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Presenting the Evidence: Quality Physical Education for Canadian Children and Youth Position Statement by Physical and Health Education Canada

Mettre en place l'épreuve La qualité d'éducation physique pour les jeunes canadiens. Déclaration d'intention par l'éducation physique et santé du Canada

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The benefits of regular physical activity cannot be overstated. In particular, the importance of quality physical education programs for every Canadian child is the foundation upon which these benefits are derived. Physical education is the one place within Canadian society in which every child has equal and equitable opportunities to develop the attitudes, skills, and knowledge *to lead an active, healthy lifestyle. The objective of this position statement by Physical and Health Education Canada (PHE Canada) is to present the evidence behind the importance of ensuring that every student attending primary and secondary schools across Canada receives a quality physical education program on a regular basis (i.e., 150 minutes per week) from a teacher qualified to teach in physical education. As this statement will demonstrate, despite the wide range of support from various sectors (e.g., health, education, sport) and the research evidence behind the importance of quality physical education programs, Canada is not meeting the fundamental rights of children and youth in our schools. As a result, many Canadian children face a future of serious health consequences that will not only place a significant burden on our health care system, but will seriously jeopardize their overall quality of life. This position statement provides a series of recommendations based on previous research for decision and policy makers to consider in order to ensure Canadian physical education programs help develop a generation of children and youth who will lead active, healthy lifestyles.*

On ne saurait trop insister sur les bienfaits d'un mode de vie physiquement actif. De fait, ils confirment l'importance qu'il y a à offrir des programmes d'éducation physique de qualité à tous les enfants du Canada. Le domaine de l'éducation physique est le seul secteur de la société canadienne qui peut offrir à chaque enfant une chance équitable et égale d'acquérir les attitudes, les compétences et les connaissances nécessaires pour mener une vie saine et active. Cet énoncé de position produit par Éducation physique et santé Canada (EPS Canada) repose sur des données probantes confirmant l'importance de garantir

que chaque jeune qui fréquente une école élémentaire ou secondaire au Canada profite d'un programme d'éducation physique de qualité sur une base régulière (c.-à-d., 150 minutes par semaine) et de cours d'éducation physique donnés par des enseignantes et des enseignants compétents et dûment formés pour enseigner l'éducation physique. Comme le démontre cet énoncé, malgré l'appui généralisé de divers secteurs (p. ex., la santé, l'éducation, le sport) et toutes les données probantes qui confirment l'importance de programmes d'éducation physique de qualité, le Canada ne respecte toujours pas ce droit fondamental des enfants et des jeunes qui fréquentent nos écoles. Par conséquent, un grand nombre de jeunes Canadiens font face à un avenir marqué par des problèmes de santé graves qui, en plus de taxer lourdement notre régime de soins de santé, nuira grandement à leur qualité de vie. Cette prise de position s'accompagne d'une série de recommandations fondées sur des recherches antérieures incitant les décideurs à engager des mesures pour garantir que les programmes d'éducation physique canadiens engendrent une génération de jeunes qui opteront pour des modes de vie sains et actifs.

The World Health Organization (2002) reported that in 2001, 1.9 million global deaths were attributed directly to physical inactivity. Specifically, "… physical inactivity caused 15% of some cancers, diabetes and heart disease" (p. xvi). What is distressing about this statistic is that the solution to prevent such deaths has been available for decades. The purpose of this position paper is to demonstrate that while physical education programs provide one of the first lines of defence needed to prevent these premature deaths, they have been deteriorating in Canada due to lack of resources, qualified personnel, and support. This paper will present evidence-based research that supports the important role that quality physical education programs across Canada have in reversing the declining health status of Canadian youth.

The benefits of physical activity are well documented (c.f., Bouchard, Shephard, & Stephens, 1994). In one of the most extensive reviews of existing research ever conducted within the area of physical activity, the United States Surgeon General's Report concluded that regular physical activity "…reduces the risk of premature mortality in general, and of coronary heart disease, hypertension, colon cancer, and diabetes mellitus in particular [and] … also improves mental health and is important for the health of muscles, bones, and joints" (United States Department of Health and Human Services, 1996, p. 4).

Despite the previously noted benefits, 87% of Canadian children and youth between ages 5 to 19 are not meeting Canadian guidelines for daily physical activity (Canadian Fitness and Lifestyle Research Institute, 2008). This has led to 26% of Canadian children and adolescents aged 2 to 17 being overweight or obese and 8% being obese (Sheilds, 2004). International surveillance work indicates that Canadian school-aged youth are amongst the most obese in the world (Janssen et al., 2005) and that a high majority of obese children remain obese into adulthood (Freedman, Khan, Dietz, Srinvasan, & Bernson, 2000). This has led to our health care system being overburdened and left the taxpayers with a large bill to pay. On average, an inactive person spends 38% more days in hospital, uses 5.5% more family physician visits, 13% more specialist visits, and 12% more nurse visits than an active person (Sari, 2009). In 2001, the economic burden of illnesses or injuries associated with physical inactivity was estimated at

$5.3 billion ($1.6 billion in direct costs,[1] $3.7 billion in indirect costs[2]). This represented 2.6% of all health care costs in Canada that year (Katzmarzyk & Janssen, 2004). The concerns surrounding these alarming expenditures are enhanced given the current physical inactivity rates of Canada's children and youth.

