs and initiatives in schools. In 2008, this has been examined more closely, looking at the degree to which schools are working effectively to access and engage the assets in the community to support physical activity promotion.

Figure 22 reflects some of the elements considered to inform this indicator, demonstrating that while reports of shared use agreements are high, access to community assets is not as strong, particularly in relation to the engagement of community experts to support students and teachers. Efforts to engage with parents are notably low. Findings on school-community relationships are further explored on the following pages.
Main Findings

As reported by the CFLRI

School-Community Partnerships
- 84% of schools and 76% of municipalities report shared use agreements.
- 89% of schools indicated that community groups use schools after hours and 75% say they charge fees for this access.
- 40% of schools bring in outside experts to support curricula for students.
- 20% of schools bring in outside experts to train staff.

Student Engagement
- 67% of schools report that they have policies to encourage students to role model physical activity behaviour.
- 45% of schools report that they have policies to encourage students to role model physical activity behaviour.

Parental Engagement
- 20% of schools report having a policy to encourage parental role modelling of physical activity behaviour.
- 24% of schools report having a policy to encourage parents to incorporate physical activity into their family’s daily life.

Background and Reflections

What has changed from 2007 to 2008?
Reflecting on 2007 Report Card indicators, there are some interesting things to consider, which are explored on the following pages. The examination of both physical education and daily physical activity for the Physical Activity Programming at School indicator in 2007 attempted to identify the importance and need for both elements.

What are the key messages in 2008?
The assessment of School-Community Assets and Engagement involved a number of elements, considering relationships with community partners, students, teachers and parents. The overall picture that emerges shows some promise, but there is clearly room for improvement.

Last year’s Report Card indicated that two-thirds of schools have policies or programs that encourage teachers, parents and students to be involved in organizing physical activity events, services and facilities. In addition, almost three-quarters of schools promote community physical activity programs to students and their families. While some progress is happening here, further engagement of these key players is important. The 2005 CFLRI Survey of Canadian Schools indicated that 67% of schools encourage student involvement in organizing physical activity events, but only 45% encourage students to role model physical activity behaviour.

Comparable studies conducted in Ontario105 and New Brunswick (NBSW Survey) reveal student perspectives on their experiences with physical activity promotion at school. The Ontario study notes that 44% of secondary students believed that schools place a lot of emphasis on informing students about opportunities to be physically active and 38% believed that schools placed emphasis on developing positive attitudes about physical activity. Scores were lower in New Brunswick at 40% and 37% respectively. It is important to note that those who identified that an emphasis was placed on developing positive attitudes toward physical activity, also reported higher physical activity levels. In the New Brunswick study, 57% of students indicated that the school put an emphasis (ranging from some emphasis to a lot of emphasis) on involving students in planning and organizing physical activities.

Staff Engagement
With respect to staff engagement, the 2005 CFLRI Survey of Canadian Schools indicates that 61% of schools report having policies/programs that encourage teachers to act as role models. The NBSW Survey referenced above indicates that approximately 50% of students say there is an emphasis placed on school staff being active.

Forging links between schools and communities
Partnerships regarding the use of school-community assets to support programming could be improved as only 40% involve outside experts to support curricula for students, and only 20% hire outside experts to train staff.

Parental Engagement
Outreach to influence and engage parents, or place emphasis on the role of families, is least evident. Only 20% of schools in the CFLRI study indicate encouragement of parent role modeling of physical activity and only 24% encourage parents to incorporate physical activity into family time. The SHAPES Ontario study indicates that only 40% of students feel that health and physical education instruction addresses the role of family influence on physical activity.105 A small survey recently conducted with approximately 1000 educators by the Ontario Physical and Health Education Association (Ophea) provided evidence of this gap, as many educators identified the need for stronger parental engagement in relation to healthy active living for students, but a considerably smaller number identified this as a priority goal for their own work.106 It is important to improve the ways in which schools and families and other community partners work together as these are critically important partnerships. Effective school-community physical activity interventions indicate strong engagement of students, teachers, administrators, parents and community partners.107
Is physical education being taught by specialists?

With respect to the Training of Personnel indicator, there was a need to consider the training and support provided to both the physical education “specialist” (those who have university level training) and other classroom teachers, as both have a role to play in supporting physical activity for students. Looking closer at these roles, 77% of Canadian schools indicated they have access to a specialist, yet only 65% indicated that all students regularly received physical education instruction from those specialists, and only 23% indicated that only specialists deliver health and physical education curriculum. Further, only 46% of schools have fully implemented policies to hire specialists and 37% say they have no policy to hire specialists, demonstrating an increase from 2001. Figure 23 depicts the geographical breakdown in the proportion of students receiving physical education instruction from a specialist.

Addressing Research Gaps

There is an important opportunity to do research and evaluation relating to the role of health and physical education specialists in the quality delivery of physical education and physical activity programming at school. This research needs to be conducted to inform future report cards.

The importance of investing in physical education

Quality physical education programs should provide education in physical skills and strategy, building competence and confidence in children. In most provinces, the health curriculum is also integrated with physical education and therefore dedicated class time is important for student learning in relation to health and wellness. Daily Physical Activity (DPA) should ensure student participation in moderate to vigorous physical activity to build fitness levels, and be done as part of a health and physical education class or in other ways. Concern among physical educators is that with the increase in DPA policies, schools may “replace” scheduled health and physical education class time with DPA activities only. Comprehensive evaluation with respect to the implementation of DPA policies in those provinces that have implemented them is not available, but an annual Ontario survey of public schools conducted by People for Education revealed that in 2006 and 2007 the number of scheduled minutes for health and physical education had decreased. It is not clear if this is correlated with the beginning of DPA implementation in Ontario schools in 2006, but the concern about a possible trade-off of health and physical education time for DPA time was expressed in the 2007 report.?

This report also indicated that 46% of Ontario schools charge fees in relation to physical education classes, which may create disparities and inequities among access to and the quality delivery of physical education among students. It is important that students have the opportunity to be physically active AND to learn skills that help them build a foundation for lifelong active healthy living.
School Sport Opportunities

Main Findings
As reported by the CFLRI
- 58% of schools report placing a strong emphasis on student participation in sport.
- 72% of schools report placing emphasis on the engagement of girls in sport.
- The 2007 TTFM Survey indicated that 44% of students in Grades 5 to 12 were involved in school sport.

Background and Reflections
Sport participation has been examined previously in the Report Card, as has physical activity programming in schools. Therefore, School Sport Opportunities is not a completely new indicator this year, but rather one with a revised focus. School sport includes competitive and recreation sport opportunities.

The information below outlines the challenges faced by schools with respect to resources, space and facilities. The climate and focus around school sport is also discussed.

The benefits of school sport are far-reaching
School sport can play an important role in supporting physical activity opportunities for children and youth. The 2007 TTFM Survey results indicated positive correlations between school sport participation and school climates as well as positive teacher-student relations. These survey results also indicated that school sport participation served as a protective factor against anxiety, depression and low self-esteem. As such, the opportunity for increased school sport participation among a broader population seems a good strategy for many areas of child and youth development.

The challenges faced by schools to provide sport opportunities
The delivery of school sport opportunities can be challenging as limitations on space and resources can prevent a comprehensive set of offerings that are suited to a variety of students. Very often it is the same students participating on a number of teams and intramural sports, with many others not participating.

School climate in relation to school sport
The CFLRI Survey of Canadian Schools indicates that 37% of schools place a strong emphasis on competitive school sports, 53% on individual activities or sports, 46% on strong sport teams and 58% on recreational team sports. With respect to gender, 72% of schools report that they place a strong emphasis on trying to engage girls in sports. Only 25% have policies for “no cuts”/full participation and only 18% of these have implemented these policies. Fifty-eight percent have no such policy in place. At the other end of the spectrum, higher-level athletes also face challenges as only 16% of schools offer specialized sport programs.

What do the students report?
Studies in Ontario and New Brunswick indicate that school sport opportunities can be improved. In both studies, just over 40% of students indicated satisfaction with school sport offerings, while 20% in Ontario and 30% in New Brunswick felt there was not enough school sport opportunities. Furthermore, People for Education’s 2007 Report on Ontario public schools indicates that 77% of schools charge fees for extra-curricular athletics, noting a 26% increase since 2001. As such, like community sport, school sport may be more challenging to access for low income families.

It is also important to point out that while school sport has a key role to play, it will appeal only to some students. In the studies cited above, 25-30% of students indicate that school sport opportunities “don’t matter” to them. It is difficult to assess however if they have no interest in sport or if limited offerings are the issue.

