



# Evaluation Report 2007

# Acknowledgments

I would like to express my sincere thanks to the following people for their help and support in the evaluation of the 2006/07 Active Schools program:

Dr. Carmel Casey

Heather Hillier

Jerry Knee

Shelley Walsh

Members of the Active Living Committee

The health care professionals and Public Health Nurses involved in the evaluation

The Nova Central School Board:

Charlie McCormack

Dr. Linda Rohr and research associates, Memorial University of Newfoundland

The principals, teachers, students and parents from the participating schools. In particular, those involved in interviews and focus groups and the pedometer/BMI measures.

Antony Card, Ed.D.

August, 2007

# Table of Contents

<b>Introduction</b>	<b>6</b>
<b>Background</b>	<b>7</b>
<b>Executive Summary</b>	<b>10</b>
<b>Methodology</b>	<b>12</b>
<b>Research questions to be addressed:</b>	<b>12</b>
<b>Research instruments:</b>	<b>13</b>
1. <b>Teacher/school survey</b>	<b>13</b>
2. <b>Parental focus group sessions</b>	<b>14</b>
3. <b>Project coordinator observations and reflective journals</b>	<b>14</b>
4. <b>Student interviews/focus groups (conducted project coordinators)</b>	<b>15</b>
5. <b>Teacher/administrator interviews</b>	<b>15</b>
6. <b>Classroom observations</b>	<b>16</b>
7. <b>Training day observations</b>	<b>16</b>
8. <b>Interviews with sponsors, partners, members of the Active Living Committee</b>	<b>16</b>
9. <b>BMI (Repeated measures)</b>	<b>16</b>
10. <b>Body Composition Measures (“new” students)</b>	<b>17</b>
11. <b>Pedometers (pre and post test for “new” students)</b>	<b>17</b>
12. <b>Documentary analysis</b>	<b>17</b>
<b>Data Analysis</b>	<b>17</b>

<b>Limitations</b>	<b>17</b>
<b>Ethical considerations, ownership and retention of data</b>	<b>18</b>
<b>Findings</b>	<b>19</b>
<b>Training Days</b>	<b>19</b>
<b>Teacher Resource Manual</b>	<b>22</b>
<b>Resources</b>	<b>23</b>
<b>Activity Time and Intensity</b>	<b>26</b>
<b>Frequency of Activity Sessions</b>	<b>28</b>
<b>Scheduling of QDPA</b>	<b>29</b>
<b>Teacher Confidence</b>	<b>31</b>
<b>Body Composition</b>	<b>32</b>
<b>Data Analysis</b>	<b>32</b>
<b>Results</b>	<b>32</b>
<b>Conclusions about BMI values</b>	<b>35</b>
<b>Physical Activity Levels</b>	<b>35</b>
<b>Data Analysis</b>	<b>35</b>
<b>Results</b>	<b>37</b>
<b>Overall</b>	<b>38</b>
<b>Overall</b>	<b>38</b>
<b>Overall</b>	<b>39</b>
<b>Conclusions about physical activity levels</b>	<b>39</b>
<b>Physical Activity at home</b>	<b>40</b>

<b>Affect on learning</b>	<b>42</b>
<b>Coordinators/Program Support</b>	<b>44</b>
<b>Challenges and Barriers</b>	<b>45</b>
<b>Lack of Time</b>	<b>46</b>
<b>Physical Activity and Physical Education</b>	<b>48</b>
<b>Role of the Physical Education Teacher</b>	<b>50</b>
<b>Lack of Space</b>	<b>50</b>
<b>Safety Concerns</b>	<b>51</b>
<b>Towards a culture of School Health</b>	<b>51</b>
<b>Overall feelings about the Program</b>	<b>54</b>
<b>Students' feelings</b>	<b>54</b>
<b>Parents' feelings</b>	<b>54</b>
<b>Teachers' feelings</b>	<b>56</b>
<b>Teachers' feelings about the role of parents</b>	<b>57</b>
<b>The future</b>	<b>58</b>
<b>Sustainability</b>	<b>58</b>
<b>Conclusion</b>	<b>59</b>
<b>References</b>	<b>63</b>

# Introduction

The problems of physical inactivity and poor nutrition in Canada, and especially in Central Newfoundland, cannot be overstated. The findings of the Canadian Community Health Survey (2004) state that of children aged 2-17 years 26.2% in Canada are overweight or obese. In Newfoundland, 35.6% are thought to be overweight or obese and not getting sufficient physical activity for optimal growth and development. The findings of this study suggest that the problems may be even worse than had been previously identified. There are potentially serious health consequences for an obese child including heart disease, hypertension, stroke, type II diabetes, depression and some forms of cancer.

Concerned individuals including local physicians, dietitians, fitness leaders and health care professionals came together in the fall, 2003 in Gander to form an Active Living Committee. As a result of the committee's work, the Active Schools Project emerged. The program involves classroom teachers in delivering 20 minutes of physical activity per day to students on days other than when physical education is scheduled. The schools are also assisted in identifying and implementing other active living initiatives and opportunities within their school environment. At the start of the program teachers are provided with a training day, a manual and a treasure box of resources such as rubber chickens, juggling scarves, balls and other small items. The project coordinators also provided continuous classroom support. This report provides an overview of the evaluation of the project conducted during the 2006/07 school year.



# Background

A group of stake-holders made up of local physicians, dietitians, fitness leaders and health promotion professionals formed the Active Living Committee in Gander in the fall, 2003. Their mandate is to raise the community's awareness of physical inactivity as a serious health risk and to advocate in this regard. From their initial discussions there was a definite concern for the future of our children's health due to the alarming increase in childhood obesity.

A subcommittee initiated contact with the local school board to discuss these concerns and to advocate for a policy change towards adopting the active schools model in some of its primary/elementary schools for the 2004/05 school year as a pilot project. The initiative saw the introduction of daily physical activity as well as healthy nutrition practices with an education component for teachers and parents. Five school principals expressed a desire to pilot the Active Schools Model in their schools beginning in September, 2004. The five schools had a combined enrollment of approximately 1000 children in grades k-9 and 70 teachers and staff. The schools involved in the pilot year were Greenwood (Campbellton), Lewisporte, Smallwood (Gambo), William Mercer and Gill Memorial (Musgrave Harbour).

A teacher training session was conducted by representatives from the Thames Valley School Board who had been involved in Quality Daily Physical Activity in primary/elementary schools in Ontario since 1998.

A number of community partners expressed their support for the project and made a financial contribution to it. The partners included Health and Community Services-Central, Central East Health Care Institutions Board, Nova Central School District, Departments of

Health and Community Services, Education and Recreation, Culture and Tourism, 9-Wing CFB Gander, Heart & Stroke Foundation, Office of the Primary Health Care Project, Kiwanis Gander, and the following pharmaceutical companies: Astrazeneca, GlaxoSmithKline, Pfizer, Roche, Novonordisk ad Merck Frosst.

The cost of funding the pilot initiative for the five schools was \$36,600 and primarily included the initial start up of providing materials (treasure boxes) and training to the teachers. Once the teachers were trained and the materials in place the cost to operate the program in the long-term was considered to be minimal.

Once the pilot phase was completed in the school year 2004/05, a plan was put in place to implement the project in all primary/elementary schools in the Nova Central School Board in the following years.

The 2004/05 pilot was evaluated using an administrator survey, a teacher survey and a parent survey. It was also decided that BMI's would be assessed by Public Health Nurses over a period of years. The findings demonstrated overwhelming support for the project from principals, teachers and parents with more work needed in the areas of physical activity at home and nutrition in schools.

In 2005/06 fifteen additional schools were added to the project:

Twillingate

Riverwood (Wing's Pt; Gander Bay)

Memorial (Wesleyville)

Holy Cross (Eastport)

Millcrest (GFW)

Bay D'Espoir

John Watkins (Hermitage)

St. Joseph's (Harbour Breton)

Conrad Fitzgerald (English Harbour West)

King Academy (Harbour Breton)

Centreville

Lakeside (Buchans)

Cottrell's Cove

Gander Academy

## Lakewood (Glenwood)

A Teacher Trainer team was established from teachers involved in the 2004-05 pilot year and the team went on to deliver the training days in 2006. In September, 2006 five training days were held to include the remainder of the schools in the Nova Central district bringing the total number of schools involved to 52 with approximately 300 teachers and 4700 students.

In 2006/07 two coordinators were hired to visit schools, run activity sessions and provide onsite training and support to teachers. Their responsibilities included resource development with one working from the Gander School Board office and the other from the Grand Falls-Windsor regional School Board office. The work of the coordinators was overseen by the School Health Promotion Liaison Consultant, also based at the Gander School Board office.



# Executive Summary

*“Great program; very simple easy to implement and the students love it.”*

This report provides an overview of the evaluation of the Active Schools program. The 2006/07 program was evaluated using Body Mass Index (BMI) and pedometer measures, a teacher/school survey, project coordinator journals, a student focus group, teacher/administrator interviews, classroom observations and an analysis of key documents.

There was widespread support for the program from administrators, teachers, students and parents alike. The success of the Active Schools project can be attributed to:

- Universal agreement with the philosophy and general aims of the program and the need for students to be more physically active and pursue a healthy lifestyle
- Interactive, high-energy training day for teachers that provided resources and training in how to use the resources
- Well developed resource manuals and activity bins
- Innovative activity ideas such as Hop-Along balls and activity bags for recess
- Continuous classroom support from the coordinator(s) and the Nova Central School Board
- A Comprehensive Approach to School Health that included providing active living signs for schools and support for healthy school nutrition
- Evaluation and feedback on the success of the project

While there appears to be widespread support for the program, some of the respondents in the teacher survey questioned whether QDPA activities in the classroom are the best way to get children physically active. Given the pressures of curriculum time, space in the classroom and safety concerns, some questioned whether it would be appropriate to give more time to physical education. This seems to be a reasonable comment as the 2007 Newfoundland and Labrador Physical Education Survey showed that at least 60% of K-6 schools are not providing the mandatory 6% (the second lowest in Canada) of total instruction time for physical education. This issue needs to be addressed by the Department of Education, the NLTA and the Nova Central School Board. The leaders of the Active Schools program made it quite clear in their training days that this was not meant to replace physical education, but to make sure that students get QDPA either through physical education or the classroom activities.

The Active Living Committee should define what is meant by 'Quality' in terms of Daily Physical Activity. QDPA now seems to be generally referred to as DPA instead in Ontario. If 'Q' is meant to indicate that the students are getting a vigorous workout then it is doubtful that this is being achieved. While no direct measures of exercise intensity were recorded, the observer noted only two classrooms where the children appeared to be moderately to vigorously active. However, the students do seem to be benefiting from an 'Active' approach to learning; implicit and explicit messages are being given students about not being sedentary for long periods of time.

There is evidence from the pedometer data which suggests that students are generally more active at home which could be attributed to their involvement in the Active Schools Program. However, the students sampled are still not active enough to meet the minimum Canadian guidelines for physical activity.

# Methodology

This section provides an overview of the methods used to evaluate the Active Schools program. The evaluation of the Active Schools program was aligned with the evaluation of similar programs in this province and across Canada. The research questions are presented, followed by an overview of each of the research instruments and a description of how they were implemented. The limitations of the methods, process of data analysis and process of ethical approvals are then discussed.

## **Research questions to be addressed:**

1. Has the program been implemented as intended?
  - 1.1. What are the aims of the program?
  - 1.2. What are the perceived benefits of the program?
  - 1.3. What are the resource and training issues?
  - 1.4. What is the number of training sessions, trained teachers, activity guides and kits and students involved in the program?
  - 1.5. How does the program impact the school curriculum?
  - 1.6. How do the students, teachers and administrators perceive the program?
  - 1.7. Do parents perceive any benefits from the program?
  - 1.8. To what extent do parents support the program?
  - 1.9. What is the role of the coordinators and how do they contribute to the success of the program?
  - 1.10. How might the program be improved?
  - 1.11. How are the teachers trained, and how is the program to be delivered to students?
  - 1.12. Why do teachers/schools participate or not participate?
  - 1.13. What are the challenges in delivering the program?
  - 1.14. What are the next steps in the development of the program?