In 2000, 57% of Canadian children and youth aged five to seventeen years were not sufficiently active to meet international guidelines for optimal growth and development (Craig, Cameron, Storm, Russell, & Beaulieu, 2001). For adolescents, this number increased from 64% in 2000 (Craig et al., 2001) to 82% in 2002 (Craig & Cameron, 2004). Girls in particular appear to be most at risk. In 2000, 70% of girls and 60% of boys were not considered active enough (Craig et al., 2001). By 2002, this number had increased to a distressing rate of 88% for girls and 76% for boys (Craig & Cameron, 2004). Given the evidence from previous research that physical inactivity during childhood and adolescence is associated with physical inactivity throughout adulthood (Armstrong, 2001; Malina, 1994; Telama, Yang, Laakso, & Viikari, 1997), the economic costs and the burden placed on our health care system are only expected to rise accordingly as this inactive population ages.

To address the concerns noted above, schools have been identified as the most important venue to provide children with the attitudes, skills, and knowledge to lead active healthy lifestyles (World Health Organization, 2000). Schools also provide the most efficient and cost-effective means of improving the health and physical activity levels of Canadian children (Cameron, Wolfe & Craig, 2007). However, concerns have risen surrounding the quality of these programs given the lack of government funding and support for physical education in Canada (Hardman & Marshall, 2000; Tremblay, Pella, & Taylor, 1996). The purpose of this position statement is to present the research evidence in support of the importance of implementing quality physical education programs for all Canadian children and youth in order that schools and their teachers receive the necessary time, preparation, and resources to cause the behavioural change in students that is needed.

International and National Support

Given the concerns surrounding children's level of physical inactivity, support for quality physical education programs has never been greater. The Canadian Charter of Rights and Freedoms (Department of Justice, 1982) guarantees that every child is entitled to receive primary and secondary school instruction. Within every province in Canada, students are required to receive physical education instruction throughout their primary years and at least one course during their secondary years. The amount of time allocated varies province by province and school-board by school-board. Given the fundamental right of every child to receive a quality education and the nature of provincial curricula, school physical education programs have been identified as the best environment within our society to provide every child with equal and equitable access to the necessary skills and knowledge for a healthy lifestyle (e.g., Rink & Mitchell, 2002; Sallis & McKenzie, 1991). Participation in such programs increases the likelihood that students become physically literate which enables them to:

> … move with competence in a wide variety of physical activities that benefit the development of the whole person. Physically literate individuals consistently develop the motivation and ability to understand, communicate, apply, and analyze different forms of movement. They are able to demonstrate a variety of movements confidently, competently, creatively and strategically across a wide range of health-related physical activities. These skills enable individuals to make healthy, active choices throughout their life span that are both beneficial to and respectful of themselves , others, and their environment. (Mandigo, Francis, Lodewyk, & Lopez, 2009, p. 28)

A students' fundamental right to participate in physical education programs that embrace the importance of developing physical literacy is supported by the United Nations Educational, Scientific and Cultural Organization's International Charter of Physical Education and Sport which states that "…physical education … is a fundamental right for all, it is essential for the full development of a child's personality" (1978, p. 31). Many organizations have identified the importance of physical education programs within schools. For example, the World Health Organization's (2000) Global Initiative on Active Living stressed the importance for appropriate use of physical education programs in schools to enhance physical activity among school-aged children and youth. Results from the World Summit on Physical Education called upon the international community to recognize the fundamental right of all children to have access to quality physical education programs taught by qualified teachers to ensure that all children receive and develop the necessary skills to lead healthy lives (International Council of Sport Science and Physical Education [ICSSPE], 2001). In recognition of the important role that quality physical education programs can play in causing behavioural change, the United Nations (UN) declared 2005 to be the International Year of Physical Education and Sport where physical education was identified as a critical feature in the healthy development of children and youth around the world.

Within Canada, many national organizations support the critical importance of physical education within schools. For example, the Canadian Paediatric Society (2002) and the Heart and Stroke Foundation of Canada (2008) both recommend that children and youth require quality, daily, physical education classes (kindergarten to grade 12) taught by qualified, trained educators. Canada's Sport Policy (Sport Canada, 2003) has identified quality physical education programs as one of the most effective ways to reduce the social, structural, and economic barriers typically faced by children and youth, particularly those in low-income families.

If the vision of international and national organizations is to be met, a number of actions and changes are needed to ensure that teachers have the necessary preparation, time, and resources to achieve the objectives of fostering a healthy and active generation of children and youth.

What is Currently Happening in Canadian Physical Education Programs?

Physical education curricula across Canada have adopted precise and accessible outcome-based approaches to student learning. Embedded within every provincial curricula are general outcome statements associated with

assisting children and youth to develop the necessary attitudes, skills, and knowledge that lead to a healthy and active lifestyle. For example, in British Columbia's integrated resource package, "the aim of Physical Education K to 7 is to provide opportunities for all students to develop knowledge, movement skills, and positive attitudes and behaviours that contribute to a healthy, active lifestyle (British Columbia Ministry of Education, 2006, p. 11). In Manitoba, "the aim of the curriculum is to provide students with planned and balanced programming to develop the knowledge, skills, and attitudes for physically active and healthy lifestyles. The vision is *physically active and healthy lifestyles for all students*" (Manitoba Education and Training,2008, p. 1). In Ontario, the recently revised Health and Physical Education curriculum outlines that the goal is for every student to become physically and health literate (Ministry of Education and Training, 2009). Education New Brunswick (2000) has developed outcomes to ensure that students in physical education receive "a planned program of instruction and activity ... throughout the entire year that develops skills and attitudes towards a healthy active lifestyle" (p. 1). Links to these and other provincial curriculum documents are provided in Table 1.