In any case, the benefits of school sport are evident, and the ability to offer programs at both the broad participation/recreational and competitive levels can prove challenging in association with another indicator – facilities and equipment – often identified as one of the primary challenges.
Effective Evaluation of School Programming

Background and Reflections

Various groups across Canada are taking strides to overcome this often forgotten cornerstone for developing sound programming. It is encouraging to note that several groups are undertaking this effort and we can expect useful information to emerge in the future that will better inform the aspects of programs that are successful.

Effective Evaluation of School Programming

The CFLRI 2005 Survey of Canadian Schools did inquire about evaluation practices. While the majority of schools indicated that they evaluated their program against provincial curriculum standards on an annual basis (88% use provincial territorial curriculum standards, 36% use national or international guidelines, 27% use Quality Daily Physical Education (QDPE) recognition award standards), the data do not reveal any details about the manner in which this evaluation is conducted, with whom the information is shared, or how the information informs programming developments. There has been no change in the use of any of the standards since 2001.

The 2008 People for Education report suggests that while the majority of Ontario schools indicate they have begun implementation of the Ministry of Education’s Daily Physical Activity (DPA) policy, challenges with space, time-tabling and teacher comfort in delivery are evident. However, there are no available data that assesses the quality or consistency of DPA implementation in the province.

In fact, there are no mechanisms in existence through which to get a strong national picture of the quality of implementation of school-based physical activity programming in general. In the 2007 Report Card, objectively measured data regarding physical activity levels indicated that self-report information over-stated actual physical activity levels of children and youth. It is possible that the same self-report limitations may exist in relation to the information gathered on school-programming and physical activity in the school setting overall. Consequently, there is a clear research gap and a need exists to gain more objective measures of physical activity in schools.

Newfoundland – Taking a lead on evaluation of school physical activity programming

Researchers at Memorial University of Newfoundland are taking steps to collect key evaluative information on the ‘Active Schools’ program implemented there. The primary aim of the Active Schools program was to increase physical activity levels during the school day as well as after school and on weekends. Preliminary data (n = 478) suggest that physical activity levels are less than desired among both boys and girls. The good news however, is that measures taken 6 months following the launch of the program show that daily physical activity levels had increased both during and outside of school hours. This provincial research program is scheduled to continue so stay tuned for more comprehensive updates in future Report Cards!

Manitoba – Investigating behaviour change

A transdisciplinary team of researchers, policy-makers and practitioners representing public health and education organizations are collaborating to apply rigorous research methods to investigate the behavioural effects of the new Grades 11 and 12 health and physical education curricula in Manitoba. For more information on this project, check the Government of Manitoba website: http://www.edu.gov.mb.ca/k12/cur/physhlth/index.html.

Ontario’s Physical Literacy Measurement Initiative – Gathering key information within the school setting

A “Physical Literacy Initiative” is in the planning stages and is being led by the Healthy Active Living and Obesity Research Group (HALO) at the Children’s Hospital of Eastern Ontario Research Institute, in collaboration with the Upper Canada District School Board, Active Healthy Kids Canada, ParticipACTION, CAHPERD, Champlain Local Integrated Health Network and the Champlain Cardiovascular Disease Prevention Network. The aim of this initiative is to research, design and implement a battery of tests which will provide robust, relevant and useable information relating to cognitive, behavioural and physical measures (e.g. questionnaires, physical activity diaries, pedometer measures, tests of motor development and fitness tests). This initiative may provide a much-needed evaluation tool. Stay tuned!
Background and Reflections

School facilities and equipment are important factors to consider, as spaces and places to play and be physically active in schools are an absolute necessity. For example, the 2008 People for Education Report and Ophea’s survey both indicate that educators in Ontario identify challenges with facilities and equipment as a problem with respect to the implementation of the Daily Physical Activity (DPA) Policy.106

The grade assignment for this year is incomplete as, while there are some available data, it is very difficult to get a fully accurate reflection on the availability and quality of spaces for physical activity in schools.

Main Findings

- 91% of schools allow students to use outdoor facilities after-school. (CLFRI)
- 80% of children report their gymnasium is in good condition. (HBSC)

What attempts are being made to ensure ongoing funding for school equipment?

The CFLRI 2005 Survey of Canadian Schools indicates that 40% of schools have fully implemented policies to fundraise for physical activity equipment, 30% have partially implemented such policies, and the remaining 30% have no policy in this regard. However, there is no clear sense of whether school personnel or parents are leading fundraising efforts, or what percentage of school fundraising is dedicated to physical activity equipment. This data speaks only to equipment and not to funds raised in support of facility development, repair or renewal.

More importantly, there is no clear sense of what funds are dedicated from base budgets in schools to support the acquisition and maintenance of physical activity equipment and facilities. This is important to note because if resources are derived primarily from fundraising efforts in school-communities, disparities may potentially emerge as some of those communities are more equipped to generate revenue in this manner than others.

Access to school equipment and facilities

The CFLRI 2005 Survey of Canadian Schools indicated that 91% of schools suggest students can use outdoor facilities after school hours, which is up substantially from 76% in 2001. Only 56% indicate students can use indoor facilities after school. Provincial differences are noted in Figure 24.

Access to community equipment and facilities

Data on access to other large scale facilities is conflicting. For example, the CFLRI 2005 Survey of Canadian Schools indicated that approximately 60% of schools have access to a skating rink/arena, whereas the HBSC indicates that 70% of schools say there is no arena within a 1km radius of the school and 30% indicate no arena within a 5km radius. Similarly the CFLRI study revealed that nearly 40% of schools indicate access to a pool, whereas the HBSC says that 91% indicate no pool within a 1km radius (Figure 25) and 83% indicate no pool in a 5km radius. Similar discrepancies exist on reported access to trails and community centres. Therefore, it becomes difficult to assess to what degree schools can realistically access community facilities in support of school physical activity programming. One possible explanation for these discrepancies may be that the HBSC only surveyed youth, whereas the CFLRI data surveyed children and youth across a range of ages.

Are students happy with the facilities they have access to?

Satisfaction with these basic school facilities among students is worth noting, as both the HBSC Survey and the NBSW Survey indicate that only about two-thirds of students feel that outdoor facilities are in good condition and meet their needs. Both studies show that approximately 80% of students feel gymnasium spaces are in good condition and meet their needs.

Figure 24: After-hours access to school facilities, by province (CFLRI).
Are schools and municipalities working together to create safe and accessible spaces conducive to physical activity?

CFLRI’s 2005 Survey of Canadian Schools indicates that 84% of schools report having shared use agreements with municipalities. What is interesting to note is that when municipalities were asked the same question in the CFLRI 2004 Survey of Canadian Municipalities, only 76% of municipalities reported such agreements. It is not clear if this is a result of an increase in such partnerships in the one-year timeframe between the two surveys, a difference in perceptions among the two audiences, or simply a lack of knowledge about other departments on the part of the person completing the survey.

What do schools have access to in their community?

With respect to what community assets these partnerships can provide to schools, 63% of schools indicate they have access to trails, 60% have access to sport and recreation facilities and 50% have access to community centres. While some of these numbers are encouraging, it is important to remember that having access does not automatically infer usage.

Are communities allowed to use school facilities after hours?

In terms of community access to schools after hours, 89% of schools indicated that community groups can use schools after hours, which is a decrease from what was reported in 2001. An area of future research would be to examine actual usage by outside groups and how well the facilities meet their needs. Seventy-five percent of schools say they charge fees to at least some groups for this access, a trend which has remained stable between 2001 and 2006. Seventy-four percent of schools indicate that liability concerns (ranging from somewhat to a great deal) limit the kinds of physical activity that can occur in schools. In Ontario, the 2007 People for Education report indicates that schools reporting the lowest levels of user fees report the highest levels of community use. A more recently released report from People for Education in 2008 indicates that since 1997/98, the percentage of Ontario schools charging fees for community use has doubled, with almost three-quarters of urban/suburban schools charging fees in 2006/07. This is noted along with other research, that despite a government investment supporting community use of schools in Ontario, more is needed.

Aging infrastructure is a problem

Many provinces have raised issues concerning aging school infrastructure. Provincial government investments have been announced for Ontario, Alberta and Newfoundland, while provinces are calling for a federal investment in aging school infrastructure. It remains unclear however to what degree physical activity resources are considered within these infrastructure funding assessments.

Findings in this area are insufficient, and further research is needed to help us better understand the issues faced by schools with regard to their facility and equipment resources. These are not the only issues that require further exploration, as is discussed in the following indicator.