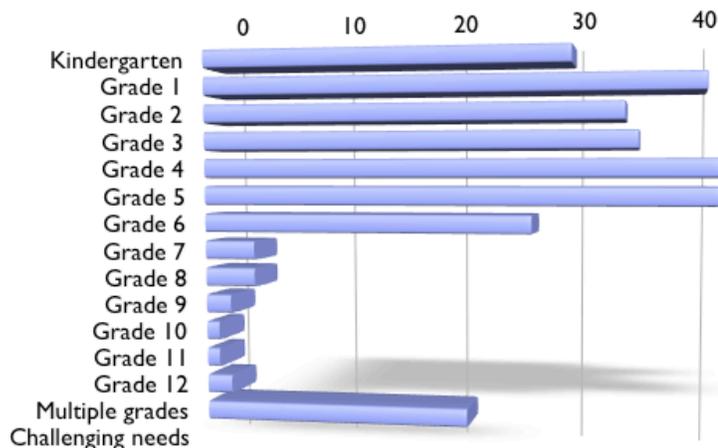
- 1.15. How will the program develop in the future?
- 2. Has Active Schools participation by students had an impact on the overall physical activity rates of students and on body weight?
  - 2.1. How much additional physical activity do students get from being involved in the program?
  - 2.2. Are students generally more active as a result of being involved in the program?
  - 2.3. Does participation in the program at six months and two and half years improve the healthy weights of students?

## Research instruments:

### 1. Teacher/school survey

A survey was distributed to all participating schools in May, 2007. The survey was a follow-up to the administrator/teacher/parent and student interviews and focus groups in ten schools. The questions were designed to test whether the issues raised in the ten schools applied to all 52 schools involved in the project. A prize draw was also held as an incentive to get teachers to return their completed surveys.

In what grade(s) do you teach Q.D.P.A.



The survey was in two parts; the first part asked teachers to identify their grade level taught, when they last attended a training day, the frequency and scheduling of QDPA, obstacles faced in delivering the program and the resources that they used. The second part of the survey consisted of a

table of statements and they were asked to respond according to a Likert scales of disagree, somewhat disagree, neither agree nor disagree, somewhat agree and agree. These statements in part two were previously asked in an evaluation survey in 2004/05. Some of the statements could have been worded differently, but in repeating the statements it is possible to determine patterns and trends. The reverse side of the survey gave space for teachers to provide comments. These comments were transcribed, coded and analyzed according to emerging key themes. The resulting key themes form the sub-headings of this report. 192 teachers completed the survey and the chart shows the grade levels taught by the respondents.

## **2. Parental focus group sessions**

Three focus group sessions were held with the parents to capture the range of demographics (large/small, urban/rural, socioeconomic backgrounds, first/second/third year participating schools). Two of the focus groups were in rural communities and one was in Gander. The focus groups were held in the schools and were attended by female parents some of whom were also school health nurses, caterers or bus drivers. Others were parents who shared a concern about the health, physical activity, well-being and education of their siblings. The focus groups were held in the schools during April 23-27, 2007.

## **3. Project coordinator observations and reflective journals**

The project coordinators were asked to keep journals of their visits to the schools. They were asked to record noteworthy comments from administrators, teachers, students and parents, and their own observations from the visits. The journals were reviewed once during the year and at the end of the year. Unfortunately, given the absence of one of the coordinators, the journals did not capture as much data as might have been desirable.

#### **4. Student interviews/focus groups (conducted project coordinators)**

As the part of the ongoing support in the classroom, the coordinators asked students about their perceptions of the program. The students' responses were discussed with the coordinators.

#### **5. Teacher/administrator interviews**

The evaluator visited schools across the Nova Central region and conducted interviews with the principals and teachers. The schools visited were:

Memorial Academy, Botwood  
Geenwood Academy, Cambellton  
Phoenix Academy, Carmanville  
Glovertown Academy  
Gander Academy  
Millcrest Academy, Grand-Falls Windsor  
Indian River Academy, Springdale  
Ladle Cover Elementary  
New World Island Academy

The interviews with the principals lasted between 45 minutes and one hour. These were tape recorded in part or entirety and then transcribed verbatim. The 32 teachers tended to give quick 10-15 minute chats where key points and salient quotes were recorded. The majority of teacher interviews took place in the classrooms while students were doing QDPA or during recess or lunchtime in the staffrooms. The schools were selected through a combination of purposive and stratified sampling procedures to capture the range of demographics (large/small, urban/rural, socioeconomic backgrounds, first/second/third year participating schools). The principal and teacher interview data was analyzed according to the same key themes identified from the survey data.

## **6. Classroom observations**

During the scheduled visits to the schools, the researcher made ten classroom observations. The observation data was triangulated with the project coordinator observations.

## **7. Training day observations**

The researcher will attend one of the training day sessions. An analysis of the feedback forms was undertaken in consultation with the program coordinators. This included an appraisal of the comments and compiling descriptive statistics for the rating scores.

## **8. Interviews with sponsors, partners, members of the Active Living Committee**

Interviews and background discussions were held with key informants for the Nova Central School Board and the Active Living Committee. Issues discussed included the historical development of the program, governance, administration, sustainability issues and future directions.

## **9. BMI (Repeated measures)**

It was intended that community health nurses would record height and weight measurements as a continuation of a longitudinal study. Unfortunately, previously recorded data had not identified students as either male or female and, therefore, repeated measures were not conducted as longitudinal comparisons would not have been possible.

## **10. Body Composition Measures (“new” students)**

Where possible, Body Mass Index (BMI ) measurements were recorded in the schools which have joined the program in 2006/07 and are taking part in the pedometer study. Details of the protocol are noted with the BMI findings in this report.

## **11. Pedometers (pre and post test for “new” students)**

StepsCount, and the School of Human Kinetics and Recreation, Memorial University of Newfoundland sponsored the use of pedometers. A full description of the pedometer protocol is provided below in the findings section.

## **12. Documentary analysis**

Other diverse sources of evidence were included in the evaluation. This included minutes from meetings held by the Active Living Committee, grant proposals and previous evaluations. These documents were coded and analyzed with the other evaluation data.

## **Data Analysis**

The data were analyzed according to key themes. This report is presented according to each of the themes with discussion drawn from all of the methods under each sub-heading.

## **Limitations**

Caution needs to be exercised in interpreting the findings of each method. The parents partaking in the focus group may have given incomplete or misleading responses due to forgetfulness, embarrassment or misunderstanding. The students involved in the focus group may have included errors due to not understanding the question, a distorted per-

ception, feeling that they have to answer in a particular way to please the interviewer, providing an answer based on their most recent experience or not being able to remember certain events. The evaluator had the impression that he was greeted as a special guest in each of the schools and there was a tendency for him to be shown the best of the QDPA sessions and classes. The teacher survey seemed to portray a less positive picture than the glowing reports from the schools that were visited in April, 2007.

While there are limitations with each evaluation tool (questionnaires, focus groups, pedometers etc.), the strength of the evaluation lies in the combination of these methods. Through a process of within and between methods data triangulation it is possible to be more certain of the overall findings.

### **Ethical considerations, ownership and retention of data**

Ethical approval was granted by the Interdisciplinary Committee for Ethics in Human Research (ICEHR) at Memorial University for the collection of BMI data, the pedometer study and interviews and/or focus groups with parents. This data addressed the question of whether the students are more active at home, and revealed whether or not there has been a change in their BMI. The data will be kept confidentially and securely at the School of Human Kinetics and Recreation at Memorial University of Newfoundland. The findings are included in this report but have been presented at an international conference on childhood obesity and will also be published in a peer-reviewed journal.

All other data, such as the evaluations of the training days were considered part of normal project evaluation for which consent will not be sought from ICEHR. The raw data was collected in an ethical manner by the coordinators, Public Health Nurses and the evaluator and will be retained by the program and destroyed by reformatting computer disks and shredding of paper documents at an appropriate time.

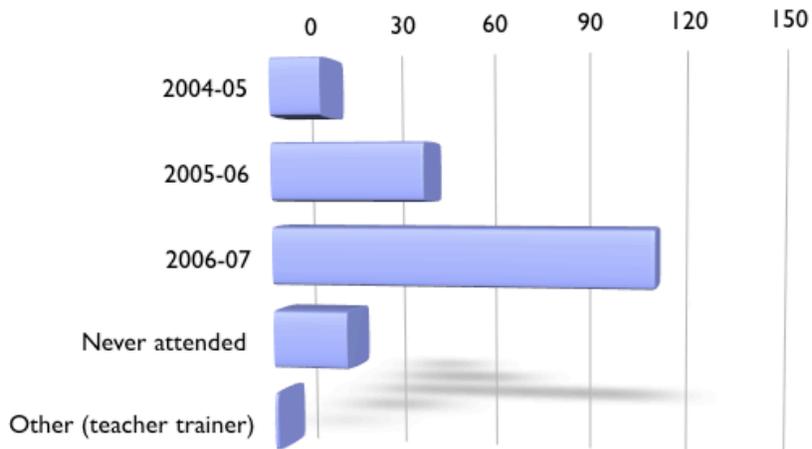
The Nova Central School Board granted approval for all components of the evaluation. The schools gave permission to take part in the evaluation in agreeing to participate in the program. Only the students with written parental consent were permitted to take part in the BMI and pedometer components.

# Findings

## Training Days

*“Great job! Most interesting and formative workshop I have been to in years.”*

### When did you last attend an Active Schools Training Day?



The survey asked teachers to identify when they last attended an Active Schools Training day. The responses were: in 2004-05 - 8%, 2005-06 - 23%, 2006-07 - 57%, Never attended - 11% and other - 0.5%. The 57% for 2006-07 reflects the fact that 31 schools that were added as the program expanded in its third year to include all schools in the district. Five training days were held at various locations across the district in September, 2006 to train the additional teachers.

Table 1. Feedback from the training days.

	GFW 1	GFW 2	Springdale	Baie Verte	Gander
Organization & Presentation	4.3	4.8	4.9	4.9	4.8
Adequate time allotted	4.3	4.3	4.9	5.0	4.7
Venue meeting their needs	4.0	4.6	4.2	4.9	4.7
QDPA is needed	4.7	4.3	4.9	5.0	5.0
Comfort in leading QDPA	3.8	4.2	4.4	4.8	4.5

Mean ratings are shown where 1=poor, 5=excellent.

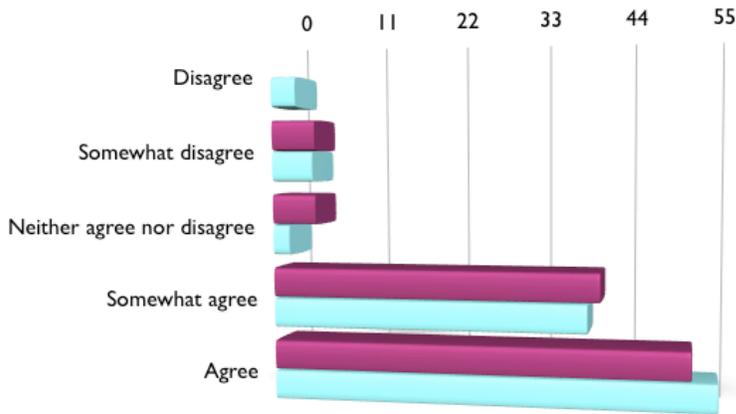
The teachers we asked to provide feedback at the end of the training days that were held at various locations in the district during September, 2006. The above table indicates the mean scores to five key questions. The high scores in this table are supported by a plethora of positive comments from the teachers.

*"I truly thought this in-service was beneficial and needed. It was informative and well organized."*

The teachers gave glowing comments to all aspects of the training days including:

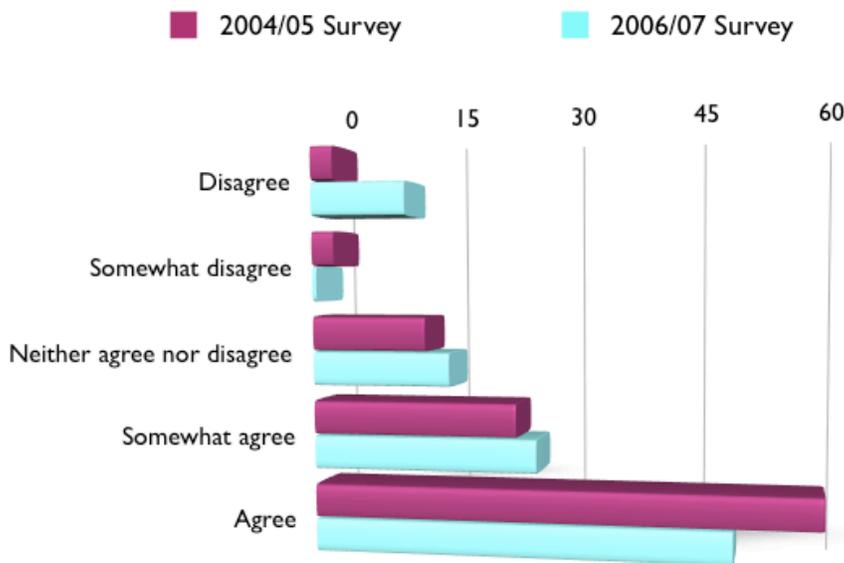
- Dr. Casey's "eye-opening" presentation about the crisis of physical inactivity, poor nutrition, increasing rates of type II diabetes and the long-term health consequences of childhood obesity.
- the hands-on activity oriented approach
- the relaxed atmosphere and the enthusiasm of the trainers
- ideas on how to get started
- the venue and catering arrangements

**I have a good understanding of how to implement the QDPA activities**



The training day evaluation forms also asked the teachers to comment on their dislikes about the day. Most of the responses seemed to be minor in nature and related to the venue being too warm or too crowded or having a video camera record the sessions. Comments such as, “Best workshop I’ve been to” and “great presentation, very informative, schools really need more physical activities like these and kids like it!” seem to capture the teachers’ perceptions of excellent training days.