Table 1.
Website Links to Provincial and Territorial Physical Education Outcomes[3]

Province/ Territory	Curriculum Links
British Columbia	http://www.bced.gov.bc.ca/irp/irp_pe.htm
Alberta	http://education.alberta.ca/teachers/program/pe.aspx
Saskatchewan	http://www.education.gov.sk.ca/pe
Manitoba	www.edu.gov.mb.ca/ks4/cur/physhlth/index.html
Ontario	http://www.edu.gov.on.ca/eng/curriculum/elementary/health.html (elementary) http://www.edu.gov.on.ca/eng/curriculum/secondary/health.html (secondary)
Quebec	http://www.meq.gouv.qc.ca/DGFJ/dp/programme_de_formation/primaire/pdf/educprg2001/educprg2001-091.pdf (elementary) http://www.meq.gouv.qc.ca/DGFJ/dp/programmes_etudes/secondaire/edphysa.htm (secondary)
New Brunswick	http://www.gnb.ca/0000/publications/curric/elementarypysed.pdf (Elementary) http://www.gnb.ca/0000/publications/curric/MiddlePhysEd.pdf (Middle School) http://www.gnb.ca/0000/publications/curric/PhysicalEducationHealthGrade9-10.pdf (Secondary)
Nova Scotia	http://www.ednet.ns.ca/pdfdocs/curriculum/ActiveHealthyLiving2005_sec.pdf
Prince Edward Island	http://www.gov.pe.ca/eecd/index.php3?number=1026202&lang=E
Newfoundland &Labrador	http://www.ed.gov.nl.ca/edu/k12/curriculum/guides/physed/index.html
Yukon[4]	http://www.bced.gov.bc.ca/irp/irp_pe.htm
North West Territories[5]	http://education.alberta.ca/teachers/program/pe.aspx
Nunavut[6]	http://education.alberta.ca/teachers/program/pe.aspx

Given the stated outcomes of the various provincial curricula and the current inactivity crisis in Canada, it would stand to reason that physical education in schools is the ideal place to invest the necessary resources to address the country's health crisis. However, the status of physical education as a subject area across Canada (Health Canada, 1999) and the world (Hardman & Marshall, 2000) is not seen as a priority and the evidence that has been gathered to date supports this.

In an international review of physical education programs, Hardman and Marshall (2000) reported that 92% of countries and states legally require their schools to implement physical education. However, in most of these countries, actual implementation did not meet with statutory expectations. Hardman and Marshall estimated that only 57% of the Canadian cases they identified met provincial requirements for allotted time devoted to physical education.

Research by the Canadian Fitness and Lifestyles Research Institute (CFLRI) (Craig et al., 2001) has shown that of the 3,334 parents surveyed who had school-aged children, only 20% indicated that their child received daily physical education. The majority of parents (41%) indicated their child received physical education one to two days per week while 10% of parents indicated that their child received no physical education at all. At the secondary level, 20% of parents surveyed across Canada indicated that their adolescent child received no physical education at all and this percentage increases as students advance through secondary grades (Craig et al., 2001). Once physical education becomes an optional subject, enrolment in physical education tends to decrease significantly with the decrease more noticeable for adolescent females than males (Cameron et al., 2007; Craig & Cameron, 2004; Deacon, 2001; Government of Newfoundland and Labrador, 1996; Spence, Mandigo, Poon, & Mummary, 2001).

One of the contributing factors to the alarming trends noted above is the lack of physical education teachers qualified to teach physical education in our schools, particularly at the elementary level. In their review of physical education programs across the world, Hardman and Marshall (2000) reported that "… in many countries, the generalist teacher in primary schools is often inadequately or inappropriately prepared to teach physical education" (p. 218). In Canada, many elementary classroom generalist teachers teach physical education but receive minimal professional preparation and hence, often feel ill-prepared to teach physical education (Faulkner et al., 2008). This lack of professional preparation often serves as a barrier for generalist teachers (particularly at the elementary level) to effectively achieve the various health-related expectations and outcomes identified in provincial physical education curricula (Deacon, 2001; Janzen et al., 2003; Tremblay et al., 1996).

Currently less than half (46 %) of schools in Canada report having fully implemented policies to hire physical education specialists to teach physical education. Of this, 17% reported partially implementing such policies and 37 % reported not implementing a policy to hire physical education specialists. Secondary and middle schools are more likely than elementary schools to report exclusive use of PE specialists, that is, physical educators who have either majored or minored in physical education (often three to five years) prior to completing their bachelor of education degree or have received specialized and intense preparation during their pre-service program.(Cameron et al., 2007).

With respect to the breadth of physical education programs, approximately half of Canadian schools (53%) report that they have fully implemented policies to provide a range of physical activities to students (e.g., competitive, recreational, structured and unstructured). Twenty-one percent of schools reported having no policy to provide a range of physical activities (Cameron et al., 2007). This lack of exposure to diverse forms of physical activity can severely hinder the movement repertoire of individuals and thus jeopardize their potential to become physically literate.

Another contributing factor is the lack of resources to deliver quality physical education programs. Globally, Hardman and Marshall (2000) reported that Canada ranked near the bottom with respect to the adequacy of facilities for physical education programs. In 87% of Canadian cases, the equipment and facilities were rated as being inadequate. Approximately 40 % of schools report that they have fully implemented policies to provide adequate physical activity equipment for students. However, 30 % of schools have reported no policy related to funding for physical activity equipment (Cameron et al., 2007). Within Alberta, teachers across all grades rated indoor and outdoor facilities, storage space, existing equipment, and access to equipment for students with special needs as adequate to somewhat lacking (Mandigo et al., 2004a). These barriers in access to resources and equipment can often undermine the delivery of effective physical education programs (Hansen, 1990); Sallis, McKenzie, Kolody, & Curtis, 1996)

Recommendations

Implementing quality physical education programs on a regular basis by qualified teachers increase the likelihood that students become physically literate. These students have the attitudes, skills, and knowledge necessary to lead active, healthy lives now and in the future. A quality physical education program in Canada consists of balanced, planned, and meaningful content that is sequentially taught to all students throughout the entire school year by competent and enthusiastic educators as a valued and integrated part of the entire education process (PHE Canada, accessed 2009). Therefore, the members of PHE Canada strongly urge that in conjunction with UNESCO's International Charter of Physical Education and Sport, *every student attending primary and secondary schools across Canada receive a quality physical education program on a regular basis (i.e., 150 minutes per week) from a teacher qualified to teach*[7] *in physical education*. The research evidence behind this recommendation as it pertains directly to physical education classes and strategies for successfully implementing this recommendation are provided.