Not only is information on access to resources sparse, it remains difficult to assess the quality and maintenance of facilities given the age of many schools and enrolment numbers affecting funding. Interestingly, since 2004 the Ontario government has made investments into school infrastructure renewal, and at the same time a Parks and Recreation Ontario study of infrastructure indicated a strong need for community pools. There is clearly a disconnect between these events (i.e. the sharing of resources, specifically pools, between schools and communities) that should be explored.
Main Findings

- Approximately half of the youth surveyed in the WEB-Span Study reported using active transportation to and from school.
- The NBSW Survey indicates that 10% of the youth sampled in that study reported using active transportation to and from school.
- Boys are more likely to use active transportation to get to and from school than girls (11% vs. 9%).
- Youth in Grades 6-8 are more likely to opt for active transportation than are youth in Grades 9-12 (12% vs. 8%).

Background and Reflections

Getting to and from school is a daily practice for kids. It becomes increasingly important to identify their means of transportation as this presents a unique opportunity for intervention. Do children and youth walk, roll or cycle to school? The few data sets available suggest that not many are using active means to get to school. Why is this?

A few factors are likely at play and range from safety concerns, unrealistic travel distances between home and school (due to an increased reliance on regional schools instead of local community schools), fear of bike theft and lack of time for parents to walk with their kids to school.

Main Findings

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How does the environment impact upon active transportation?

Much of the research on active transportation has been conducted in adult populations with little research considering children’s participation in active transportation. Active transportation is a potential source of regular physical activity and refers to modes of commuting to and from school and to and from after-school activities, such as walking, bicycling or roller-blading.

Active commuting has largely been overlooked as a source of children’s physical activity and can be influenced by aspects of environmental design such as sidewalk and path networks, street connectivity, and proximity to schools and amenities.

Studies of U.S. children and youth identify that active commuting is associated with parental and child perception of residential density, proximity to amenities, public transportation, street connectivity, walking and cycling paths, aesthetics, pedestrian traffic safety and crime.

Figure 26 shows that, across Canada, less than half of children are regularly using active transportation to get to school.

Addressing Research Gaps

To date, no studies have reported on the role of the built environment on active commuting among Canadian children. This gap presents the need for Canadian data to establish whether environmental factors have the capacity to influence rates of active commuting in Canadian children and youth.
Active Transportation to School

What is a walking school bus?

A Walking (or Cycling) School Bus involves two or more families traveling to and from school together for safety.

“The Walking School Bus is a great way to help reduce traffic congestion around our schools, making our communities safer for everyone.”

– Toronto Police Service, School Liaison Officer involved with the Active and Safe Routes to School program

For more information, visit: www.saferoutestoschool.ca.

Why bother with active transportation to school?

The question that should really be posed is: “How can we afford not to encourage active transportation with the benefits of it being numerous and far-reaching?”

The CFLRI highlights the following benefits associated with active transportation to school:

- Increased physical activity for children and youth
- A healthy lifestyle activity for the whole family
- Less traffic congestion around schools
- Safer, calmer streets and neighbourhoods
- Improved air quality and a cleaner environment
- Opportunities to develop life skills, including the capacity to look after oneself

Taking the lead on collaborative efforts

The Healthy Living Unit within the Public Health Agency of Canada (PHAC), on behalf of the Federal Government, has the lead responsibility for initiating activities pertaining to physical activity. The Unit uses a multi-sectoral, multi-level and multi-disciplinary approach to creating partnerships, and is currently engaged with or actively supporting initiatives concerning active transportation. For more information, please visit: http://www.phac-aspc.gc.ca/pau-uap/fitness/active_trans.htm.
Community and the Built Environment

The key message is that the majority of parents report that they have good access to programs, facilities, parks and playgrounds. However, only 23% of parents report actually using facilities and programs in their community and only 34% report actually using parks and outdoor spaces in their community. The question therefore becomes: Why aren’t people using the facilities and programs available to them?

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Components</th>
<th>Grades</th>
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<tbody>
<tr>
<td>Access to Facilities and Programs</td>
<td>• Proportion of parents who report that access to facilities and programs is adequate</td>
<td>B+</td>
</tr>
<tr>
<td>Use of Facilities and Programs</td>
<td>• Proportion of children actually using the facilities and programs on a regular basis</td>
<td>D</td>
</tr>
<tr>
<td>Proximity to Parks/Playgrounds</td>
<td>• Proportion of parents who report that access to parks and playgrounds is adequate</td>
<td>B+</td>
</tr>
<tr>
<td>Use of Parks/Playgrounds</td>
<td>• Proportion of children actually using the parks and playgrounds on a regular basis</td>
<td>D</td>
</tr>
<tr>
<td>Municipal Regulations</td>
<td>• Existence of by-laws hindering physical activity</td>
<td>D</td>
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<tr>
<td></td>
<td>• Spending policies regarding new resources and maintenance of existing resources</td>
<td></td>
</tr>
<tr>
<td>Urban Design</td>
<td>• Proportion of cities making a conscious effort to design their cities with physical activity in mind</td>
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There is growing recognition that the built environment (the man-made physical structures and infrastructure of communities) has an impact on our health. Factors related to the design of our communities in which we live, play, work and learn, specifically urban sprawl and facility access, have the capacity to influence an individual’s ability to make healthy behaviour choices. Increasing evidence shows that the characteristics of the built environment, from the presence of parks to the availability of community programs, are directly linked to physical activity behaviour. It is encouraging to note that some urban design firms are taking steps to design and build healthier communities. Fortunately, the characteristics that make a community conducive to physical activity also relate to other pressing societal issues including global warming, sustainability and transportation infrastructure. The likelihood that societal shifts will occur in relation to physical activity and green movements will be optimized as a range of sectors who historically have not worked together begin to sit at the same tables.

Figure 28: Parental report of access to and use of facilities, programs and parks and playgrounds (CFLRI).
Can we really expect children and youth to be active?

On one hand, it seems as though we are striving tirelessly to think of ways to increase physical activity levels among our youth. Perhaps in our angst to be innovative, we have forgotten the simple fact that for kids to be active, it has to be easy and natural for them. In preparation of the 2008 Report Card, the Research Work Group became interested in how many major municipalities across Canada have by-laws in place that discourage physical activity. The 27 largest municipalities were identified, contacted by phone and email, and asked 3 simple questions (see Figure 29). Responses were obtained from 24 of the 27 municipalities.

Alarmingly, 96% of the 24 municipality representatives surveyed reported that their municipality had at least 1 by-law that would be considered prohibitive to physical activity in children in youth. Three-quarters of municipalities have by-laws specifically aimed at restricting bicycle and skateboard use in public areas. Road hockey is often seen in commercials and media as an activity representative of Canadian values and history, however what is not advertised is that road hockey is not allowed by law in over half of our major Canadian municipalities.

![Figure 29: The proportion of major Canadian municipalities with by-laws that discourage physical activity and free play in children and youth.](image)
Community and the Built Environment

Addressing Research Gaps
How common are municipal by-laws similar to those described on the previous page? Are there other less obvious by-laws in place at the municipal level which could be re-formulated to keep physical activity options as open as possible? Further research on a larger sample of Canadian municipalities would provide a more comprehensive picture of what is happening. Are there provincial differences? Are there urban/rural differences? The purpose of these investigations would be to determine whether these differences associate with increased or decreased physical activity levels.

Other information that would be useful in grading this indicator is the degree to which policies are in place to ensure that ongoing funds are available to maintain existing facilities and make additions as needed.

“Countless communities have virtually outlawed unstructured, outdoor, nature play, often because of the threat of lawsuits, but also because of a growing obsession with order. Many parents and kids now believe outdoor play is verboten even when it is not; perception is nine-tenths of the law.”

(Excerpt reprinted from LAST CHILD IN THE WOODS by Richard Louv, courtesy of Algonquin Books)
An emerging key indicator

The built environment, as it relates to health, remains in its infancy as a field of research. Each year, new information is emerging confirming that the way we design the spaces we live in has the potential to alter our behaviour.

This indicator has been evolving in the past, with the data from CLFRI on parental reports of access and use of community facilities and programs. With new information coming available in the literature and funding in place for Canadian-based research in the area, there is all likelihood that this indicator will become more comprehensive with every passing year.

Questions we can answer by exploring the built environment

Does manipulation of street connectivity, provision of bike lanes and interconnected suburban design really change a population’s physical activity and walking rates? The answer to this question remains unknown, however many hypothesize that strategic changes in the physical or built environment have the potential to have a significant impact on physical activity behaviours at a population level.