**My knowledge of the importance of daily physical activity has increased as a result of the Professional Development Day**



Similar responses were given in both the 2004-05 and the 2006-07 teacher surveys to the statement that “my knowledge of the importance of daily physical activity has increased as a result of the professional development day.” The majority of teachers agreed with this statement which may reflect the quality of the presentation and the alarming statistics which are presented by Dr. Carmel Casey at the start of the training days.

The training team may wish to consider minor changes to the format of future training days based on their own experiences, but the general impression is that the training days were appreciated and valued by the teachers.

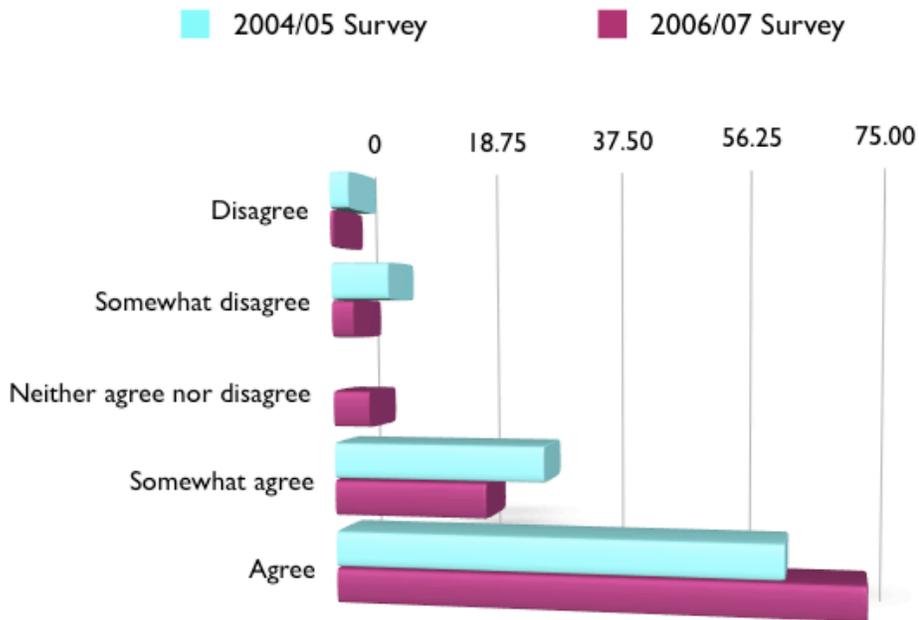
## **Teacher Resource Manual**

The manual was neither liked nor used by the teachers. As one teacher commented, “the resource is not user-friendly” and, there is a need for, “a better curriculum guide (as) the one given is very hard to follow.” Only on one occasion did the evaluator see the teacher manual in use. The teacher took the manual outside and did some throwing/catching and relay activities. In the evaluator’s opinion, the students seemed to be doing a mini-physical education class. Unfortunately for the teacher, it was an extremely windy day resulting in the manual blowing apart and at least half of it disappeared out of the school grounds, into the community and beyond.

The teachers who were interviewed about the program did not express negative comments about the manual as they seemed to be grateful for any resource. However, through the survey responses the teachers suggested a revised manual. The French teachers would also like to see the manual translated into French for them. Other Active Schools projects in Canada have adopted desk calendar or ‘flip’ ideas on a key chain. The project leaders should consider a revised manual or some other booklet or information source.

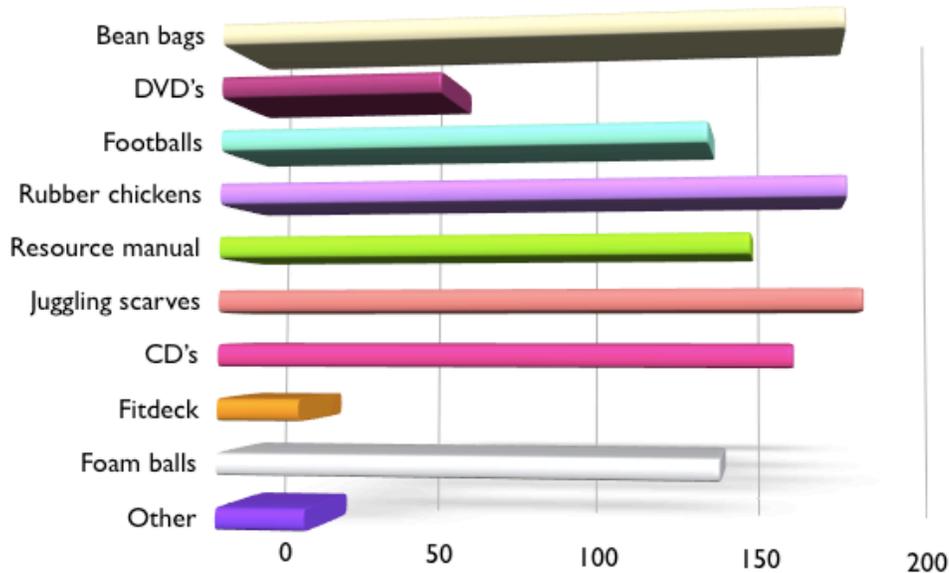
## Resources

### I have access to resources to implement the Active Schools Projects



The teachers stated that they have access to resources to implement the project. Similar pattern can be observed in 2004/05 and the 2006/07 survey data. In 2004/05 the percentages were disagree 2.6%, somewhat agree 7.9%, neither agree nor disagree 0%, somewhat agree 28.9% and agree 60.5%. In 2006/07 the figures were disagree 0.5%, somewhat agree 3%, neither agree nor disagree 5%, somewhat agree 21% and agree 71%.

## Resources used in the Classroom



The above chart shows that the resources provided in the treasure box are appropriate and well used. The most popular items were the juggling scarves (91%), bean bags (89%), rubber chickens (89%) and footballs (70%). Less popular items were the DVD's (32%) and Fitdeck (12%). The teachers explained that DVD players were often held centrally in the school and had to be booked, collected and returned thus explaining why they were not used so much. One of the observed sessions involved two combined classes in the school gym following one of the exercise videos. DVD players and television screens seem to be in all classrooms in newly constructed schools and there is the possibility of the whole school concurrently following the same activity DVD.

As one teacher noted, there is a need to “have some system to replenish worn out items in treasure boxes. Having done QDPA in my own class and the class of a pregnant colleague things like scarves are completely worn out.” The teachers need to be able to offer a variety of activities because, as some commented on the survey, “doing the same activities

becomes monotonous. There was also a plea for more music CD's which is not surprising given that during most of the observed classroom sessions the teachers were using either background music or music as a prompt to move stations during a circuit of exercises, for instance. However, the resources need to be carefully targeted as, for one teacher music was not a solution:

*The program is good however some of the resources, CDs etc... are related to dance. This is awkward at the grade 6 level. Students are self-conscious at this level and tend to refrain from dance type activities. Good resources, but a little time consuming for the untrained PE teacher to provide a wide range of quality activities.*

The coordinators seem to make a concerted effort in researching and testing new activity ideas. For instance, hop-along balls were observed in use with a kindergarten class. Thought was being given as to whether new resources, such a parachute that can be used in classroom, should be kept in a central location in each school or made available to be signed-out through the school board offices.

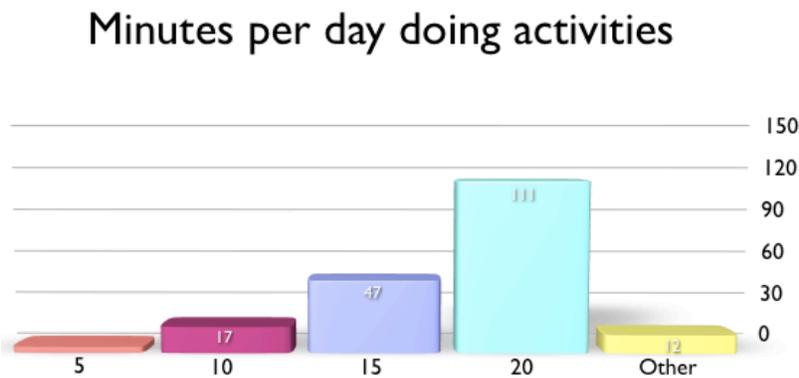
“After using most of the resources/materials – tried to vary activities – students still became bored as the year progressed. Need video workout etc...”

It can be argued that a measure of the success of the program is the extent to which teachers take ownership of the activities in inventing new games, finding their own resources and getting students to lead some of the activities. There was plenty of evidence of this in observed classes where teachers had developed their own circuit stations, introduced yoga and skipping ropes and music with dance actions.

“Bought a CD recently from Scholastic called “Catch a Brainwave Fitness Fun” by Ronno and Liz Jones- Twomey. Easy to follow instructions that integrate left and right – a good resource.”

Perhaps, through a website or discussion forum the Nova Central School board could provide opportunities for teachers to share ideas for activities that have worked well and to share new resources.

### Activity Time and Intensity

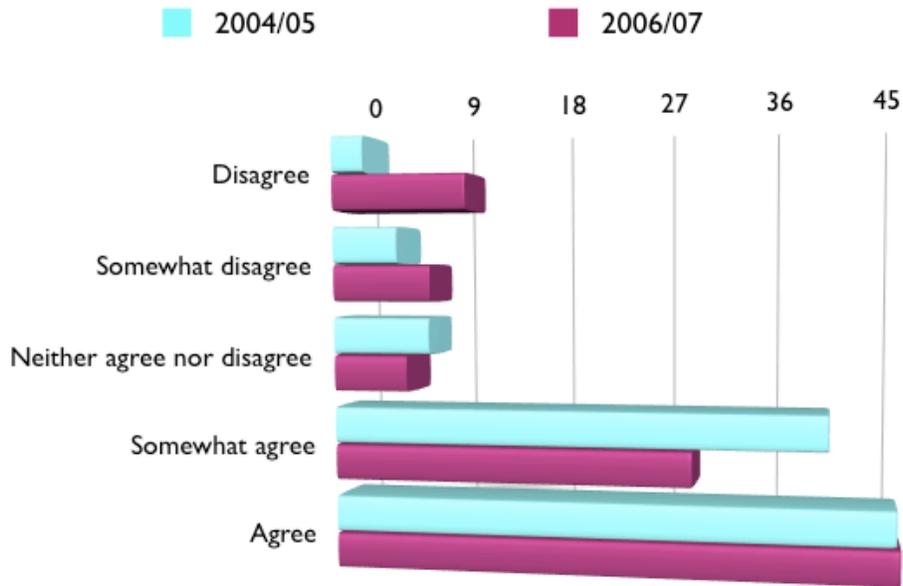


The teachers were asked, "How many minutes per day do you spend doing the QDPA activities?" They responded, 5 minutes - 2%, 10 minutes - 9%, 15 minutes - 25%, 20 minutes - 58% and

other - 6%. The survey data, therefore, suggests that the students are getting 20 minutes of QDPA as intended. One teacher stated in the survey that he/she knew of other teachers in their school who were not doing QDPA. The interview data and observations corroborate the survey data which suggests that the majority of teachers are doing QDPA, although not all. There are also certain times of the year, such as when CRT's and other events are taking place, where all teachers find it difficult to schedule QDPA.

In 2004/05 the responses to the statement that there is at least 20 minutes of physical activity in each school day at my school were: disagree 2.6%, somewhat disagree 5.3%, neither agree nor disagree 7.9%, somewhat agree 39.5%, agree 44.7%. In 2006/07 the responses were: disagree 11%, somewhat disagree 8%, neither agree nor disagree 6%, somewhat agree 29%, agree 45%.