Sufficient Curricular Time be Allocated to Enable Every Student to Receive a Quality Physical Education Program

Consistent with the World Health Organization's (2000) recommendation, every student should be provided with the opportunity to take part in a structured physical education program comprised of physical activity sessions of moderate to vigorous levels several times each week. Based upon previous research, this is not currently happening within Canadian physical education programs. Given that the majority of Canadian children receive one to two physical education classes per week (Cameron, Craig, Coles, & Cragg, 2003), a physical education

class on average is scheduled for forty to forty-five minutes[8] (Mandigo et al., 2004a; Ross, Pate, Corbin, Delpy, & Gold, 1987), and children are moderately to vigorously active for approximately 20% to 35% of that time (McKenzie et al. 1995; Simons-Morton, Taylor, Snider, & Huang, 1993), most Canadian children are only moderately to vigorously active during physical education class for anywhere between 8 to 32 minutes per week.

Health Canada's (2001) Fitness Guide recommends that all children and youth should increase their *current* physical activity levels by at least a minimum of 30 minutes per day until an increase of 90 minutes of additional activity per day is achieved. These numbers suggest that the majority of Canadian children are not meeting national health and fitness standards while they are participating in physical education class. Students at the secondary level are even more at risk given that many choose to opt out of physical education once it becomes an optional subject (e.g., Dwyer et al., 2006; Mandigo et al., 2004a).

Implementing regularly scheduled physical education class can have a positive impact on student learning despite less time allocated to other academic subject areas. In a review of longitudinal and cross-sectional studies that have examined the influence of increasing physical activity time during school hours, Trudeau and Shephard (2008) reported that academic performance is maintained and in some cases enhanced despite less curricular time devoted to other academic subjects. The studies reviewed by Trudeau and Shephard (2008) suggest that being physically active during the school hours has positive effects on concentration, memory, and classroom behaviour. For example in Trois-Rivières, 546 primary students were assigned to one of two experimental groups: (a) intervention group who received one additional hour of physical education per day (or an extra five hours / week) taught by a specialist teacher; and, (b) a control group who received the standard physical education program (40 minutes /week) taught by a nonspecialist. The majority of the students in the intervention group typically scored equal to or higher than the control group on marks for French language, mathematics, English language, and natural science instruction (Shephard, 1997). The majority of teachers also reported significant improvements in student behaviour and character as a result of the additional time devoted to physical education (Shephard et al., 1984).

Similar results have also been seen as a result of implementing the Sports, Play, and Active Recreation for Kids (SPARK) program in the United States. In their results, Sallis et al. (1999) reported that despite devoting twice as many minutes per week to physical education classes, academic achievement was not compromised. Another study within the United States conducted by Chomitz et al. (2009) reported that fitness as assessed through physical education classes was significantly correlated to academic achievement. In their study, these authors reported the odds of passing a standardized achievement test in math and English increased with the number of fitness tests passed as part of a physical education class.

In a study investigating the impact of depriving students of physical education classes, Dale, Corbin, and Dale (2000) found that students were more likely to be physically active on days they received physical education than on days where they received no physical education instruction at school. This result provides support that regularly scheduled physical education classes often serve as a catalyst for physical activity participation outside of school hours and that

students who do not receive physical education at school will not compensate for their lack of physical activity during their leisure time.

In a comprehensive review of intervention studies within physical education classes, the United States Surgeon General (U.S. Department of Health and Human Services, 1996) concluded that implementing programs based on sound evidence-based research (especially programs targeting primary grades) can increase the amount of time students spend being physically active during physical education class. This can have a tremendous impact on all children; especially those most at risk. For example, data from Canada's National Longitudinal Survey of Children and Youth demonstrated that overweight/ obese children who took part in 18 or more minutes of physical education per day had increased their level of physical activity four years after this exposure (Pérez, 2003). Results from the Early Childhood Longitudinal Study in the United States also suggest that increasing instructional time for physical education has a positive impact at preventing obesity (Datar & Sturm, 2004). Based on a national sample of 9,751 kindergarten children over a two year period, an additional hour of instructional physical education class resulted in a significant reduction in Body Mass Index (BMI) for girls who were over-weight or at risk for overweight. It was estimated that by offering five hours of physical education instruction per week for kindergarten students could "… decrease the prevalence of children who are at risk for overweight by 43% and the prevalence for overweight by 60%" (Datar & Sturm, 2004, p. 1504). Thus, schools are encouraged to offer mandatory physical education programs throughout all primary and secondary grades and strive towards achieving national standards of at least 150 minutes per week (Canadian Association for Health, Physical Education, Recreation and Dance, 2004) to ensure the fundamental right of access to quality physical education programs for all children and youth is achieved.

Teaching of Physical Education Should be Performed by Qualified Personnel

Hiring appropriately qualified teachers to teach regular physical education classes is a necessary step to ensuring the quality of programs that children receive in schools are consistent with best practices. "All staff involved in physical education … in and through schools need to acquire the appropriate knowledge and understanding of the value, benefits and roles, as well as the risks, of physical activity and how to assess the requirements for enjoyable and safe participation in various activities" (WHO, 2000, p. 21). The benefits of having qualified personnel teach physical education classes as opposed to teachers with little to no background are tremendous. In a survey of 480 Alberta teachers, those identified as physical education specialists reported significantly higher levels of enjoyment in teaching physical education and felt better prepared and confident to teach physical education than those who were not identified as physical education specialists (Mandigo et al., 2004b). As a result, physical education specialists are more likely to teach longer lessons in which students spend significantly more time being active and engaged in moderate to vigorous levels of physical activity during class (McKenzie et al, 1995). This is especially significant, given that increasing the aerobic component of a physical education class can have beneficial effects on young adolescents' cardiovascular systems in as little as eight weeks (McMurray et al., 2002).