The local community presents a unique opportunity for increasing activity levels of children and youth away from the school environment. The built environment as it pertains to the community includes such variables as the availability, accessibility and proximity to parks and facilities, walkability of neighbourhoods, neighbourhood safety, and the degree of urbanization.

What kind of research is emerging in Canada?

A research team from the University of Alberta recently reported the following key findings:119

• Approximately 15% of children aged 4-6 years in Edmonton were overweight or obese and associations existed between aspects of the built environment and bodyweight status among girls but not boys.
• The odds of a girl being overweight or obese were lower if she lived in a walkable neighbourhood with more intersections. These associations persisted even after controlling for measures of neighbourhood-level socioeconomic status (SES).

Why all the attention around ‘walkability’?

In the past, investigations of how the built environment relates to a wide range of health ailments were conducted separately. More recently, attempts have been made to bring this information together to present policymakers with more comprehensive information about how land use patterns affect health.

Potential pathways by which the built environment impacts health have been proposed:118

1. If the built environment reduces opportunity for active transportation, this may reduce total physical activity, and potentially increase risk for chronic disease.
2. If the built environment stimulates increased time spent in vehicles, it may reduce physical activity, and both of these may contribute to obesity, potentially increasing risk for chronic disease.
3. If the built environment stimulates increased vehicular travel, this may increase per capita vehicle emissions, which in turn increases exposure to pollutants and risk of respiratory and cardiovascular ailments.

When physical activity was objectively measured using accelerometry and investigated in relation to community design, associations were observed.120 The authors concluded that this research supported the rationale for development of policies that ‘promote increased levels of land-use mix, street connectivity, and residential density, as interventions that can have lasting public health benefits’.

What is “walkability”?

Stated simply, walkability is a measure of the overall walking conditions of an area. Researchers create a ‘walkability index’ which is a construct based on the following:

• net residential density: residential units divided by acres in residential use
• street connectivity: # of intersections per square kilometre
• land use mix: evenness of distribution of square footage of residential, commercial, and office development
• retail floor area ratio: retail building floor area divided by retail land area

Addressing Research Gaps

Does urban design affect children and youth of varying ages in different ways? For example, does one type of neighbourhood design work well for preschool-aged children and another for adolescents? How do urban planners create spaces that cater to all needs in a community? Furthermore, it is possible that different physical activity indicators are needed for children/adolescents when compared to adults. For example, research has shown that ‘cul-de-sac’ or dead-end roads keep children more active, however the same is not true for adults. Finally, emerging data suggests that the walkability concept works best in “urban settings”, however it is unknown whether the equivalent concepts apply to suburban and rural settings.
What do we know already in Canada?

Canadian data, though sparse, indicates that Canadian youth express accessibility, cost and safety as common barriers to being physically active. The Canadian literature further demonstrates that perceived availability and importance of neighbourhood and facility resources is associated with physical activity among youth. These findings indicate that we need to start addressing some of these issues.

Few studies have reported on the relationship between community level built environment and physical activity levels among children and youth in Canada. Much of the international literature has focused on the access to or availability of physical activity facilities, programs and neighbourhood hazards. Findings from this research are inconsistent, with some studies reporting negative associations, some reporting positive associations and the majority reporting no association with physical activity at all.

Limited research exists on how other built environment factors, such as distance to facilities and degree of urbanization, relate to physical activity levels in children and youth. This area of research is still in its infancy and there is a lack of consensus as to the methods used to assess and measure the community environment. The variability in factors studied and methods used makes it difficult to compare results across studies. Work is still needed to conceptualize and measure the environmental factors that influence physical activity in children and youth (Figure 30). Furthermore, Canadian data are required to understand the community environment and physical activity behaviour relationships within the Canadian context.

What is on the horizon in Canada?

Progress is well underway to gather key information on how the built environment relates to child and youth health issues in Canada.

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, Population and Public Health, put forth a strategic request for applications in the area of the built environment, obesity and health. Twenty-four full applications were received and nine gained funding, three of which are specifically investigating child and youth related issues:

1. Barnett, TA. 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. (Sainte-Justine Hospital)
2. Lyons, RF and Grant, JL. Optimizing investments in the built environment to reduce youth obesity. (Dalhousie University)
3. Spence, J. A longitudinal study of environmental determinants of overweight among children: The SHAPEs of Things to Come. (University of Alberta)
The role of urban design in the health of children and youth

Urban sprawl is a pattern of development in metropolitan areas whereby large percentages of the population live in lower-density residential areas. The consequences of urban sprawl include increased reliance on automobiles, decreased motivation to walk, and reduced opportunities for exercise because of the time required to travel to recreation facilities and other destinations.\(^{125}\) While the most recent cycle of the Canadian Community Health Survey did not include a specific measure of urban sprawl, the findings indicate that residents of municipalities farthest from urban centres are the most likely to be obese;\(^ {48}\) a result consistent with U.S. research.\(^ {126}\)

In addition to affecting the physical activity patterns of Canadians, the built environment can also influence food intake. Research at the University of Alberta demonstrated that incidence of obesity and overweight may be related to accessibility and composition of fast food outlets in Canadian cities.\(^ {127}\)

The Canadian Parks and Recreation Association (CPRA) is a leader in bridging the gap between research and practice by building capacity, identifying issues and sharing findings. Their Canadian Research Agenda outlines specific goals including: identification of key priority areas, a communication plan, partnership opportunities, annual research round-tables, research awards and maintenance of a database of key representatives in all related fields (www.cpra.ca).

The Canadian Urban Health Institute (CUHI) is an organization based at the University of Toronto, which is helping to improve the understanding of how the physical and social environments affect the health of urban residents. Some exciting research is emerging and ranges from identifying inactivity trends to measuring the impact of garden space on community cohesion and creating ‘green’ school grounds that invite children to jump, climb, dig, lift, rake, build, role play, and generally get active (www.cuhi.utoronto.ca).

The Canada Green Buildings Council will be launching a new Leadership in Energy and Environmental Design (LEED) Green Building Rating System in Spring 2009. While the primary aim of these guidelines is focused around 5 environmental pillars: sustainability, water efficiency, energy and atmosphere, materials and resources, and indoor environment air quality, the ensuing characteristics of communities following these guidelines are also conducive to active living. The catch phrase ‘new urbanism’ is gaining momentum and reflects a push to improve streetscapes and parks, use compact design, and ensure houses are built in close proximity to schools, corner stores, and public transit (www.cabgc.org).

In early 2008 the Canadian Institute for Health Information released a report entitled ‘State of the Evidence Review on Urban Health and Healthy Weights’.\(^ {128}\) This systematic review was commissioned by the Canadian Population Health Initiative to review and synthesize the information on:

1. Structural and community-level characteristics of urban environments that promote or inhibit the achievement of healthy weights
2. Effectiveness of interventions to assist urban populations in achieving healthy weights.

Key findings included:

- Lower family socio-economic status (SES) was associated with obesity, lower physical activity levels and increased reporting of barriers to physical activity opportunities.
- Like family-level SES, lower neighbourhood SES was associated with obesity, lower physical activity levels and increased access to fast food.
- The urban built environment was associated with both physical activity and healthy body weights.
- Studies consistently show that factors that promote obesity (for example, urban sprawl, low intersection density, low residential density, low land-use mix) tend also to favour sedentary behaviour and lower physical activity levels. It should be noted that these data need to be interpreted with caution due to their cross-sectional design. It is likely to be one factor having an impact in combination with several others.
- The more accepting a culture is of cars, the less likely they were to be physically active.
- Very little evidence on the role of policy in promoting healthy weights exists due to a lack of systematic studies.
- Very little evidence was available for the effectiveness of interventions in achieving health weights in an urban environment. Naturalistic experiments are needed to measure the impact of change in the built environment on change in behaviours.
Since the inception of the Report Card in 2005, the role of governments and key social institutions in fostering physical activity among children and youth has been examined. Federal, provincial/territorial and municipal governments all have a key role to play, as do industry, research and the philanthropic community.

In general, there has been a notable increase in the awareness of, and attention given to, increasing physical activity at all levels of government, yet it is difficult to easily access information that determines the progress of government initiatives and investments. As well, policies and government initiatives from different levels and sectors often don’t seem to work in a collective or coordinated manner. In general, government engagement seems to show progressive improvement, and there seems to be interest in long-term commitments to the issue of physical inactivity. Clear indicators of progress need to be more effectively gathered, reported and communicated in relation to policy work.