## There is at least 20 minutes of physical activity in each school day at my school



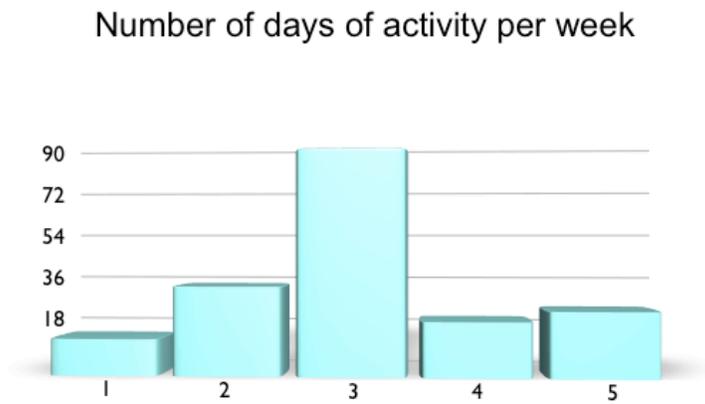
A point raised by some of the teachers was that while the activities can provide a break from academic work, and they are enjoyed by the students, they do not necessarily provide a vigorous workout for students.

*“I feel this should be done in the gym or another large space. Many of the activities are fun but are not giving children the cardio work out. I believe children should be given more gym time by a qualified teacher, rather than putting another requirement on an already overtaxed/overworked classroom teacher. Are we doing ourselves in by providing daily exercise for students without government providing the extra personnel to carry it out at the school level?”*

The evaluator noted that in only two of the ten observed sessions did students appear to be exercising with significantly raised heart and breathing rates. One of the sessions involved a young and particularly energetic teacher who had her students following her in performing aerobic exercises and following a circuit of activities. The classroom was spacious with desks at one end of the room and a similar sized open space at the other. The other class was led by a teacher with a physical education background and she took the students outside to do various activities based on the use of skipping ropes. The intensity of the workout sessions was not recorded and this was noted as a limitation with

using pedometers. The pedometers were only able to measure the number of steps and not the intensity with which those steps were taken. Future evaluations may wish to consider the question of exercise intensity although careful consideration needs to be given to the difficulties and costs associated with using accelerometers or heart-rate monitors.

### Frequency of Activity Sessions



The teachers were asked to state the number of days per week that they offered QDPA. They responded: one day 8%, two days 19%, three days 48%, four days 12% and five days 14%. As they were asked to deliver QDPA every day other than when students had scheduled physical education, three days per week would be a reasonable expectation.

*“there is at least 20 minutes of scheduled physical activity in my classroom each day however there are teachers at my school who do not do QDPA with their students. Parents seem to agree that this is a good thing for their children however only a small number of parents showed up for the QDPA parent information session.”*

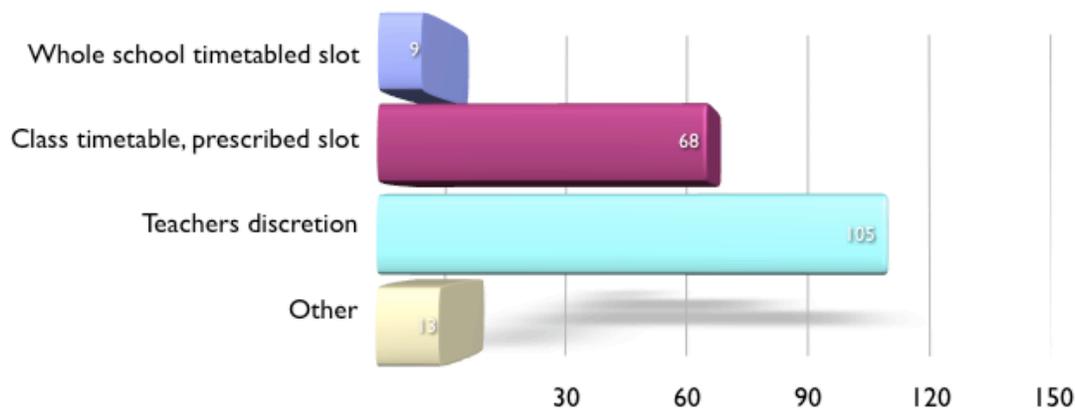
One of the Principals pointed out that at certain times of the year there are increased pressures with CRT's and school events that impact on the QDPA sessions. Delivering QDPA can also be an issue for Challenging Needs and Kindergarten classes.

*“As a kindergarten teacher sometimes it is difficult for me to find the time to implement QDPA in a half-day session. I will often integrate it with other subject areas and cover outcomes through physical movement for Math, Science etc...”*

## Scheduling of QDPA

The teacher survey asked how they scheduled the activities. The teachers responded: whole school timetable slot 5%, class timetable, prescribed slot 35%, teachers discretion 54% and other 7%.

### How do you schedule the activities?



*“With regard to how I schedule QDPA, it depends on the children and their attention level/energy level. Usually towards the end of the school day, children are generally a little more restless so exercising them often proves beneficial for us all. We follow this procedure almost everyday.”*

A pattern emerged from the data which showed that in schools that were new to the program the teachers were given a free choice to schedule activities on days other than when students had physical education and at a time of their choosing. Some preferred to

do the activities first thing in the morning, others just before or after recess or lunch and at varying times in the afternoon. The rationales varied from teachers using the activities to wake students up in the morning to giving them a break from academic learning in the middle of the day and even as a way of calming down hyperactive students.

*“It is hard to fit in QDPA sometimes because there is always so much class work to be done. It is hard to find a good time. Often right in the middle of some class activity and then don’t want to end it to do QDPA. Kids do enjoy it though.”*

In some schools similar grade levels or corridors/wings of a school building do the activities at the same time to reduce noise levels and prevent disturbing other classes. Some teachers felt that the activity sessions should not be scheduled. They liked the flexibility and the way that they could opt for a different time of the day to give the students a mental break where appropriate. Conversely, there also seemed to be a consensus amongst other teachers in favour of some kind of structure. The teachers seemed to like it when the whole school did an activity together, sometimes in the school gym or playground and other times over the public address system. It was also felt that a structure or routine makes it easier to deliver the program, keep the momentum going and emphasize the importance of daily physical activity.

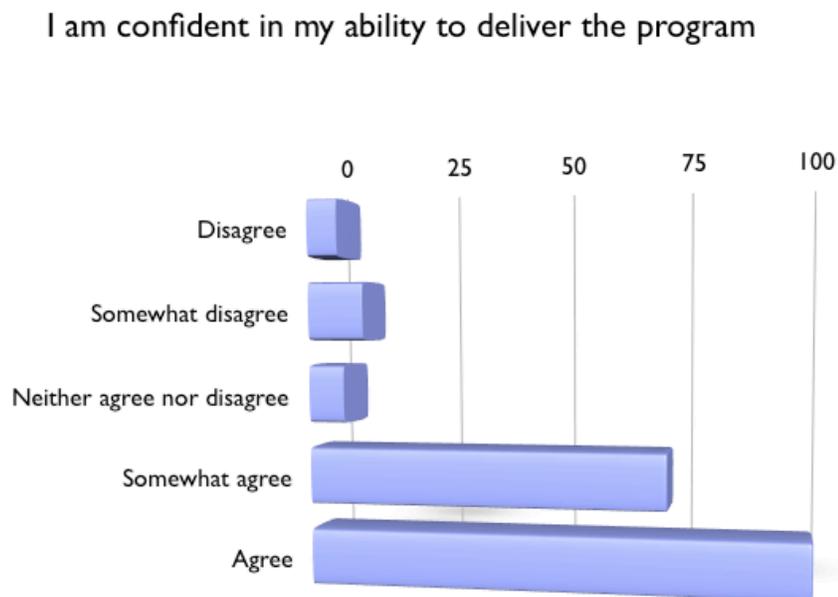
*“In a junior high (K-9) school, train the 7-9 students to be leaders in K-6. In planning a schedule for the school year I would have PE and health on alternate days. That would take care of QDPA on 5 or 6 days of a 7-day cycle, if QDPA were done as part of Health class. A couple of times a month all students and teachers should be taken to the gym for QDPA, a 30-minute session. This was really a fun active living exercise, lead by junior high students.”*

It is interesting to note that the schools that have been doing QDPA for more than two years seem to opt to timetable the activities so that parents are informed about QDPA and nobody is disturbed because the whole school is doing the activities at the same time. Where all students get QDPA at the same time, some may also get physical education on the same day, but this is seen as unavoidable.

“An overloaded curriculum makes it difficult to find time. More resources with activities that can be carried out in the classroom since weather does not always permit going outside and it is very difficult to schedule the gym. Scheduling time during the day is important – leaving it to the discretion of the teacher does not always ensure that it is carried out because teachers feel already overwhelmed with all the curriculum outcomes that must be covered in all the other subject areas. I feel physical exercise is important but difficult to carry out safely in the classroom. It is also difficult to teach in a classroom where QDPA is being carried out next door. Very difficult to implement in classroom. There is a lack of space.”

## Teacher Confidence

The survey asked teachers to rate their feelings about the statement, “I am confident in my ability to deliver the program.” They responded: disagree 3%, somewhat disagree 6%, neither agree nor disagree 4%, somewhat agree 37% and agree 51%.



*“Some other teachers and I practice combined QDPA sessions where we add the friendly competition aspect as well as a sharing of ideas! As a dance instructor myself, I use some dance motions and so on during QDPA. Most teachers at my school are very active physically and offer their own expertise to all during QDPA. (specific sport, stretching motions, dance)”*

It is possible to suggest that much of this confidence stems from the high quality of the training days. As the above quote suggest, QDPA seems to be easier to deliver for teachers with a physical activity, physical education, french or music background where they are likely to be more accustomed to providing ‘active learning’. However, for a minority delivering QDPA can be quite a challenge.

*“I think this program should be delivered by qualified individuals who know about heart rate and the proper way to increase it/sustain it/and do a proper cool down. I feel that I am NOT qualified to be instructing this, nor is it very comfortable standing in front of my class delivering it. I rely on scheduling the gym when it is not in use; I find this works well for me. This is not always a solution for other staff members as they are not free during unscheduled gym time.”*

It is clear that the program leaders should try to identify less confident teachers and support them in the classroom or provide further in-service training days.

## Body Composition

### Data Analysis

Body composition values include height, weight, waist and hip measurements. These data were collected in the 2006-2007 school year by school health nurses in Nova Central. Data was forwarded to Dr. Antony Card at the School of Human Kinetics and Recreation at Memorial University for recording and analysis.

### Results

Body composition is typically reported by calculating body mass index (BMI) from weight and height measurements (BMI = weight in kilograms divided by height in metres squared). BMI values of 25 and 30 are used to classify adults aged 18 and older as overweight or obese. These levels are based primarily on health risk factors, including diabetes, high

blood pressure, and cardiovascular disease (Health Canada, 2000). For children however, there is no clear link between BMI values and health risk. Nevertheless, in order to determine potential risk levels, the International Task Force (IOTF) has extrapolated the adult cut-offs to create sex- and age-specific values for children and youth. Overweight and obese cut-off levels are available in Table 2 for both boys and girls in the surveyed age groups.

Table 2: IOTF recommended Body Mass Index cut-off values for overweight and obese for boys and girls aged 8 through 12 years.

age	overweight		obese	
	boys	girls	boys	girls
9	19.10	19.07	22.77	22.81
10	19.84	19.86	24.00	24.11
11	20.55	20.74	25.10	25.42

Cut-off values adapted from CCHS (2005).

Average BMI values were calculated for grades 4 through 6 for the Nova Central sample. The results are presented in Table 3 below.

Table 3: Average BMI values for boys and girls, Nova Central. Means and standard deviations are presented.

grade	boys	girls
4	18.90 (5.21)	19.55 (4.06)
5	21.59 (3.99)	20.77 (4.74)
6	21.32 (2.78)	21.03 (4.59)

Average BMI values for boys and girls in Nova Central fall very close to or above the cut-off for classifying children as overweight. This is not surprising as previous data have indicated that children in Atlantic Canada are at particular risk for being overweight or obese (Willms, Tremblay & Katzmarzyk, 2003). National data indicate that 36% of children in Newfoundland and Labrador are considered overweight or obese (CCHS, 2004). This value is significantly higher than the Canadian average of 26% (CCHS, 2004). Based on IOTF cut-off values the percentage of boys and girls in the Nova Central sample that are overweight or obese can be found in Table 4.