The impact of having qualified teachers often results in students receiving an innovative curriculum which exposes students to effective instructional behaviours for longer periods of time (McKenzie, Sallis, Faucette, Roby & Kolody, 1993). For example, in a three-year study at four Manitoba schools, Janzen at al. (2003) reported that physical education specialists were more likely to: (a) deliver developmentally appropriate, inclusive and gender equitable lessons; (b) take into consideration students' affective development within their classes, (c) have increased variety of classroom and extracurricular activities; and (d) have a positive impact on the overall school climate. Other research has also demonstrated that students taught by qualified teachers performed better on movement tasks (McKenzie, Alcaraz, Sallis, & Faucette, 1998), and had better physiological outcomes (McKenzie et al., 1995; Sallis et al., 1997; Trudeau, Laurencelle, Tremblay, Rajic & Sheppard, 1998). When qualified teachers are removed from the school, significant decreases in vigorous activity time and skill development are often seen (McKenzie et al., 1995).

Every Student Should Receive a Quality Physical Education Program

Having qualified physical education teachers deliver regularly-scheduled classes increases the chances that a quality program will be delivered and that their students will become physically literate. However, teachers need the necessary resources to be able to deliver a quality program and the majority of teachers and schools have indicated that their budget to provide quality programs is sadly lacking (Hansen, 1990; Mandigo et al., 2004a; Sallis et al., 1996). According to Physical and Health Education Canada (accessed 2009.), a quality physical education program in Canada consists of balanced, planned, and meaningful content that is sequentially taught to allstudents throughout the entire school year by competent and enthusiastic educators as a valued and integrated part of the entire education process. Previous research has suggested that when children and youth are exposed to developmentally appropriate quality programs, participants report higher levels of enjoyment, self-efficacy and positive attitudes and are more likely to engage in moderate to vigorous activity (Bungum, Dowda, Weston, Trost, & Pate, 2000).

Marshall and Bouffard (1997) examined the impact that a Quality Daily Physical Education (QDPE) program (i.e., a physical education program taught by a physical education specialist on a daily basis) had on 100 students in grades one and four. Their results demonstrated that students with initially low movement competencies in a QDPE program scored better on the Test of Gross Motor Development than similar students in non-QDPE programs. These results support the well-known and often stated benefits of a QDPE program for those who are at risk of becoming physically illiterate as a result of not developing the necessary basic movement and sport skills to be competent movers. As well, there are fitness benefits associated with QDPE programs. In a test of cardiovascular fitness, grade one boys who received QDPE had higher scores than grade one boys in non-QDPE programs. Similarly, grade four girls in QDPE programs had higher fitness scores than grade four girls in non-QDPE programs (Marshall & Bouffard, 1997)

McKenzie et al. (2004) have also demonstrated the impact of a quality physical education program on students' activity levels. Twenty-four schools consisting of approximately 25,000 students were randomly assigned as either an

intervention school (n = 12 schools) or a control school (n = 12 schools). The intervention schools received the necessary infrastructure to deliver a quality physical education program. Specifically, physical education teachers in these schools took part in professional development workshops that discussed effective strategies to deliver a quality physical education program. Teachers were also provided with curricular materials and on-site visits from a specially trained intervention team to help students increase the amount of moderate to vigorous physical activity levels during physical education class. The results demonstrated that compared to the control group, students in the intervention schools had significantly higher levels of moderate to vigorous levels of physical activity (18% increase) during their physical education class compared to the control group (3% increase) over a two year period.

Along with physical resources that are desperately needed, teachers also require the necessary *up-to-date* information pertaining to best-practices that are based on sound evidence to help them deliver quality programs. Despite the clear evidence behind the importance of child-centred programs that are meant to be inclusive to help *all c*hildren develop lifelong skills across a variety of activities, many physical education programs still place a high focus on competitive and traditional sport programs (Armstrong, 2001; Kidd, 2001; Mandigo et al., 2004a) that may *turn-off* many students.

In comprehensive reviews of school-based interventions based upon existing evidence of best-practices, both Bar-Or (1994) and Kahn et al. (2002) concluded that innovative programs based on best-practices can have a positive impact on students' fitness and activity levels. Bar-Or also reported improvements in knowledge and attitudes towards healthy lifestyles, and a decrease in risk-factors (e.g., overweight) associated with physical inactivity. In order to preserve these benefits, such programs need to be continued over a long-period of time.

Regular physical education classes are the best avenue with which to maintain and further develop the health benefits of physical activity. As a result, there is a need to ensure future research is supported to uncover what these best practices are and how they can be best disseminated and implemented by teachers within physical education programs.