Similar promising movements have been demonstrated by industry, philanthropy, and the research community. Again, there is a need to ensure these are sustained over time and that the progress and learning that occurs as a result of this work is captured and shared.

The Role of the Federal Government in Child and Youth Health:

1. Leadership
2. Social Marketing and Public Awareness to Communicate Healthy Behaviours and Actions
3. Empowering Parents and Providing Incentives
4. Developing National Standards, Indicators and Benchmarks
5. Conducting and Supporting Research
6. Data Collection and Dissemination
7. Take Action and Focus on Outcomes

“While the provinces and territories have the primary responsibility for the delivery of health programs and services, Canadians feel the government of Canada has an opportunity to provide national leadership, encourage national collaboration and ensure national standards are established”.

*Reaching for the Top: A Report by the Advisor on Healthy Children and Youth, Dr. K. Kellie Leitch – Released April 2008.*
Federal Government

Looking back at 2007
The 2007 Report Card identified some key initiatives and election platform issues with respect to the current federal government. These included the 2007 Standing Committee on Health Report which identified some key recommendations for physical activity in children and youth. It identified the $5 million in federal funding to reinstate ParticipACTION, and spoke to the introduction of the federal tax credit for children’s physical activity programs which is now in its first year of implementation. It also referenced the announcement of the Policy on Sport for Persons with a Disability involving $12.5 million in funding to encourage more people with disabilities to participate in sport. As well, it identified the election commitment to spend at least 1% of total federal health funding annually on physical activity, including programs for school-age children.

Update on ParticipACTION
ParticipACTION is now moving into its second year, having launched a social marketing campaign in the fall of 2007 targeted at parents of school-age children. Preliminary evaluation on the campaign has indicated some promising results as 6 in 10 recall the campaign, and three quarters understood the message that children need to “move more”. Twenty to twenty-five percent indicated they looked for further information on physical activity or enrolled their child in physical activity or sport as a result. The campaign will continue to run in public service announcement (PSA) time at the discretion of broadcasters. The federal government continues to support ParticipACTION, which also receives support through industry-funded initiatives.

Investment in sport and physical activity
- Progress on the federal tax credit and disabled sport policy is difficult to determine at this time and it is unclear what evaluation strategies are in place to assess progress in these areas.
- In the fall of 2007 the Public Health Agency of Canada announced 5.4 million dollars in funding over two years for physical activity initiatives, and in December 2007 announced $424,000 toward a School Travel Planning Project.
- There is also investment in discussion and possible revision of the Physical Activity Guide for Children and Youth.
- In February of 2008 the federal budget announced a $24-million ongoing investment in support of sport, and there is some ongoing support to the Joint Consortium on School Health, which is involved in bi-lateral work with provinces and territories.

The abovementioned examples show some promise in relation to the 1% federal health funding commitment, but much more is needed to fulfill this promise. It will also be interesting to see how the investment in sport boosts participation, as a recently released Statistics Canada report indicates declining sport participation, although research on the Canadian Sport Policy indicates that governments report a 34% increase in sport funding between 2002-2005. The priority of the Canadian Sport Policy to increase uptake of the Long Term Athlete Development (LTAD) Model, which begins with active participation as its foundation, may play a key role in fostering strong physical activity levels as the fundamental starting point for sport development.

The Standing Committee Report has been followed up with a nation-wide consultation process and report from Dr. Kellie Leitch, the newly established Advisor on Healthy Children and Youth at the Federal government. An entire section of the report speaks to healthy lifestyles, identifying the need to establish physical activity indicators, many of which correspond to those identified in the Report Card. The recommended actions in the Reaching for the Top report include:

1. National Standards and Goals: Establishing a Pan-Canadian Healthy Living Strategy
2. Centre for Excellence on Child and Youth Obesity
   a. Set standards, indicators and goals
   b. Knowledge translation and research
   c. Collaboration of governments, academics, NGOs and private sector
   d. Identify and foster new best practices for products, programs and services – e.g. after school initiative, community infrastructure access, “Walk Across Canada” Challenge
   e. Social marketing best practices
   f. Information dissemination – e.g. Physical Activity Guide
3. Providing Incentives and Supports to Parents and Volunteers to Help Children and Youth
   a. Children’s Fitness Tax Credit
   b. Children’s Coaching Tax Credit
   c. Collaboration: Supporting NGOs and Private Organizations
Sustained leadership, investment and action is needed
It is commendable to have all of these key elements captured and identified as areas for action by the federal government. It is reassuring to see the resurgence of the Pan-Canadian Healthy Living Strategy as it was an initiative that was carefully developed with associated funding pending, prior to the change in government in 2006. To see that previous work will be built upon in the days ahead, rather than starting over, is encouraging.

A cautionary note in relation to the report is the call for a Centre for Excellence on Obesity, rather than taking an emphasis on healthy weights and healthy living. While the issues of overweight and obesity are important to address, physical activity and a healthy lifestyle are important fundamental aspects of growth and development for children and youth regardless of weight, and the federal government needs to ensure its message will be seen as important to all children and their families, not only seen as relevant to issues of weight.

This report calls for some immediate action in the next year to move on its key recommendations and it will be interesting to see what emerges in the days ahead.

Provincial/Territorial and Municipal Governments
While it is difficult to specifically identify levels of investment and policy initiatives in provincial/territorial and municipal governments, there are interesting pieces of information that demonstrate a wide array of work in relation to increasing physical activity.

Physical activity campaigns and initiatives
A number of different social marketing and programming initiatives are being supported by provincial/territorial governments who may be leading these initiatives or providing funds to provincial NGOs. These include Act Now in British Columbia, Healthy U in Alberta, Saskatchewan in Motion and now Manitoba in Motion, the “Get Wellness Soon” Campaign in New Brunswick, the “Go Healthy” campaign in Newfoundland, Get Active Northwest Territories, the 5/30 Health Challenge in Quebec, Nova Scotia’s Active Kids, Healthy Kids, to name a few of those that were identified in a qualitative interview process conducted for the Report Card. All continue to work toward a goal of increasing their respective provincial/territorial physical activity levels.

A complex problem will need a comprehensive approach – collaborative efforts are key
The physical activity promotion work of provincial/territorial governments varies widely in approach and available dollars, but most of this work involves a comprehensive perspective that at a minimum looks at collaborations between ministries of health, recreation, sport and in most cases education and child services. Some also make connections to ministries of municipal affairs, social services and environment, but these linkages are not nearly as well established. Issues of family, built environment and active transportation are obviously tied to the work of these ministries.

Bringing back physical education
Beginning in September 2008, the government of Manitoba will extend secondary school graduation requirements from 2 to 4 health and physical education credits, mandating health and physical education for Grade 11 and 12 students for the first time in Canada.

Will other provinces follow suit?
Municipal level campaigns and initiatives

At the municipal level, the work in various sectors that promote physical activity, and the work that occurs across these sectors, is difficult to determine. For example, those responsible for recreation funding do not always work with those who manage key services that promote physical activity, such as sidewalk snow removal or community use of schools. Therefore, it is difficult to determine the collective investment in physical activity across these disparate budget lines, which are managed by segmented departments and governing bodies (e.g. school boards, boards of health, recreation departments, municipal services). Considering just one element of the municipal picture, the figure below seems to demonstrate that, over time, municipal recreation budgets have increased.

Figure 32: Local government expenditures on recreation and sport from 1988 to 2004.

Figure 32 provides a simplistic picture as it only tracks budgetary allotments and does not consider the associated annual costs involved in running programs and managing facilities. A key issue that has been raised by each of municipal, provincial and territorial governments involves issues with infrastructure to support physical activity. An Ontario study conducted by Parks and Recreation Ontario provides a small picture of this nation-wide issue. It identified the following key points:

- Municipalities are a significant provider of major facility types that support the sport and recreation sectors throughout the province.
- The inventory of municipally owned facilities is aging with between 30% and 50% of the stock in each facility type at, or approaching, its useful life.
- Smaller municipalities with more aged facilities – especially arenas – face an immediate capital crisis in terms of funding requirements to either retrofit or replace deteriorating stock.
- 25 year-old facilities of all types will likely require capital improvements to upgrade designs and to increase customer appeal irrespective of renovations required to deal with age deterioration.
- In all likelihood, municipalities will require funding assistance to perform the necessary renovations or replacement of existing facilities, given the magnitude of the capital costs involved.