Table 4: Percentage of boys and girls classified as either overweight or obese, Nova Central sample.

grade	boys	girls
4	38.2	56.7
5	63.3	40.7
6	57.1	45.8

\* These percentages were calculated using the cut-off criteria for each age and grade as presented in Table 1. For example, the grade 4 cut-off values of 19.10 (boys) and 19.07 (girls) were used. This may have led to a slight overestimation of the number of overweight and obese children, and their birthdays are not directly linked to grades.

Although body mass index is the most widely reported measure of body composition, there are limitations regarding its appropriateness in all situations. For instance, as muscle weighs more than body fat, an individual with a high proportion of lean muscle (i.e. those who participate in weight training programs) will often have a high BMI value. BMI values are also potentially problematic with children as prepubescent children often have high body fat values due to maturational differences (Raine, 2004). Although the BMI cut-off values for children have been modified to account for maturation, children who reach puberty early (or very late) will not adequately be represented with BMI values. To alleviate this concern, weight measures are also used as indicators of overall health. Average weight for boys and girls in the Nova Central sample are presented in Table 5.

Table 5: Weight (in kg) for boys and girls. Means and standard deviation.

	boys	girls
4	38.44 (10.43)	37.02 (9.76)
5	46.54 (9.88)	44.5 (12.96)
6	49.51 (7.95)	47.4 (14.54)

For comparison purposes, average weight for a sample of boys and girls from Nova Scotia (average aged 8.0 years for boys and 8.1 years for girls) was 32.4 kg (8.19) and 32.4 kg (8.20) (Campagna et al., 2002)

Average weight for a sample of boys and girls from British Columbia (average aged 10.2 years for both boys and girls) was 36.3 kg (8.4) and 38.0 kg (9.6) (McKay et al., 2004)

### Conclusions about BMI values

Children in the Nova Central sample tended to have higher than average BMI values and body weight measures indicate that the sample has a high tendency to be overweight or obese. Collectively these data support earlier reports indicating that our children are at risk for future health disease and do not have optimal body composition for growth and development.

### Physical Activity Levels

#### Data Analysis

Pedometers were worn by all consenting children from the schools from grade 4 through grade 6. Children were given verbal instructions regarding the use of the pedometers and were assisted in securing the pedometers to the waistbands of their pants on the first day. The instructions to the children included the necessity of wearing the pedometer each day for the next 7 days, from the time they woke in the morning until bed time. Children were

asked to record their daily step counts on the recording sheet provided, which included space to record any issues or problems with the pedometer wearing and/or recording.

Given the novelty of the pedometers, data from the first day of data recording was not included in data analysis. Therefore, weekday values are based on a maximum of 4 days of data, and weekend values, based on a maximum of 2 days of data collection. Values were not included if any of the following were present:

If children failed to wear the pedometer for more than one hour during the day because they forgot to wear the pedometer.

If children indicated they were sick or not feeling well.

If the data for a given day was significantly different than other daily values (For instance, if a daily total was less than 1000 steps it was not included. Also, if the daily total was greater than 50000 steps it was not included.)

Data was included however, if a child indicated that they did not wear the pedometer for more than an hour while they were involved in alternative physical activities. For instance, children who indicated they had swimming lessons, played hockey, or did karate (for example) and did not wear their pedometer, their data was still included.

A variety of situations precluded a complete data set being collected. Examples of situations include, but were not limited to, children failing to include names on the data recording sheet, children failing to return the data recording sheet, and errors in data recording. In some situations pedometer values are available, but not body composition and visa versa.

## Results

A number of contradictory studies have been published debating the association between physical activity levels and childhood weights. Tremblay, a leading Canadian expert on physical activity and obesity clearly purports a strong link between physical activity and a reduction in overweight or obesity (Tremblay and Willms, 2003; Department of Health and Human Services, 1996; Grundy, Blackburn, Higgins, Lauer, Perri, & Ryan, 1999), however others have suggested aerobic exercise and opportunities for physical activity are not associated with a greater likelihood for weight problems (Gable, Chang and Krull, 2007). Regardless, significant research confirms the link between physical activity and health related issues, including positive self image, self-related health, lower levels of diabetes, cardio-vascular disease, sleep apnea, lower cholesterol levels, lower blood pressure and a decrease in joint and mobility problems (Grundy et al., 1999; O'Dea, 2001; WHO, 1998). Given the future negative health consequences for individuals with low physical activity levels it is prudent that children and youth develop healthy habits for physical activity early in life (Lobstein, Baur & Uauy, 2004).

It is recommended that a total of 90 minutes of physical activity be completed daily (Health Canada, 2002). This target should compromise 60 minutes of moderate activity (ex. walking, leisurely bike riding) and 30 minutes of vigorous activity (where conversation during the activity is difficult). One method for measuring physical activity levels is through the use of pedometers. Pedometers, or step counters, tally the number of steps taken by an individual. Pedometers have been demonstrated to be reliable and dependable measures for determining individual physical activity levels. The recommended daily stepping target values are 12 000 steps for girls and 15 000 for boys (Tudor-Locke, Pangrazi, Corbin, Rutherford, Vincent, Raustorp, Tomson & Cuddihy, 2004). Average daily step values, across weekdays and weekends, for both boys and girls in Nova Central are indicated below in Table 6.

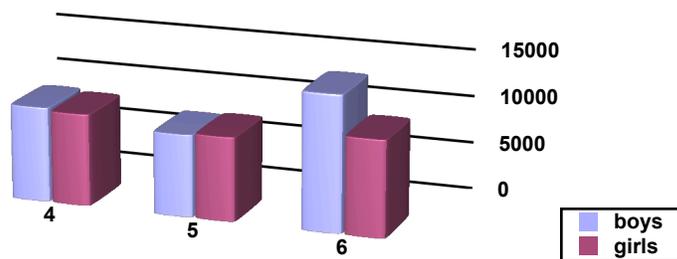
Table 6: Stepping data via pedometers, for boys and girls in Nova Central. Average values for weekdays and weekends are presented. Means and standard deviations.

	boys	girls
weekday	9929 (4866)	9312 (4239)
weekend	10259 (5720)	8530 (4326)

### Overall

The data suggest that both boys and girls are falling short of the recommended daily step values, both during weekdays and on weekends. Although pedometers do not reflect intensity of physical activity (i.e. moderate or vigorous activity) the level or quantity of physical activity as measured by the pedometers suggests children in the Nova Central sample are not physically active enough for optimal health and growth and development.

Is there a difference across the grades with regards to physical activity levels for boys and girls on weekdays?



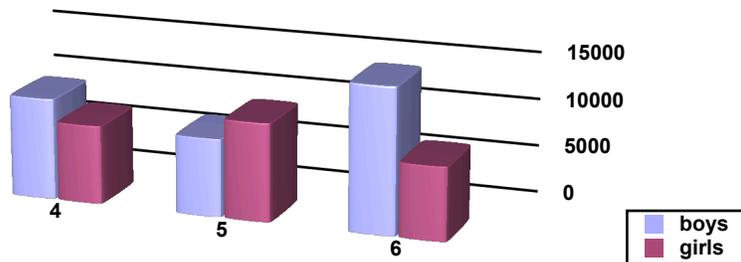
Average weekday step count values for boys and girls from grades 4 – 6

### Overall

Across all grades examined, males tend to have higher step counts across the weekdays. The grade six boys are approaching the target value for daily steps (15000), but in general,

all grades and both males and females do not reach the recommended daily physical activity target levels.

Is there a difference across the grades with regards to physical activity levels for boys and girls on weekends?



Average weekend step count values for boys and girls from grades 4 – 6.

### Overall

Boys in grades 4 and 6 tend to have higher step count values on the weekends than the girls. Again, the grade six boys are approaching the target value (15000 steps) on the weekends, but all grades and both males and females fail to achieve sufficient levels of physical activity on weekends.

### Conclusions about physical activity levels

Both on weekdays and weekend boys display evidence of higher physical activity levels than girls. Recall that the target values are 15000 steps for boys, and 12000 steps for girls. Although both boys and girls are failing to reach the target values, boys generally have higher daily step values than girls. This is evident both for weekdays and weekends, except for the grade 5 boys on the weekends.

Is there a relationship between daily physical activity (steps taken) and body mass index?

A linear regression was completed between daily physical activity (as measured by average steps across the six day measurement period) and BMI. Calculations were completed for boys and girls separately. Results indicated that girls with higher levels of daily physical activity had lower BMI values ( $r = -0.245$ ,  $p < 0.05$ ,  $n = 56$ ), while for boys ( $r = -0.01$ , ns,  $n = 46$ ) this relationship was not found. This trend is not consistently reported in the research, however given the future health concerns and negative consequences of an inactive lifestyle it is important for both boys and girls to include opportunities for daily physical activity to help decrease the prevalence of overweight and obesity.

### **Physical Activity at home**

The pre-intervention pedometer data showed that the students are not meeting the minimum Canadian standards for physical activity. The students are less active on the weekends and it is particularly the case for girls in rural communities. The evaluator held three focus groups, one in Gander and two in rural communities to determine why children are so inactive and to address the three combined variables of girls, rural communities and weekends. The parents were also asked for their overall impression of the project and if their children had been doing some of the QDPA activities at home.

An interesting pattern emerged from the data which showed that of the five parents interviewed in Gander none of them allowed their children to have a television or computer in their bedrooms. Conversely, all fifteen of the mothers in the rural communities allowed their children to have televisions, DVD players, computers and computer games in their bedrooms. One parent indicated that they used the television to help her daughter get to sleep at night. Typically, the parents stated that their children showed a preference for online chat (MSN etc.) and video games. A couple of the parents with sons said that the boys preferred to be outside but that much of their activity involved ATV's and snowmobiles.

The mothers in the rural communities also spoke of the difficulties associated with rural isolation and not having other children nearby. Some had put their children into organized sport and had driven their children to various activities up to an hour away. However, the children had lost interest once the activities became competitive.

Approximately one third of the mothers in the rural communities had husbands who were working away in Alberta and often had to leave their children with a babysitter. It was felt that the babysitters most likely entertained the children with television and DVD's on a frequent basis.

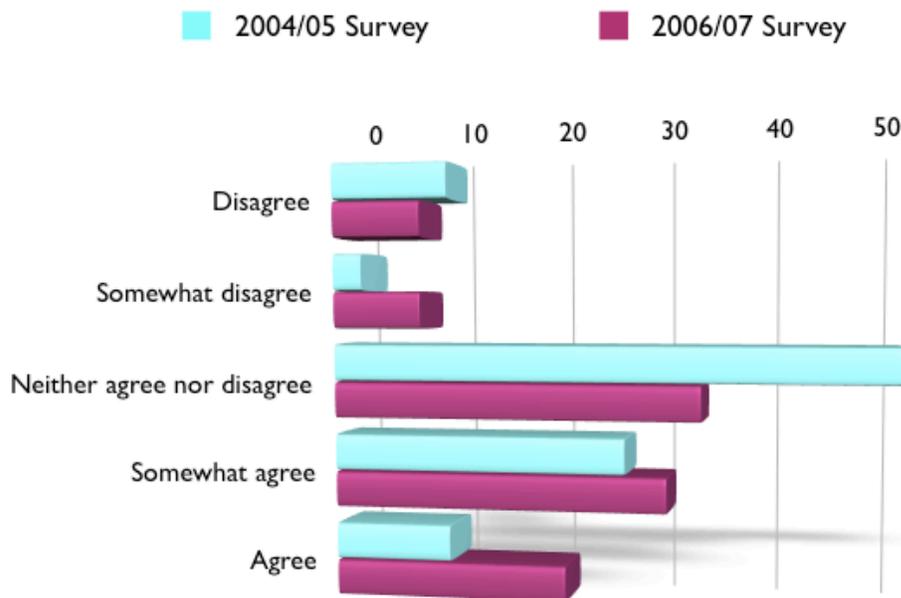
The parents agreed that their children love the program and some of them had been talking about it at home. Some of the girls had managed to get their parents involved in doing some of the QDPA dances such as Agadoo. All of the parents were highly supportive of the QDPA activities and promoting healthy nutrition in schools.