Anticipated Long-Term Outcomes Associated with the Implementation of These Recommendations

As demonstrated throughout this position statement, implementing quality physical education programs delivered by qualified physical education teachers on a regular basis have many short-term benefits. These are important outcomes that support the recommendations detailed in this position statement. However, if one of the mandates of physical education is to support the development of active, healthy lifestyles throughout the lifespan, what is the evidence to suggest that implementing quality programs have long-term consequences? Given the expense, time, and logistical ability to track students into adulthood, there is a paucity of research within this area. In their review of existing studies examining the impact of physical education programs, Shephard and Trudeau (2000) found only one study that directly tracked students over a 20 year period. The Trois-Rivières Growth and Development study followed-up with 253 of the initial sample of 546 students twenty years after the completion of the initial study. Participants were asked a series of questions pertaining to their current attitudes

and beliefs about physical activity, current physical activity patterns, and perceived barriers to physical activity. Compared to women in the control group who had received minimal physical education from their homeroom teacher, women in the experimental group who had received a QDPE program were more likely to report: (a) they were currently exercising three days per week or more; (b) they had higher perceived levels of health; and, (c) they experienced lower relative risks of back problems. Men in the study did not report significant changes after 20 years. The authors hypothesize that this may have been attributed to men having higher levels of physical activity at baseline compared to the women in the study (Trudeau et al., 1998).

Notwithstanding the short-term evidence noted throughout this position, there is a paucity of research examining the long-term impact of implementing these recommendations. Ongoing research funding within this area is greatly needed to ensure that the recommendations based on various sources of evidence are continually being monitored. A full-scale, national longitudinal study of the impact of quality physical education programs taught by qualified teachers on a regular basis is not only needed, but warranted (World Health Organization, 2000).

Conclusion

From its inception in 1945, Canadians have played a prominent role with respect to the importance of human rights within the UN. It is time once again for Canada to stake its place in history as a leader of children's rights by ensuring that the basic premise of the 1978 UN Charter of Physical Education and Sport is implemented across all Canadian schools. It is time to ensure that *every student attending primary and secondary schools across Canada receives a quality physical education program on a regular basis from a teacher qualified to teach in physical education*. The evidence presented to support this fundamental right is clear. The evidence is also clear that this fundamental right is not available for a majority of Canadian children.

However, Canada has an opportunity to lead by enacting policies to ensure our children and youth receive the type of education they need to develop the attitudes, skills, and knowledge to lead active and healthy lives. The recommendations and evidence behind the importance of a physical education program that is taught by a qualified teacher, on a regular basis and in a quality manner need to be implemented today. "When physical education is not incorporated as an integral part of education programmes, the consequences can be long-lasting and manifold" (ICSSPE, 2001, p. 126). If we have any chance of reversing the startling inactivity rates and the burden it is placing on our health care system and overall quality of life, we must work with our schools and ensure they have the necessary resources to make certain that ach and every student is physically literate. It is time to provide our schools with the appropriate tools and resources to properly immunize our children against physical inactivity and provide them with the *active bodies* they need to lead an active life. It is time to for us all to start moving.

References

Armstrong, N. (2001). Physical fitness, physical activity, and physical education. In M-K. Chin, L. D. Hensley, Y-K. Liu (Eds.). *Innovation and application of physical education and sports science in the new millennium: An Asia-Pacific perspective,* (pp. 35-43). Tai Po, Hong Kong: The Hong Kong Institute of Education.

Bar-Or, O. (1994). Childhood and adolescent physical activity and adult profiles. In C. Bouchard, R. J. Shephard, & T. Stephens, (Eds.). *Physical activity, fitness and health,*(pp. 931-942). Champaign, IL: Human Kinetics.

British Columbia Ministry of Education (2006). *Physical education K to 7: Integrated resource package 2006*. Victoria, BC: Author.

Bouchard, C., Shephard, R. J., & Stephens T. (1994). *Physical activity, fitness and health*. Champaign, IL: Human Kinetics.

Bungum, T., Dowda, D., Weston, A., Trost, S. G., & Pate, R. R. (2000). Correlates of physical activity in male and female youth. *Paediatric Exercise Science, 12*, 71 – 79.

Cameron, C., Craig, C. L., Coles, C., & Cragg, S. (2003). *Increasing physical activity: Encouraging physical activity through school*. Ottawa, ON: Canadian Fitness and Lifestyle Research Institute.

Cameron, C., Wolfe, R., & Craig, C. (2007). *Opportunities for physical activity in Canadian schools: Trends from 2001 – 2006*. Ottawa, ON: Canadian Fitness and Lifestyle Research Institute.

Canadian Association for Health, Physical Education, Recreation and Dance (2004). *Quality daily physical education*. Ottawa, ON: Author.

Canadian Fitness and Lifestyle Research Institute (2008). Kids CAN play. *Bulletin, 1*. Retrieved July 16, 2009 from http://www.cflri.ca/eng/statistics/surveys/documents/CANPLAY_2008_b1.pdf

Canadian Paediatric Society (2002). Healthy active living for children and youth. *Paediatric Child Health, 7*(5), 339-345.

Chomitz, V., R., Slining, M. M., McGowan, R. J., Mitchell, S. E., Dawson, G. F., & Hacker, K. A. (2009). Is there a relationship between physical fitness and academic achievement? Positive results from public school children in the North Eastern United States. *Journal of School Health, 79* (1), 30-37.

Craig, C. L., & Cameron, C. (2004). *Increasing physical activity: Assessing trends from 1998 to 2003*. Ottawa, ON: Canadian Fitness and Lifestyles Research Institute.

Craig, C. L., Cameron, C., Storm, Russell, S. J., & Beaulieu, A. (2001). *Increasing physical activity: Supporting children's participation*. Ottawa, ON: Canadian Fitness and Lifestyles Research Institute.

Dale, D., Corbin, C. B., & Dale, K. S. (2000). Restricting opportunities to be active during school time: Do children compensate by increasing physical activity levels after school? *Research Quarterly for Exercise and Sport, 71*, 240-248.