Some provincial and territorial governments have attempted to respond to these infrastructure issues, including Newfoundland, Ontario and Alberta among others, looking at both recreation and school infrastructure. Many are calling on additional federal support, and this is identified as a key priority of the Canadian Sport Policy. Small communities, particularly rural and Aboriginal communities, are most affected and these efforts to support infrastructure will need to be sustained and enhanced over time. There will be a need to enhance work across sectors to address this issue, and the information on municipal recreation spending should be considered with issues such as this in mind.

The importance of work across sectors is also particularly evident with respect to the municipal polices noted within the Built Environment section. This is an area that clearly needs considerable improvement. While governments appear to be making investments to increase physical activity in various ways, municipal policies that inhibit unstructured physical activity are common.
Major Initiatives Related to Childhood Obesity and Physical Inactivity in Canada

The Canadian Journal of Public Health (CJPH) commissioned a paper in 2007 to highlight examples of initiatives underway in Canada to tackle childhood obesity. This is not an exhaustive list but is still included to demonstrate increasing momentum in Canada around the issues of childhood obesity and physical inactivity.

1. The 2006 federal budget proposed a children’s fitness tax credit worth up to $500 per child for enrolment in organized physical activity programs.

2. In February 2007, CFLRI released the first national data on directly measured physical activity in children and youth. The results indicated that 73-91% of Canadian children do not accumulate sufficient steps.

3. In February 2007, Canada resurrected ParticipACTION; a highly recognized physical activity social marketing organization.

4. In March 2007, the Standing Committee on Health of the House of Commons released its report on ‘Healthy Weights for Healthy Kids’. This report included 13 specific recommendations for action.

5. In March 2007, Statistics Canada launched the Canadian Health Measures Survey, the most comprehensive, nationally representative direct health measures survey ever conducted in Canada.

6. In April 2007, Canadian researchers published the first clinical practice guidelines on the management and prevention of obesity in adults and children. Eight of 26 papers were specifically focused on issues relating to children and youth.

7. In April 2007, Canada’s food and beverage industry announced three significant initiatives affecting food advertising and marketing to children <12 years old. This initiative is a partnership between the Food and Consumer Products of Canada, Concerned Children’s Advertisers and Advertising Standards Canada.

8. Canada hosted the International Conference on Physical Activity and Obesity in Children in Toronto on June 24-27, 2007 with nearly 1,000 delegates from around the world.


Addressing Research Gaps

There is a need to conduct research that tracks the level of investment by municipal, provincial/territorial and federal governments in physical activity strategies and initiatives. While this information certainly exists in various ways, it is problematic to access and would serve as a very useful piece of information. In addition, it would be very helpful to have evaluative information on the various strategies and initiatives being implemented across the country.

Policy investments over time, considered in relation to annual costs associated with physical activity promotion, can be evaluated in relation to changes in physical activity behaviours of children and youth. Active Healthy Kids Canada is currently conducting meetings of government, non-government organizations and researchers in each province and territory to determine ways to work collectively to gather and share local and regional information on a national scale.

The promising work being conducted by governments at all levels is recognized here, but there is a clear need to continue these efforts and also to ensure they are effectively coordinated, evaluated, and sustained.
Research Investments – Steady Improvement, But We Still Need to Enhance Learning

As Figure 31 (page 52) indicates, there has been an increased emphasis on health research around obesity and healthy living.

In addition, there have been some focused research initiatives that are noteworthy, such as the partnership between the Heart and Stroke Foundation of Canada and various CIHR Institutes in developing a strategic request for research in relation to built environment, physical activity and health (as noted in the Built Environment section). The Heart and Stroke Foundation of Canada also has a new call for research on obesity and physical activity, and a group of CIHR Institutes have developed a “rapid response” funding stream targeted to support research in relation to natural interventions for chronic disease reduction.

The Canadian Heart Health Strategy has conducted research across Canada, with a report to be released in the spring of 2008. Statistics Canada has indicated the next wave of the Canadian Community Health Survey will be focused on child health issues. Child Health will also be a core element of its Health Measures Survey. There is an increase in the number of provincial/territorial research studies being conducted in relation to physical activity levels and physical activity interventions. Initial exploration for the development of a Physical Literacy assessment instrument has also been financially supported by a number of research, community and NGO partners.
Industry and Philanthropy – Important Partners

The Reaching for the Top Report\textsuperscript{18} stresses the importance of innovation and partnering with industry, and in fact calls for industry/NGO advisory groups to be established to work with each other and with government to support work done in relation to healthy, active living.

This is notable recognition of the importance of industry, which can play a key role in relation to social marketing of healthy active living, financial investment in physical activity initiatives and responsible product development and promotion with respect to physical activity and healthy living. Last year the Report Card noted the industry-led Children’s Food and Beverage Advertising Initiative which took initial steps in relation to reducing the promotion of unhealthy products to children and youth and an increase in healthy active living messaging.

Governments, industry, NGOs, and researchers came together in March 2008 in a Policy Consensus Forum conducted by the Chronic Disease Prevention Alliance of Canada. This event and the Consensus Statement released subsequent to the event\textsuperscript{67} further explored this issue. Additional work will follow from this event and in response to the Reaching for the Top Report.\textsuperscript{16} There is a need to evaluate the progress and impacts of initiatives such as these with regard to physical activity.

Industry initiatives

With respect to work done to date, some industry initiatives have sought to address inequities in relation to physical activity participation for children and youth, such as the funding support program of Canadian Tire’s Jump Start, or funding support provided to enhance programming in YMCA’s and Boys and Girls Clubs, which has been done by various corporations. Others have supported school-based programs, developed their own initiatives or have provided support to NGOs involved in physical activity promotion. Some corporate philanthropic foundations, such as the RBC Foundation, have dedicated funding streams to support community-based physical activity and sport. There is a need to effectively evaluate both the impact of the initiatives that engage industry support, and to examine the effectiveness of multi-sectoral partnerships to promote physical activity, as these partnerships will be critical to fostering measurable change on the issue.

Private and public philanthropy

Private and public philanthropic funders have also played a key role on the issue, often selecting “niche” areas upon which they can focus to address physical activity among children and youth. The Ontario Trillium Foundation has a funding stream dedicated to sport, recreation and physical activity, and the McConnell Foundation in Quebec has taken a focused look at community sport as a means of developing citizenship and fostering social change. Both the McConnell Foundation and the Laidlaw Foundation in Toronto, have a particular interest in youth leadership and empowerment. Some initiatives funded by the Youth Challenge Fund in Toronto have involved physical activity as well.

The Toronto Community Foundation has provided grassroots funding support through its Growing Active Kids funding stream. The Max Bell Foundation in Alberta has provided funding for initiatives in relation to physical activity and chronic disease prevention, and the Lawson Foundation in Ontario has supported this Report Card as well as other area in relation to child and youth health and diabetes prevention. The Chagnon Foundation in Quebec has been a leader as well, in that its funding support to the issue was directly tied to advocacy and political engagement as it was contingent upon a matching contribution and commitment to action on behalf of the Quebec government.

Philanthropic funding is typically aimed at being catalytic in nature, seeding work and fostering partnerships that will further sustain that work in the future. It often involves or engages government in this process and so this sector lends value not simply for its financial investments but, through the nature of its funding process, also facilitating the joining of key players to work together to achieve mutual ends. The philanthropic sector also often seeks to reach out to marginalized and grassroots groups who can get lost in the larger systems that exist, and therefore plays an important role in that regard as well.

The level of investment from industry and the philanthropic sector needs to be more fully explored and evaluated. A focused study in this regard would be beneficial and may serve to identify future possibilities.
When the magnitude of a problem is so complex and far-reaching, it is easy to become overwhelmed and confused on how to improve the situation. Childhood inactivity in Canada certainly falls into this category and while the grades seem stagnant from year to year, we must not lose sight of the ultimate goal and that is to become a country that realizes the importance of sustainability and, in doing so, invests in the health and well-being of its young people.

The 2008 Report Card made a few notable transitions from previous Report Cards. New indicators were incorporated into the Report Card even if data was not available, in an attempt to more consciously highlight where the gaps in knowledge exist. To justify their inclusion, information was drawn from the scientific literature. Once collated, the data available from other countries raised many new questions as the Research Work Group began to examine whether the same was true of Canadian children and youth. This process is also a way to engage more directly with the research community as it acts as a ‘call out’ to those who are designing research studies, applying for funding and putting programs in place.