## Affect on learning

*“As teachers we are required to cover many outcomes. I have much difficulty getting everything covered and then to add 20 mins of QDPA is stretching it. Young children are hyper after activity not calm.”*

Students are more attentive in class after doing QDPA



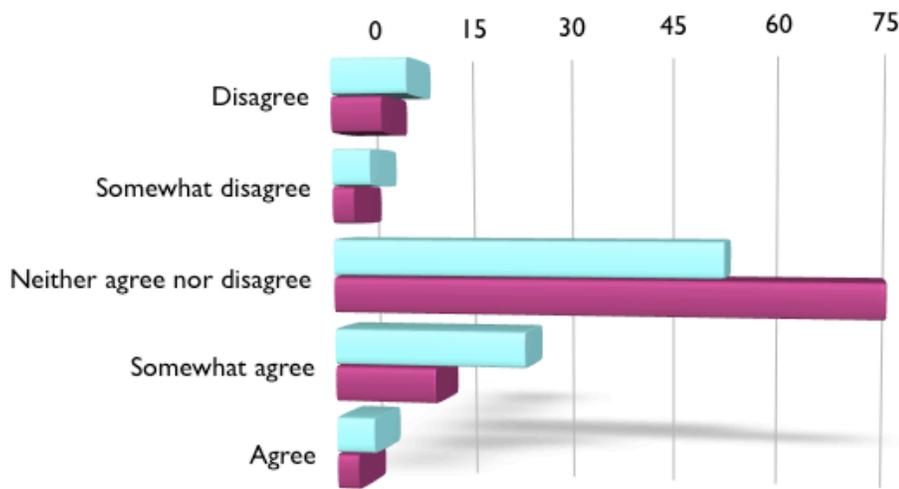
The 2004/05 teacher survey asked if students were more attentive in class after doing QDPA. The responses were: disagree 10.5%, somewhat disagree 2.6%, neither agree nor disagree 50%, somewhat agree 26.3%, agree 10.5%. The 2006/07 responses were: disagree 8%, somewhat disagree 8%, neither agree nor disagree 33%, somewhat agree 30%, agree 21%.

The teacher interview data suggests that those teachers who disagreed with statement probably found the students to be hyperactive following the activities. The importance of

'cooling down' to settle the class after activities was emphasized during the training days but perhaps this needs reiterating or additional guidance provided to teachers. It is also possible to speculate that the higher percentage for 'neither agree nor disagree' reflects the teachers' inability to make a judgement given the subjective nature of the question. Further it is possible that on some occasions the students were more attentive while on others they were less attentive.

Similar responses were also given to the statement that since the start of the project there has been an increase in the academic performance of students involved.

Since the start of this project there has been an increase in the academic performance of students involved



The teacher surveys asked for responses to the statement that “since the start of the project there has been an increase in the academic performance of students.” The 2004/05 responses were: disagree 10.5%, somewhat disagree 5.3%, neither agree nor disagree 52.6%, somewhat agree 26.3% and agree 5.3%. The 2006/07 responses were: disagree 7%, somewhat disagree 3%, neither agree nor disagree 73%, somewhat agree 14% and agree 3%.

Again, some of the teachers commented on the subjective nature of this question. Pre- and post- tests of cognitive ability or the use of standardized test scores are needed to make such an assessment. In the evaluator's opinion, findings about the impact of QDPA on learning should be viewed with extreme caution. Conclusion about the impact on learning can only be derived from rigorous research with strict controls. However, it was an interesting question raised by the previous survey and one which may be worthy of further investigation.

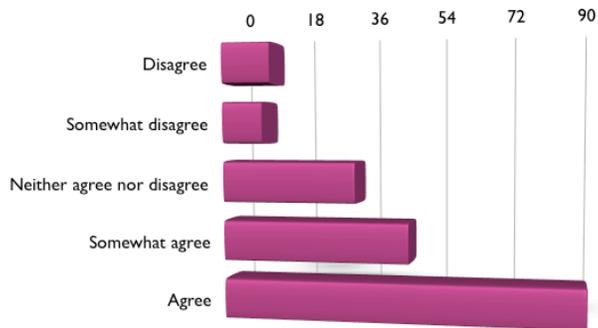
### Coordinators/Program Support

*"I would suggest a little more of a push at the board level to convince some administrators that this program will over time benefit students academically even if they do not spend as much time on other subject areas. Research suggests that even with time taken away students will perform as well if not better. A couple of special events throughout the year will help keep the program rolling."*

The evaluator noted that the program coordinators were well received in the schools that they visited together. The help and support of the coordinators was appreciated by the school principals and teachers alike. The coordinators were observed leading activity sessions and sharing new ideas with teachers. In one school that had not been visited by a coordinator, the principal stated that the program was going well and he knew that a coordinator was just a phone call away if he or his staff needed support. In another school, the principal recalled how the coordinator had helped support other events in the school such as the Healthy Commotions Day.



The support of the Active Schools Coordinator(s) has contributed to the delivery of QDPA



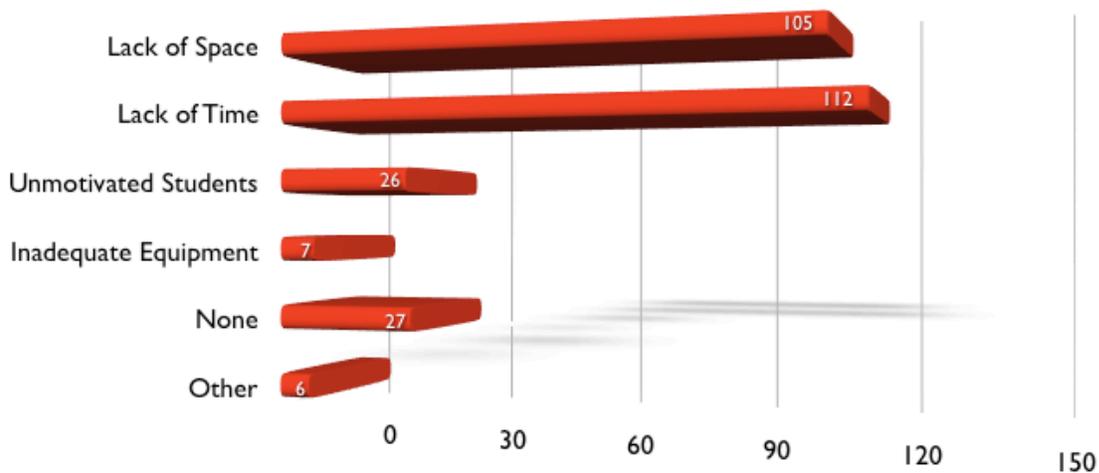
One of the principals suggested that an appropriate ratio of coordinators to schools should be 1:15. Given the geographical distance between schools in the district, it is clearly a problem for coordinators to reach all schools and provide adequate support. The fact that the coordinator(s) did not manage to visit all of the schools in the district during 2006-07 is most likely

reflected in the 6% of the teacher survey respondents who answered 'disagree' to the statement that the Active Schools Coordinator(s) has contributed to the delivery of QDPA. The other responses were: somewhat disagree 5%, neither agree nor disagree 17%, somewhat agree 24% and agree 47%. Unfortunately, as the survey was anonymous, it is impossible to identify schools and teachers who would benefit from either a classroom visit or an additional in-service training day.

## Challenges and Barriers

*“Scheduling in QDPA in my class for 20 minutes everyday takes a fair amount of planning in my already overloaded schedule. I do not have CDs that were used at the in-service and they were not provided to teachers. The activities in the manual are mostly for very young children and my students are not interested in them and think they are childish. I am not willing to spend time looking for activities or trying to come up with ways to keep variety. I have had several students get carried away and get hurt in the classroom, which also makes it difficult.”*

## Challenges in delivering the program



The teachers were asked to note the challenges and barriers that exist to delivering the program. It was encouraging to see that unmotivated students (14%) and inadequate equipment (4%) was not a great concern and 14% of teachers said that there were no barriers to delivering the program. However, lack of space in the classroom (55%) and lack of time (58%) were of greatest concern.

The issues of a lack of space and time will now be discussed in more detail.

### Lack of Time

*"I find the pressure of trying to complete all the outcomes required for my grade level very difficult. Now I'm being asked to take 20 minutes out of my curriculum time to do QDPA. My other problem is that I teach the core subjects only. I think it is an excellent program, great ideas but finding time is difficult."*

*“I feel sometimes it is difficult to take 20 minutes each day for QDPA. Teaching in a multi-grade class, scheduling QDPA everyday can be a bit of a challenge. However, I feel that this is a worthwhile endeavour and it can only be positive for the students.”*

A concern voiced by all of the teachers who were interviewed was the overcrowded curriculum and the lack of time in the school year to cover all of the curriculum outcomes. The lack of time is even more of a problem when time is needed for musicals, sporting events and so forth. As one teacher pointed out, “there isn’t enough time to do this and deliver the rest of the prescribed curriculum. QDPA takes 70 mins a week x 40 weeks = 2800 minutes per year = 46 hours. Meeting the rest of the outcomes has become more difficult.” Therefore, asking the teachers to do anything else is problematic. The evidence suggests that the teachers believed in the philosophy of the program, accepted it as being important and were therefore prepared to invest valuable curriculum time delivering the sessions.

It is possible to claim that the program does not necessarily take time away from the curriculum as the activities are supposed to be

“I feel that the students need their 20 minutes of physical activity a day and QDPA is a great initiative. One of the greatest challenges is fitting it into a full curriculum. Of course ideally it should be incorporated into cross-curricular lessons however this can be difficult at times. QDPA should be scheduled into teachers schedule to ensure it is practiced everyday.”

related to curriculum outcomes. Some teachers, particularly those teaching french or music, found it easy to match the movements to learning outcomes throughout the program as this was not a departure from their regular teaching style. However, the teachers stated how on occasions the activities provided a mental break and it was desirable to not relate them to outcomes.

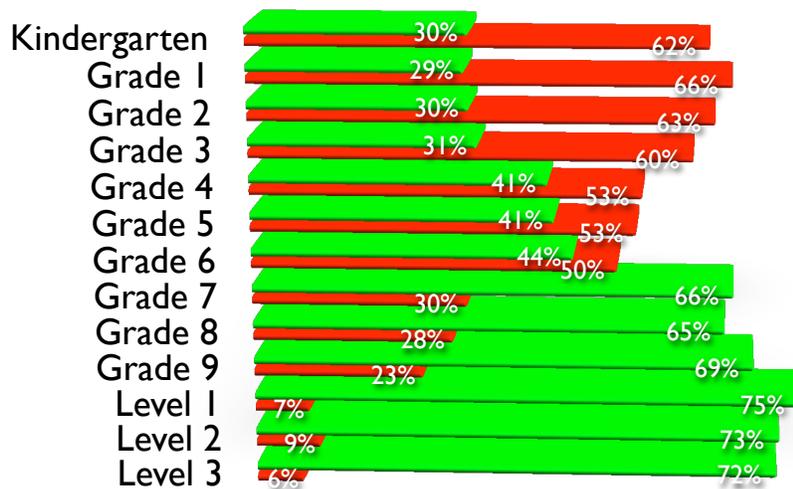
*“While I fully agree with the need for increased physical activity among students, time is definitely a negative factor. Our curriculum is so crowded that every minute taken for something else impacts on the delivery of what needs to be covered. Also a lack of suitable space outside is also a factor. We need ... to trim our curricula expectations to leave room for more physical activity.”*

A requirement to have all activities related to learning outcomes would likely be troublesome for some teachers unless movement is considered an outcome in itself. As

the above quote indicates, the lack of time should be considered a criticism of the curriculum, not of the Active Schools project.

### Physical Activity and Physical Education

Does your physical education instruction time meet the mandated minimum?



The opposite figure is taken from the 2007 Provincial Physical Education Survey. It shows that the 6% of instruction time for physical education (the second lowest in the country) is not being met. The lack of instruction

time with a qualified physical education teacher is particularly problematic in grades K-6. No assessment was made of the participating schools to understand if the minimum time for physical education was being met. However, given this provincial trend it may be a valid comment from the teachers to question the amount of physical education along with other opportunities for physical activity in schools. Given that there is a tendency to replace physical education with Active Schools programs in some Canadian provinces, it seems appropriate that the Active Schools leaders should also emphasize the importance of Physical Education, Health Education, recess, intramural and interschool sports and other opportunities for young people to be active.

The evaluator visited a small rural school that had 16 students K-6 and two teachers. The two teachers are able to provide half an hour of physical education at the end of every

school day. The teachers asked whether they should be taking the students out of the gym and into the classroom to do QDPA. The coordinator suggested that they should continue with their physical education program. It is interesting to note that the QDPA training and resources in this situation had helped to enhance the physical education program.

“I agree with the overall philosophy of QDPA. However, as a classroom teacher with curriculum to cover I have to sacrifice something to give up 20 minutes everyday. Students should be given more PE classes so that it is delivered in the proper setting. A classroom is not the ideal place to be carrying out QDPA.”

The physical education teachers in the participating schools were found to be supportive of the program and seen to take the lead with whole-school activities. The other teachers saw an increased role for the physical education teacher. Some of the teacher trainers are physical

educators and they are particularly supportive of the program.