Datar, A., & Sturm, R. (2004). Physical education in elementary school and body mass index: Evidence from the Early Childhood Longitudinal Study. *American Journal of Public Health, 94*, 1501-1506

Deacon, B. W. (2001). *Physical education curriculum review report*. Victoria, BC: Ministry of Education Curriculum Division. Retrieved July 29, 2004, from http://www.bced.gov.bc.ca/irp/reports/pereport.pdf

Department of Justice (1982). *Canadian Charter of Rights and Freedoms*. Retrieved December 9th, 2009, from http://laws.justice.gc.ca/en/charter/1.html

Dwyer, J., Allison, K., LeMoine, K., Adlaf, E., Goodman, J., Faulkner, G., & Lysy, D. (2006). A provincial study of opportunities for school-based physical activity in secondary schools. *Journal of Adolescent Health, 39*(1), 80-86.

Education New Brunswick (2000). *Elementary physical education curriculum: Kindergarten – grade 5*. Fredericton, NB: Curriculum Development Department.

Faulkner, G., Dwyer, J., Irving, H., Allison, K., Adlaf, E. M., & Goodman, J. (2008). Specialist or nonspecialist physical education teachers in Ontario elementary schools: Examining differences in opportunities for physical activity. *The Alberta Journal of Educational Research, 54*(4), 407-419.

Freedman, D. S., Khan, L. K., Dietz, W. H., Srinvasan, S. S., & Berenson, G. S. (2000). Relationship of childhood obesity to coronary heart disease risk factors in adulthood: the Bogalusa Heart Study. *Pediatrics, 108*, 7112-718.

Government of Newfoundland and Labrador (1996). *A curriculum framework for physical education: Adjusting the focus* [online]. St. John's, NL: Author. Retrieved January 11, 2010, from http://www.ed.gov.nl.ca/edu/k12/curriculum/documents/physed/

Hansen, H. (1990). Barriers to QDPE and how to overcome them. *Canadian Association for Health, Physical Education, Recreation, and Dance Journal, 56*(2), 16-21.

Hardman, K., & Marshall, J. (2000). The state and status of physical education in schools in international context. *European Physical Education Review, 3*, 203-229

Health Canada (1999). *Healthy development of children and youth (Catalogue no: H39-501/1999E)*. Ottawa, ON: Health Canada Publication.

Health Canada (2001). *Canada's physical activity guide to healthy active living*. Retrieved July 29, 2004, from www.healthcanada.ca/pageguide

Heart and Stroke Foundation of Canada (2008). *Position statement: Schools and physical activity.* Retrieved July 16, 2009, from www.heartandstroke.com/atf/cf/%7B99452D8B-E7F1-4BD6-A57D-B136CE6C95BF%7D/Schools_PhysicalActivity_PS_Eng_Feb2008.pdf.

International Council of Sport Science and Physical Education (2001). The Berlin call for action. In G. Doll-Tepper, & D. Scoretz (Eds.). *Proceedings: World summit on physical education* (pp. 113-136). Berlin, Germany: International Council of Sport Science and Physical Education.

Janssen I, Katzmarzyk P, Boyce W, Vereecken C, Mulvihill C, Roberts C, Currie C, & Pickett W, (2005). Comparison of overweight and obesity prevalence in school-aged youth from 34 countries and their relationships with physical activity and dietary patterns. *Obesity Reviews, 6*(2) 123-132.

Janzen, H., Halas, J., Dixon, S., DeCorby, K., Booke, J., & Wintrup, L. (2003). The quality of physical education in Manitoba schools: A three year study. *Physical and Health Education Journal, 69*(2), 44.

Kahn, E. B., Ramsey, L. T., Brownson, R. C., Heath, G. W., Howze, E. H., Powell, K. E., Stone, E. J., Rajab, M. W., & Corso, P. (2002). The effectiveness of interventions to increase physical activity: A systematic review. *American Journal of Preventive Medicine, 22*(Suppl. 4), 73-107.

Katzmarzyk, P. T., & Janssen, I. (2004). The economic costs associated with physical inactivity and obesity in Canada: An update. *Canadian Journal of Applied Physiology, 29*(1), 90-115.

Kidd, B. (2001). The economic case for physical education. In G. Doll-Tepper, & D. Scoretz (Eds.). *Proceedings: World summit on physical education* (pp. 95-104). Berlin, Germany: International Council of Sport Science and Physical Education.

Malina, R.M. (1994). Physical activities and relationships to growth, maturation and physical fitness. In C. Bouchard, R. Shephard & T. Stephens (Eds.). *Physical activity, fitness and health* (pp. 918-930). Champaign, IL: Human Kinetics Publishers.

Mandigo, J. L., Francis, N., Lodewyk, K., & Lopez, R. (2009). Physical literacy for educators. *Physical and Health Education Journal, 75*(3) 27-30..

Mandigo, J. L., Spence, J. C., Thompson, L. P., Melnychuk, N., Schwartz, M., Marshall, D., & Causgrove Dunn, J (2004a). What's going on in physical education classes? An Alberta example. *Avante, 10*(1), 1-15.

Mandigo, J. L., Thompson, L., Spence, J., Melnychuk, N., Schwartz, M., Marshall, D., & Causgrove Dunn, J. (2004b). A descriptive profile of physical education teachers and related program characteristics in Alberta. *Alberta Journal of Educational Research, 50*, 87 – 102.

Manitoba Education and Training (2008). *Kindergarten to senior 4: Physical education/ health education*. Winnipeg, MA: Manitoba Education and Training.

Marshall, J. D. & Bouffard, M. (1997). The effects of quality daily physical education on movement competency in obese versus nonobese children. *Adapted Physical Activity Quarterly, 14*, 222-237.

McKenzie, T. L., Alcaraz, J. E., Sallis, J. F., & Faucette, F. N. (1998). Effects of physical education program on children's manipulative skills. *Journal of Teaching Physical Education, 17*, 327-341.