**Actionable Strategies for All**

- Be active, any way, everyday
- Challenge by-laws which prohibit or discourage physical activity
- Promote the numerous benefits of physical activity and avoid exclusively associating it with body weight
- Focus on the promotion of healthy lifestyle habits that will be sustained
- Use the terminology ‘healthy body weight’ instead of obesity where possible

**Actionable Strategies for Parents**

- Role model physical activity
- Reduce screen time
- Remove TVs and computers from children’s bedrooms
- Avoid screen pursuits in infants less than 2 years of age
- Do not rely on ‘active’ video games to get children active; use them as supplementary pursuits only
- Ensure healthy snacking during screen pursuits
- Strive to create as many opportunities for free play and outdoor play as possible
- Plan family time as active time
- Realize that even preschool aged children need to be active and eat healthily to maintain a healthy weight – healthy lifestyles begin early and may be easier to maintain if established early
- Develop healthy sleep habits early in your child’s life
Actionable Strategies for Practitioners – Educators and Community Leaders

- Create specific events that combine an approach to reduced inactive screen time and increased physical activity and active play
- Consider implementing a time-management segment into the curriculum which includes lessons on reducing screen time and increasing physical activity during the after-school period
- Model healthy physical activity behaviour throughout the school day
- Strive to create as many opportunities for free play as possible
- Make school facilities available for children for unsupervised play during and after school; make community facilities available to support school programming
- Create opportunities to increase girls’ interest in physical activity (non sport or sport related)
- Support initiatives that facilitate active transportation in the school and community

With every Report Card there is an attempt to incorporate an element of commentary on what messages the average Canadian is currently receiving. The 2008 Report Card specifically tackled messaging around the link between physical activity and chronic disease. ParticipACTION’s campaign launched in late 2007 indicates that the message is getting through loud and clear: our children are growing up too fast. The health section outlines very important evidence of how physical activity, independent of body weight, is linked with marked reductions in risk for chronic disease. The evidence is particularly strong given that several research studies are now using objective measures of physical activity.

Another message weaved throughout all of the Report Cards to date is the idea of active, outdoor, free play. The big question on many people’s minds is: what has happened to it? Why don’t we see kids playing in the streets as much as we used to? There is an undercurrent emerging in Canada indicating that there is a desire to re-discover the old days in hopes that we can improve the overall health and well-being of children and youth in this country.

Actionable Strategies for Policy Makers and Industry Leaders

- Ensure physical inactivity in children and youth is a top priority on health policy agendas
- Encourage active play campaigns
- Adhere to, enhance and evaluate policies and commitments to promote physical activity
- Provide sustained funding for evidence-informed policy initiatives
- Work effectively across departments and ministries in strategic, collective efforts to increase physical activity
The community environment has been explored in previous Report Cards, however the 2008 Report Card made an attempt to introduce some ideas around how the built environment affects physical activity. There is great momentum in this area of research as well as in the building and transportation sectors of industry. Research suggests that we can have a real impact on physical activity levels by altering the choices given to people in the environment around them. The key message emerging is that physical activity is more likely to occur if it is easy and part of daily life.

Yes, physical inactivity is troubling and certainly still exists in Canada. However, we must be encouraged by the progress that has been made and celebrate the successes that are happening. We all have a role to play on this issue and the actionable strategies identified for all of us as influencers identify just some of the ways we can successfully work together. We need to start finding common ground and working cohesively with sectors which we have not historically considered working with. Let’s all do our part to ensure our future leaders will one day reflect back and be proud of how we persevered to overcome this challenge for their well-being!

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**Actionable Strategies for Researchers**
- Strive to use objective measures of physical activity and where possible collect this objective data at the regional (sub-provincial level)
- Develop consistent analysis approaches for physical activity data collected via accelerometry
- Develop and evaluate population level strategies to increase levels of physical activity and reduce sedentary behaviours
- Conduct research which addresses identified gaps including:
  - Sleep health as it relates to physical activity and obesity
  - Mental health as it relates to physical activity and obesity, especially in younger children
  - Association between objectively measured physical activity and health outcomes
  - Built environment and physical activity

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**Actionable Strategies for Physicians and Health Promoters**
- Be proactive in talking to parents about healthy lifestyles (e.g. physical activity and sedentary behaviours)
- Refer to the “2006 Canadian clinical practice guidelines on the management and prevention of obesity in adults and children”
- Ensure parents are aware of the recommended guidelines for physical activity and screen time
Appendix
Primary Data Sources

Descriptions of the studies used as the primary sources of information for the 2008 Report Card are described in detail, alphabetically below:

**Canadian Community Health Survey (CCHS)**

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 health care system. The 2008 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)**

- **Physical Activity Monitor (PAM) and Survey of Canadian Schools: 2004-2005**
  
PAM is part of the Physical Activity and Sport Monitoring Program of the CFLRI, and 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).

- **CANPLAY: 2007-2008**
  
  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, 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, CAN PLAY measures the exact number of steps taken daily for children and youth aged 5 to 19 years. This year’s Report Card features data from 2007 and 2008 to allow for provincial-level comparisons.

- **Capacity Study: 2004, 2006**
  
  This study covers the following broad topic areas: availability of facilities at school and in the community for physical activity, training and development opportunities, physical activity training, curricula and instruction, school policies related to physical activity, evaluation of physical activity and school programming and the social climate and environment. In addition to highlighting the extent to which various facilities, programs and opportunities are available in Canadian schools, the current analysis focuses on regional differences and school 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 school-based initiatives to reduce physical inactivity, particularly among Canadian children.

**Health Behaviour in School-aged Children Survey (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 2008 Report Card uses data from the 2005/2006 HBSC Survey. Data on physical activity levels is collected using a self-reporting technique.

**The New Brunswick Student Wellness Survey (NBSW Survey):**

These data, funded by the New Brunswick Department of Wellness, Culture and Sport, were incorporated this year in collaboration with the Centre for Behavioural Research and Program Evaluation at the University of Waterloo and the Health and Education Research Group at the University of New Brunswick and Université de Moncton. The NBSW Survey is a census of all publicly-funded schools (n=203) in New Brunswick with students in Grades 6-12, plus one randomly selected private school with the same grades. The study is sponsored by the New Brunswick Department of Wellness, Culture and Sport and the New Brunswick Department of Education. The data featured this year were collected during the 2006/2007 school year.
Prince Edward Island (PEI) Sport Strategy Study

The PEI Sport Strategy Study\(^{138}\) consists of a survey of students in Grades 7 to 12 in all eligible schools in the province of PEI during the years 2005-2006. Students completed the survey during one class period which was supervised by the classroom teacher. Survey questions were modeled after the 2005 Youth Risk Behaviour Survey and included sport participation, reasons for sport participation and/or non-participation, beliefs about sport, other lifestyle behaviours and factors (i.e. physical activity, tobacco use, self-esteem), demographics, and height and weight.

Spatial Health Assessment of Preschooler’s Environments (SHAPE) Study

The SHAPE 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 data collection is ongoing and the 2008 Report Card includes data from 2,114 children.

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 give 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 2008 Report Card included data from the TTFM cycle from September 2007 to February 2008 (\(n = 44,773\)). These data were used to inform the indicators on physical activity, screen time and organized sport participation.

Web-Survey of Physical Activity and Nutrition (Web-SPAN)

Web-SPAN is a web-based survey of Grades 7-10 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.
The development of each annual Report Card is largely supported by the work of the Research Work Group. This Group 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. As part of the development process, the Research Work Group accesses additional experts/researchers to fill issue-specific gaps as applicable.

2008 Research Work Group Members

Dr. Mark Tremblay  Children’s Hospital of Eastern Ontario Research Institute
Dr. Ian Janssen   Queen’s University
Dr. Doug Willms   University of New Brunswick
Dr. Louise Mâsse   University of British Columbia
Dr. Steve Manske   University of Waterloo
Dr. John Spence    University of Alberta
Dr. Sarah Woodruff  University of Waterloo
Dr. Lise Gauvin    University of Montreal
Sue Cragg          Canadian Fitness and Lifestyle Research Institute

In addition to the contribution of the Research Work Group, the development of each annual Report Card incorporates feedback and consultation with key stakeholders from multiple sectors (government, non-government, foundations and corporations) across Canada.

In 2004, a National Physical Activity Symposium was held to establish the category indicators and collect and analyze data for the 2005 Report Card and subsequent Report Cards.

In 2006, Active Healthy Kids Canada hosted an Improve the Grade: National Action Planning Forum where more than 50 key stakeholders from across Canada gathered to identify specific Recommendations for Action for the 2006 Report Card, cross-referenced with the Coalition for Active Living’s Pan-Canadian Physical Activity Strategy.