*“I feel that within my school some teachers may not be doing it as consistently as they say. To many, it is a treat that students receive if they behave well. Over and over again, I have voiced a concern over this attitude. If these teachers have this attitude it can and is easily reflected on the students, I think it is about time that PE and activity programs get the same importance as any core subject.”*

The program leaders were very clear in the training days that QDPA is not meant to replace physical education, but is an addition to the physical education program. A comprehensive School Health model should be developed and consideration given to the relationship between Active Schools, Physical Education and Physical Activity and Health Education.

## Role of the Physical Education Teacher

*“I would like to have a session once a week in the gym where the phys. ed teacher does a brief session with all K-6 students. He is trained in this area and therefore more qualified to teach QDPA than I am. Also, the gym has more space.”*

The physical education teachers who were interviewed for this evaluation were highly supportive of QDPA and all other opportunities for students to be physically active. Some of the physical education teachers also noted how they had supported classroom teachers in providing ideas and additional equipment for the QDPA sessions.

*“My importance of the program has always been high due to the fact that I am a PE major and teach all the PE in the school. I have however tried to find articles that link physical activity to academic success to convince staff/administration that it is a very important part of overall development physically and mentally. So, I have benefited from this initiative, I really feel that this program be pushed even more.”*

## Lack of Space

Classrooms are spaces that are not designed with physical activity in mind. It is hardly surprising that the teachers' second most important concern was lack of space and ensuing health and safety concerns. There is a danger of students crashing into desks, chairs and other furniture. Some of the items in the bin such as the rubber chickens and soft balls, while soft in nature, have the potential to knock over other objects when poorly thrown or caught in a classroom. Intense exercise can raise humidity levels in the classroom, particularly those with poor ventilation, increase the risk of someone slipping and result in poor air quality. The students may want to consume water in the classroom during or following exercise which, if spilled, can create slipping hazards. Some of the observed classrooms, and particularly those in newly constructed schools, seemed too small for most activities and especially physical activity.

The teachers explained how they would use other spaces such as the gym when available, the canteen, corridors or take the students outside if the weather permitted. There were no reported injuries and this could reflect the teachers' awareness of safety concerns and their ability to manage the activities and match the intensity of the sessions to the environment.

Distractions can also become a problem for some teachers where, for instance, a teacher is trying to do a Math test in a classroom while the students are doing a chicken relay in the next classroom. In one school a teacher was at the end of the building and closest to the school playground. The teacher had a problem with the number of classes that were using the playground for QDPA and disturbing her class. In the scheduling section of this report suggestions have been made for alternative scheduling arrangements.

## Safety Concerns

*“For gym we have to have space that has no obstacles that would result in injury yet for QDPA we have to deliver a program in a crowded classroom with many obstacles (desks, displays, tables etc). I feel it’s an accident waiting to happen. This is NOT the correct place to deliver physical activity. Should be delivered in a safe environment such as the gym.”*

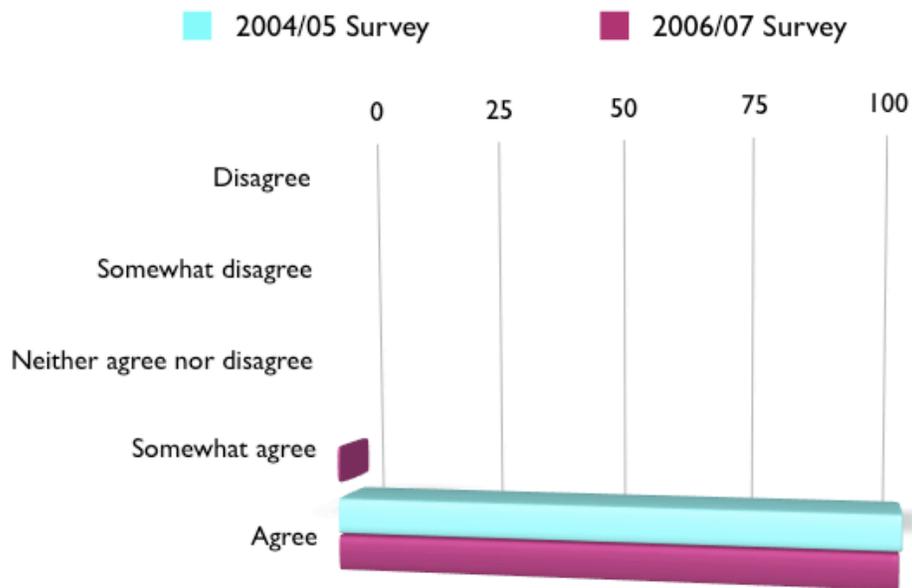
The above quote highlights the need to emphasize safety during training days. The teachers may need more guidance as to which activities are likely to be safe in a crowded classroom and those that are better done in a gym or outside space.

## Towards a culture of School Health

The principals were asked during the interviews if they felt that the culture of their school was changing towards active healthy living. They are replied with an unequivocal “yes”. They also stated how a groundswell for change was coming from the parents. In one K-12 school the principal explained how the parents had asked for money to be spent on

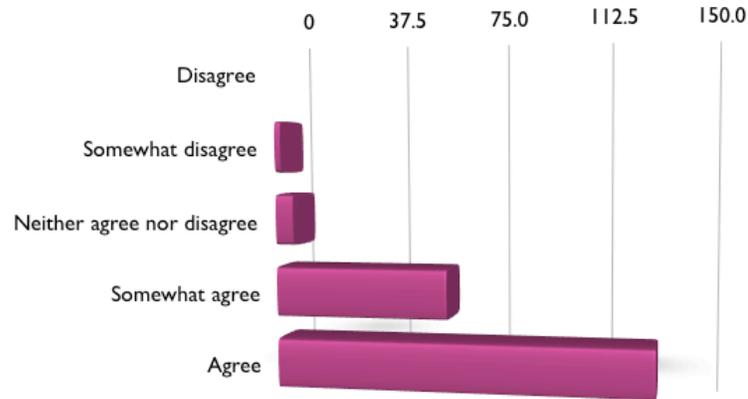
playground equipment rather than on the upgrading of computers. The principals and parents also commented on changes to school nutrition with the principals bringing in occasional fruit trays and the implementation of the new school food guidelines. The chart (below) shows that teachers saw the importance of daily physical activity for the health of children in 2004-05 and they continue to do so in 2006-07.

## Daily physical activity is important in the health of children



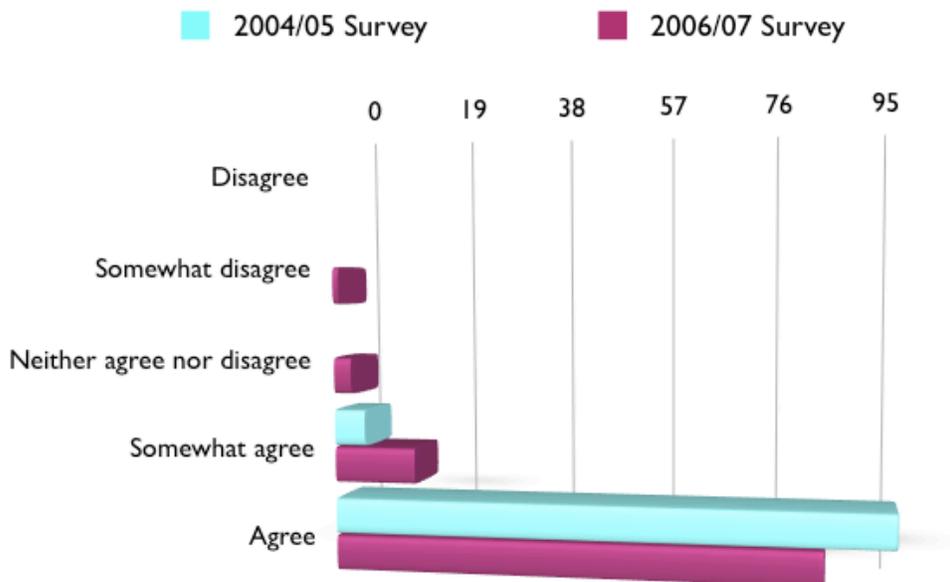
The 2006/07 teacher survey confirmed that there is an overall emphasis on health and wellness in schools. The responses were: disagree 0%, somewhat disagree 1%, neither agree nor disagree 3%, somewhat agree 30%, agree 66%.

### There is an emphasis on overall health and wellness in the school



The teachers also acknowledged in both the 2004-05 and the 2006-07 surveys that the school administrators are generally supportive of the Active Schools program. Their responses were: disagree 0%, somewhat disagree 0%, neither agree nor disagree 0%, somewhat agree 5.3%, agree 94.7%. 2006/07 disagree 0%, somewhat disagree 1%, neither agree nor disagree 3%, somewhat agree 14%, agree 83%.

### I feel that my school administrator supports the Active Schools Project



“How can any administrator not go with this program? All evidence proves, not suggests, activity enhances learning. It is a WIN –WIN situation.”

## Overall feelings about the Program

### Students' feelings

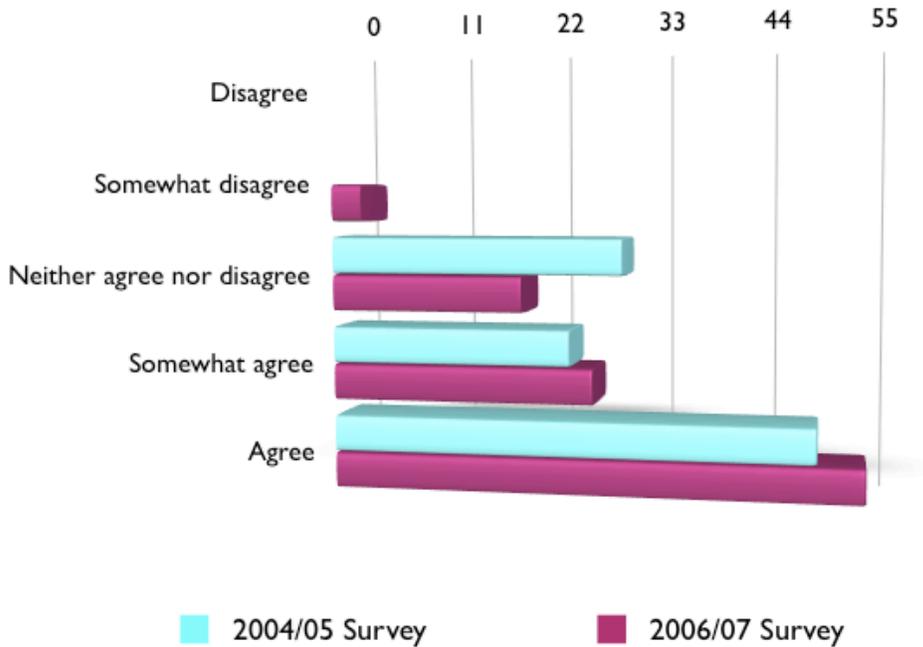
The students who took part in the focus group session stated that they love the program. They enjoy the activities in the classroom and they would like to see it continued. Their favourite activities were ones that were covered during the teacher training days. All of the teachers who took part in individual interviews also confirmed that the students love the program and enjoy the activities.

### Parents' feelings

The parents who took part in the focus group sessions were highly supportive of the program. The principals also noted widespread parental support. As one principal stated, “what parent would not want their child to be active and eat healthily?” In fact, the only complaints that the principals had received were when teachers had not offered the timetabled QDPA sessions.



### I feel the parents support this project

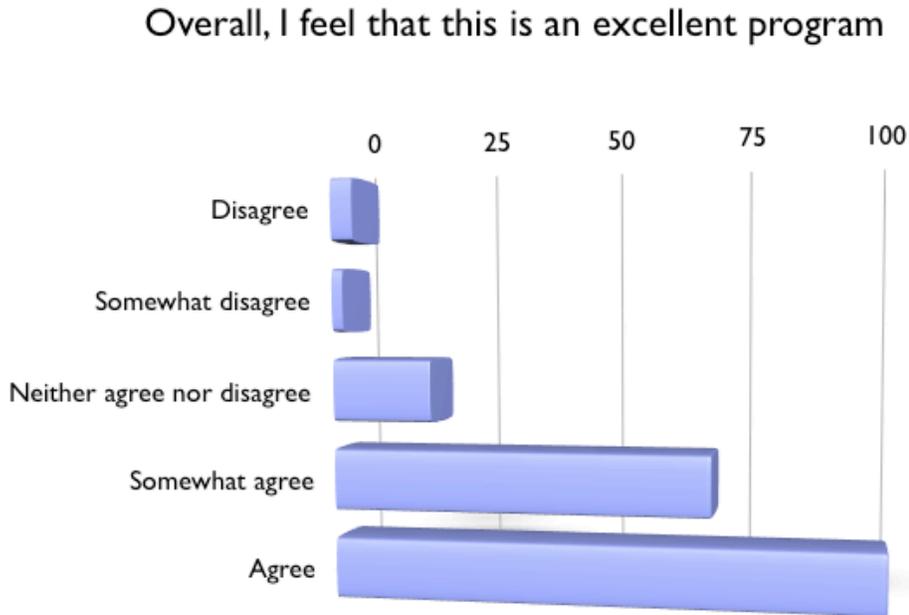


The teachers were also asked if parents supported the project. In 2004/05 the responses were: disagree 0%, somewhat disagree 0%, neither agree nor disagree 28.9%, somewhat agree 23.7% and agree 47.4%. In 2006/07, the responses were disagree 0%, somewhat disagree 3%, neither agree nor disagree 19%, somewhat agree 26%, agree 52%.



### Teachers' feelings

*"This is a great program. Most teachers feel this way. We just don't have time to do it!!"*



The teachers were generally very supportive of QDPA. When asked to respond to the statement, "Overall, I feel that this is an excellent program", the teachers stated disagree - 2%, somewhat disagree 1%, neither agree nor disagree 9%, somewhat agree 36% and agree 52%. A minority of teachers expressed opinions such as, "I don't agree with the program. To get 25-30 students up and then settled down is not a benefit. The kids are sweaty and thirsty as is the teacher. Schedule another gym class would be of more benefit", but more typical comments included, "I do believe that the QDPA program does work. There are times however when everyday events have to take priority and teachers must not see this as added pressure to their already busy/full day. My students look forward to their QDPA time and they practically run the program themselves now."

## Teachers' feelings about the role of parents

In providing additional comments at the end of the survey, a number of teachers questioned the role that parents should be playing in promoting physical activity and healthy eating with their children. The following series of quotes illustrates this point.

*"While I believe that QDPA is a good program, it seems that more needs to be done to educate parents. Kids need QDPA at home! It's one more thing added to our school day, which, as you know, is very crowded already! While we encourage students in QDPA, they often like it in the elementary grades so they can have a shorter math, lang etc... period."*

*"We already have an overloaded curriculum, and feel guilty about not being able to complete academics – now we get to feel guilty about not having time to fit in physical activity. Parents need to take ownership of physical activity as well as other aspects of their child's well being. Since it's so important (and I do agree that it is), Why do we not get allotted enough phys. ed time?"*

*"Currently instruction time is at a premium. I am finding it very difficult taking 10-20 minutes out of my day. I wholly support what you are trying to accomplish and feel strongly that an active lifestyle is required to maintain good health. There is however a part of me that thinks maybe we are targeting the wrong audience, if parents continue to feed children unhealthy choices for snacks and/or lunches – is the QDPA going to have the impact that is required? Also, with lack of space and many objects around that can hurt i.e. desk corners etc, are we getting full benefit?"*

*"Shouldn't parents be more responsible for 'active' children and teachers 'teach' the outcomes we must? Otherwise, slack off some of the outcomes so we have time for QDPA without begrudging it!"*

The program leaders may wish to consider the best way to get the healthy living messages to parents. It was reported that the parent launches for the program had gone well in most of the schools, but subsequent events had not been so well attended.

## **The future**

### **Sustainability**

The Canadian Association for School Health has noted that sustainability is a key issue for Active Schools programs. Large projects, such as the Active Living Schools in Ontario, have ceased to exist because they were not able to secure long-term funding. The Active Living Committee noted that the set-up costs for this project would be much greater than the funding required to sustain the project in the longer term. The program leaders should engage the Nova Central School Board and the Government of Newfoundland and Labrador in a discussion to determine the long-term future of the project.

# Conclusion

*"I think the program is very successful as it is now. The resources provided are excellent."*

The overall impression is that generally the principals, teachers and parents support the Active Schools Program. The students also love the activities. The rationale for this project is an underpinning belief in the need to take action to combat a crisis of poor nutrition and physical inactivity in children. Dr. Casey starts the teacher training days with a presentation of statistics including:

- 1/3 Canadian children are overweight
- 1/5 Canadian children are obese
- 2/3 of children are physically inactive
- 1/5 children eat the recommended servings of fruit and vegetables per day

Dr. Casey also notes the serious consequences of childhood obesity and for a child with type II diabetes. This includes:

- 1 in 3 children born in 2000 will develop type 2 diabetes (CDC, 2003).

The pedometer and BMI data indicates that there is still a crisis in progress. The percentage of overweight/obese children may be even higher than previously reported in Newfoundland. Neither boys nor girls reached the recommended daily step levels and children are less active on the weekends than weekdays. The particular problem of inactivity amongst girls, on the weekends and in rural communities was addressed through focus group sessions. Screen time, and especially the amount of time spent "chatting" on

the computer seems to be seriously impacting on their health. The program should continue to explore ways to engage parents in the discussion and make sure that students get consistent health

messages at school, home and in the community. The teachers appreciate the “eye-opening” statistics and agree with the need to provide QDPA. Parents

*“The program is great. My feeling is that we are promoting active living at school but it is not being reinforced at home. The computer, gameboys, movies, TV seem to be taking over the kids free time. We encourage healthy living/eating at school and kids bring junk food from home for lunch. I DON'T KNOW!”*

have been getting this message through parent launches but other strategies that target parents and community groups should be explored.

The feedback from the training days was excellent and the energy and enthusiasm of the trainers was appreciated by the teachers. During the training days teachers are provided with resources and become familiar with activities that they can use immediately in the classroom. It is hardly surprising that many of the teachers report that this is the best in-service day they have ever attended, particularly as they are not expected to develop resources of their own. The training days also help to build teacher confidence in delivering the activities. The confidence levels are generally good although there seems to be a few schools and teachers who might benefit from additional in-services days or classroom support.

A priority for the program leaders should be to find a new or alternative manual. The resource manual is not used and is not meeting the teachers’ needs. The kits, however, are good and the items seem to be well used. Some teachers have supplemented their kits with music and other items. Good music is important as the teachers like to use ‘action’ songs with students and to have background music for circuits and other physical activities. The coordinators have also introduced innovative activities and ideas which are necessary to prevent even good quality activities from becoming repetitive and boring.

Most teachers seem to provide QDPA on days other than when the students have physical education, Suggestions have been made in the ‘scheduling’ section of this report which

include whole school activities and the coordination of classes and year groups to minimize the noise levels and general disruption from classes doing QDPA.

A concern has also been raised that students may not be moderately to vigorously active during the QDPA sessions. The program leaders should re-evaluate whether the purpose of the session is to give them a good workout or whether activity breaks are acceptable. Activity breaks can send important messages about avoiding a sedentary lifestyle. However, is the purpose of the project to educate young people or to provide them with a much needed workout? Consideration should also be given as to what is meant by Quality in QDPA. The Canadian Association for Health, Physical Education and Recreation (CAHPERD) has defined what is meant by Q in Quality Daily Physical Education (QDPE) and this could be a useful point of reference. It is also worth noting that in Ontario and other provinces teachers are talking about DPA rather than QDPA. The students and teachers in Nova Central seem to be familiar with QDPA.

Given the pressures of curriculum time, space in the classroom and safety concerns, some questioned whether it would be more appropriate to give more time to physical education. This seems to be a reasonable

“With requirements of completion of outcomes in other subject areas, very difficult to take time from these areas to implement QDPA. If it is to be part of our day, the Department needs to give the support and time necessary to implement it.”

comment as the 2007 Newfoundland and Labrador Physical Education Survey showed that at least 60% of K-6 schools are not providing the mandatory 6% (the second lowest in Canada) of total instruction time for physical education. This issue needs to be addressed by the Department of Education, the NLTA and the Nova Central School Board. The leaders of the Active Schools program made it quite clear in their training days that this was not meant to replace physical education, but to make sure that students get QDPA either through physical education or the classroom activities.

Sustainability and long-term planning are critical questions that need to be addressed by the Active Living Committee, the Nova Central School Board and the Government of Newfoundland and Labrador. There is also a need to engage these groups in a broader discussion about how the Active Schools program 'fits' with other aspects of a Comprehensive Approach to School Health. The Healthy School Report Card (Canadian edition) has identified the following characteristics of a healthy school:

1. School Health Program (district coordination, policy and support)
  2. Coordination of School Health program (school facilitation of program)
  3. Healthy Emotional and Social Environment
  4. Family and Community Involvement
  5. Healthy Physical Environment
  6. Health Education
  7. Physical Education and Physical Activity
  8. Nutrition Services
  9. School Health Services (prevention and control of diseases)
  10. Counseling, psychological and social work services
  11. School health promotion for staff
- (Adapted from Lewallen and Vamos, 2006, p.25).

The discussion should also include the 'fit' with physical education, health education, intramurals, after-school sport and other opportunities for physical activity such as at recess time. The aforementioned organizations should work together to develop an Active Schools policy. Such a policy could help to define aims and objectives, roles and responsibilities and relationships.

*"I think this is a great idea and feel that it should be worked on. Some of the courses schools are forced to offer should be looked at. I feel that the NLTA should become involved to make this dream a better reality."*

# References

Campagna et al. (2002). Physical Activity Levels in Children and Youth in Nova Scotia.

Canadian Community Health Survey (2004).

Cardon, G. & De Bourdeaudhuij, I (2004). A Pilot Study Comparing Pedometer Counts with Reported Physical Activity in Elementary Schoolchildren. *Paediatric-Exercise Science*, 16, 355-367.

Gable, S., Chang, Y., Krull, J.L. (2007). Television watching and frequency of family meals are predictive of overweight onset and persistence in a national sample of school-aged children. *Journal of American Dietary Association*, 107(1), 53-61.

Grundy, S.M., Blackburn, G., Higgins, M., Luer, R., Perri, M.G., & Ryan, D. (1999). Physical activity in the prevention and treatment of obesity and its comorbidities: Evidence report of independent panel to assess the role of physical activity in the treatment of obesity and its comorbidities. *Med Sci Sports and Exercise*, 31, 1493-500.

Guo, S.S., Wu., Chumlea, W.C. et al. (2002). Predicting overweight and obesity in adulthood from body mass index values in childhood and adolescence. *American Journal of Clinical Nutrition*, 76(3), 653-8.

Health Canada (2000). *Canadian Guidelines for Weight Classification in Adults* (Ottawa, ON: Health Canada, 2000), adapted from World Health Organization, *Obesity: Preventing and Managing the Global Epidemic: Report of a WHO Consultations on Obesity*, Geneva Switzerland, WHO.

Health Canada (2002). *Canada's Physical Activity Guide for Children and Youth* (Ottawa, ON: Minister of Public Works and Government Services Canada)

Lewallen, T. & Vamos, S. (2006 Fall/Winter). A tool to support healthy school communities: the healthy school report card. *Health & Learning*, Canadian Teachers Federation, 23-28.

Lobstein, T., Baur, L., & Uauy, R. (2004). Obesity in children and young people: A crisis in public health. *Obesity Reviews*, 5(1), 4-85.

McKay et al. (2004). Phase 1 (Pilot) Evaluation Report and Recommendations, Action Schools! BC.

Meeks, L., Heit, P., & Page, R. (2005). *Comprehensive School Health Education*, (4th ed.). Toronto: Mc.Graw Hill

O'Dea, J.A. (2001). Self-concept, weight issues and body image in children and adolescents. *Advances in Psychology Research*, 6, 157-191.

Raine, K. (2004). *Overweight and Obesity in Canada* (Ottawa, ON: Canadian Institute for Health Information).

Tremblay, M.S., & Willms, J.D., (2003). Is the Canadian childhood obesity epidemic related to physical inactivity? *International Journal of Obesity and Related Metabolic Disorders*, 27(9), 1100-5.

Tudor-Locke, C., Pangrazi, R., Corbin, C., Rutherford, W., Vincent, S., Raustorp, A., Tomson, L., & Duccihy, To. (2004). BMI-referenced standards for recommended pedometer-determined steps/day in children. *Preventative Medicine*, 38, 857-864.

Wills, J.D., Tremblay, M.S, & Katzmarzyk, P.T. (2003). Geographic and demographic variation in prevalence of overweight Canadian children, *Obesity Research*, 11, 668-673.

World Health Organization (1998). *Obesity: Preventing and Managing the Global Epidemic*. Geneva: World Health Organization.