In 2006, a feedback form was distributed to more than 1,500 key stakeholders across Canada to provide feedback on the 2006 Recommendations for Action. An overwhelming majority (90-95%) of stakeholder respondents agreed or strongly agreed with the 2006 Recommendations for Action. Stakeholders also indicated that they used the Report Card as an information reference as well as a planning and advocacy tool.

In 2007, an Improve the Grade: Online Teleconference was held with 13 key stakeholders across Canada to further respond to the progress of the 2006 recommendations and to inform future recommendations to be identified in this year’s Report Card.

Further initiatives are planned for 2008, including:

- Provincial consultations with government representatives, non-government organization representatives and researchers are underway with provinces and territories
- A strategic planning retreat is planned for July 2008 to discuss the future development of the Active Healthy Kids Canada Report Card process
- A symposium is planned for late fall 2008 to bring together representatives from across the country to disseminate feedback from the provincial consultations and the strategic planning retreat.
In each indicator area, when deciding on the appropriate grade, the Research Work Group considers the overall framework established in 2005, assesses the data sets provided in terms of key findings and, where possible, examines disparities in ethno-racial, gender and socioeconomic status, as well as trends over time and international comparisons. For some indicators, sufficient national data do not exist for a proper assessment to be made, and therefore those indicators are marked “INC” for incomplete.

A
Canadian children and youth are active enough, reaching optimal growth and development.

B
The majority of Canadian children and youth are active enough, reaching optimal growth and development; however children who are obese or physically or mentally challenged may not have appropriate physical activity opportunities.

C
Insufficient appropriate physical activity opportunities and programs are available to large segments of Canadian children and youth.

D
Insufficient appropriate physical activity opportunities and programs are available to the majority of Canadian children and youth.

F
Canadian children and youth have a sedentary lifestyle.

The ongoing challenge with the Report Card involves the desire to generate interest and attention to the issue of physical activity in children and youth on an annual basis, using a tool that reflects indicators and grade levels that are somewhat difficult to change over the course of a one-year timeframe. For example, the overall grade of D on the Report Card has been consistent from 2005-2007 because the aggregate of shifts that need to take place (e.g. policy implementation and monitoring, program implementation and monitoring) to increase this grade can in fact take several years before definitive and measurable progress can be demonstrated. There are also a number of research and surveillance gaps, which can make it difficult to assess some indicator areas effectively.

The other challenge of the Report Card is that each indicator is informed by multiple sets of data and information sources, which can vary in the ways they are collected and the particular research questions asked to derive the data. The Research Work Group must synthesize and reflect on this critically and then engage in consensus to form a letter grade in relation to the information. As this final step of reaching a letter grade moves from this collection of “hard” evidence to one unifying grade assignment, there are always in-depth discussions of how to provide effective rationale for the letter grade assigned, which is important but can be a difficult exercise. The evidence available in relation to each indicator area also varies, and so what derives a “C” in one indicator cannot necessarily be directly compared to what derives a “C” in another. The discussions that inform grade assignments are lengthy in their debate as it is critical that once pared down to a short form communications piece, these indicators and grade assignments must be able to be clearly communicated to a wide array of audiences.

These challenges are however the inherent value in the Report Card exercise. It is absolutely essential that we be able to effectively reflect the progress we are making on the issue of physical activity for children and youth. The Report Card seeks to provide a comprehensive but simplified way to do so. As such, the letter grades in the Report Card provide a common tool that various stakeholders can access, that is evidence-informed but summative in a way that is easy to communicate. If the existing evidence is not yet reflecting changes, the Report Card serves as an annual reminder that we need to keep working at the issue.

The challenge of Addressing Research Gaps for certain indicators also becomes an informative process regarding where we need to design and implement research processes that will help us to learn more.

The ways in which these challenges are addressed has involved various elements. With respect to the process of assigning letter grades, the Research Work Group examines each indicator in relation to the levels of evidence available regarding:

- Prevalence of the behaviour or issue – where possible this is compared to recommended guidelines that exist
- Examination of trends over time where possible
- Disparities and inequities in relation to the issue/behaviour
- Examination of newly emerging research and initiatives.
<table>
<thead>
<tr>
<th>2005 Overall Grade:</th>
<th>2006 Overall Grade:</th>
<th>2007 Overall Grade:</th>
<th>2008 Overall Grade:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical Activity / Inactivity</strong></td>
<td><strong>Physical Activity / Inactivity</strong></td>
<td><strong>Physical Activity / Inactivity</strong></td>
<td><strong>Physical Activity / Inactivity</strong></td>
</tr>
<tr>
<td>• Physical Activity Levels: D</td>
<td>• Physical Activity Levels: D</td>
<td>• Physical Activity Levels: F</td>
<td>• Physical Activity Levels: F</td>
</tr>
<tr>
<td>• Screen Time: C-</td>
<td>• Screen Time: D-</td>
<td>• Screen Time: F</td>
<td>• Screen Time: F</td>
</tr>
<tr>
<td>• Sport Participation: C+</td>
<td>• Organized Sport Participation: C-</td>
<td>• Sport Participation: C</td>
<td>• Active Play: INC</td>
</tr>
<tr>
<td><strong>Health</strong></td>
<td><strong>Health</strong></td>
<td><strong>Health</strong></td>
<td><strong>Health</strong></td>
</tr>
<tr>
<td>• Overweight / Obesity: F</td>
<td>• Overweight / Obesity: F</td>
<td>• Overweight / Obesity: F</td>
<td>• Healthy Body Weight: F</td>
</tr>
<tr>
<td>• Chronic Disease Risk Factors: INC</td>
<td>• Overall Physical and Psychological Well-Being: C (new)</td>
<td>• Overall Physical Well-Being and Psychosocial Development: C</td>
<td>• Physical Health: INC</td>
</tr>
<tr>
<td><strong>Family</strong></td>
<td><strong>Family</strong></td>
<td><strong>Family</strong></td>
<td><strong>Family</strong></td>
</tr>
<tr>
<td>• Family Physical Activity: D</td>
<td>• Family Physical Activity: D-</td>
<td>• Family Perceptions and Roles Regarding Physical Activity: D</td>
<td>• Parental Perceptions and Roles Regarding Physical Activity: D</td>
</tr>
<tr>
<td>• Ensuring That Kids Are Active: C</td>
<td>• Ensuring That Kids Are Active: D</td>
<td></td>
<td>• Ensuring That Kids Are Active: D</td>
</tr>
<tr>
<td><strong>School</strong></td>
<td><strong>School and Community</strong></td>
<td><strong>School and Community</strong></td>
<td><strong>School</strong></td>
</tr>
<tr>
<td>• Daily Physical Education: F</td>
<td>• Physical Activity at School: INC</td>
<td>• Physical Activity: C</td>
<td>• School-Community Assets and Engagement: C</td>
</tr>
<tr>
<td>• Trained Personnel: D-</td>
<td>• Access and Quality of Recreation Programs: C</td>
<td>• Social Support for Physical Activity at School: C- (new)</td>
<td>• School Sport Opportunities: D-</td>
</tr>
<tr>
<td>• School-Based Physical Activity Opportunities: INC</td>
<td>• Built Environment: INC</td>
<td>• Training of School Personnel: C- (new)</td>
<td>• Effective Evaluation of Programming: INC</td>
</tr>
<tr>
<td><strong>Community Environment</strong></td>
<td><strong>Community and the Built Environment</strong></td>
<td><strong>Policy</strong></td>
<td><strong>Policy</strong></td>
</tr>
<tr>
<td>• Access and Quality of Programs: C</td>
<td>• Access to Facilities and Programs: B+</td>
<td>• Federal Strategies and Investments: C-</td>
<td>• Progress on Government Strategies and Investments: C</td>
</tr>
<tr>
<td>• Community Infrastructure: INC</td>
<td>• Use of Facilities and Programs: D</td>
<td>• Provincial / Territorial / Municipal Strategies and Investments: INC</td>
<td>• Sector Investments in Research, Industry, Foundations: INC (new)</td>
</tr>
<tr>
<td></td>
<td>• Access to Parks and Playgrounds: B+</td>
<td></td>
<td>• Sector Investments in Research, Industry, and Foundations: C+</td>
</tr>
<tr>
<td></td>
<td>• Use of Parks and Playgrounds: D</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


References


References


RUN, JUMP, SKIP, PLAY, THROW... YOU GET THE IDEA.