McKenzie, T. L. , Feldman, H., Woods, S. E., Romero, K. A., Dahlstrom, V., Stone, E. J., Strkmiller, P. K., Williston, J. M., & Harsha, D. W. (1995). Children's activity levels and lesson context during third-grade physical education. *Research Quarterly for Exercise and Sport, 66*, 184-193.

McKenzie, T. L., Sallis, J. F., Faucette, N., Roby, J. J., & Kolody, B. (1993). Effects of curriculum inservice program on the quality and quantity of elementary physical education classes. *Research Quarterly for Exercise and Sport, 64*, 178-187.

McKenzie, T. L., Sallis, J. F., Prochaska, J. J., Conway, T. L., Marshall, S. J., & Rosengard, P. (2004). Evaluation of a two-year middle-school physical education intervention: M-SPAN. *Medicine and Sciences in Sports and Exercise, 36*, 1382-1388.

McMurray, R. G., Harrell, J. S., Bangdiwala, S. I., Bradley, C. B., Deng, S., & Levine, A. (2002). A school-based intervention can reduce body fat and blood pressure in young adolescents. *Journal of Adolescent Health, 31*, 125-132.

Ministry of Education and Training (2009). *The Ontario curriculum grades 1 – 8: Health and physical education*. Toronto, ON: Ministry of Education and Training.

Pérez, C. E. (2003). Children who become active. *Supplement to Health Reports (Catalogue 82-003), 14*, 17 – 28. Retrieved December 9th, 2009 , from http://www.statcan.ca/english/freepub/82-003-SIE/2003000/pdf/82-003-SIE2003001.pdf

Physical and Health Education Canada (n.d.). *About QDPE*. Retrieved May 21, 2009, from http://www.phecanada.ca/eng/physicaleducation/about_qdpe.cfm

Rink, J. & Mitchell, M. (2002). High stakes assessment: A journey into unknown territory. *Quest, 54*, 205-223.

Ross, J.G., Pate, R.R., Corbin, C.B., Delpy, L.A. & Gold, R.S. (1987).What is going on in elementary physical education programs. *Journal of Physical Education, Recreation and Dance, Nov-Dec*, 78-84.

Sallis, J.F. & McKenzie, T.L. (1991). Physical education's role in public health. *Research Quarterly for Exercise and Sport, 62*, 124-137.

Sallis, J. F., McKenzie, T. L., Alcaraz, J., Kolody, B., Faucette, N., Roby, J., & Hovell, M. F. (1997). The effects of a 2-year physical education program (SPARK) on physical activity and fitness in elementary students. *American Journal of Public Health, 87*, 1328-1334.

Sallis, J.F., McKenzie, T.L., Kolody, B., Curtis, P. (1996). Assessing district administrators' perceptions of elementary school physical education. *Journal of Physical Education, Recreation and Dance, 67*(8), 25-29.

Sallis, J. F., & McKenzie, T. L., Kolody, B., Lewis, M., Marshall, S., & Rosengard, P. (1999). Effects of health-related physical education on academic achievement: Project SPARK. *Research Quarterly for Exercise and Sport, 70*, 127-134.

Sari, N. (2009). Physical inactivity and its impact on healthcare utilization. *Health Economics, 18*, 885-901.

Sheilds, M. (2004). Measured obesity: Overweight Canadian children and adolescents. *Nutrition: Findings from the Canadian Health Survey Issue 1*. Ottawa, ON: Statistics Canada Catalogue no. 82-620-MWE2005001.

Shephard, R.J. (1997). Curricular physical activity and academic performance. *Pediatric Exercise Science, 9*, 113-126.

Shephard, R. J., & Trudeau, R. (2000). The legacy of physical education: Influences on adult lifestyles. *Pediatric Exercise Science, 12*, 34 – 50.

Shephard, R. J., Volle, M., Lavallée, H., LaBarre, R., Jéquier, J. C., & Rajic, M. (1984). Required physical activity and academic grades : A controlled study. In J. Illmarinen, & I. Välimäki (Eds.). *Children and sport: Paediatric work physiology* (pp. 58-66). Berlin, Germany: Springer-Verlag.

Simons-Morton, B. G., Taylor, W. C., Snider, S. A., & Huang, I. W. (1993). The physical activity of fifth-grade students during physical education classes. *American Journal of Public Health, 83*, 262-264.

Sport Canada (2003). *The Canadian sport policy*. Ottawa, ON: Author. Retrieved July 16, 2009, from www.pch.gc.ca/pgm/sc/pol/pcs-csp/2003/polsport-eng.pdf.

Spence, J., Mandigo, J., Poon, P., & Mummary, W. K. (2001). A survey of physical education enrolment at the secondary level in Alberta. *Avante, 7*(1), 97-106.

Telama, R., Yang, X., Laakso, L., & Viikari, J. (1997). Physical activity in childhood and adolescence as predictor of physical activity in young adulthood. *American Journal of Preventative Medicine, 13*, 317–323.

Tremblay, M., Pella, T., & Taylor, K. (1996). The quality and quantity of school-based physical education: A growing concern. *Canadian Association for Health, Physical Education, Recreation and Dance Journal, 62*(4), 4-7.

Trudeau, F., Laurencelle, L., Tremblay, J., Rajic, M., & Shephard, R. J. (1998). A long-term follow-up of participants in the Trois-Rivières semi-longitudinal study of growth and development. *Pediatric Exercise Science, 10*, 366 – 377.

Trudeau, F., & Shephard, R. (2008). Physical education, school physical activity, school sports and academic performance. *International Journal of Behavioral Nutrition and Physical Activity, 5*: 10.

United Nations Educational, Scientific and Cultural Organization's (1978, October/ November). Resolutions (Vol. 1). *Records of the General Conference, 20th Session* (October 24 – November 28). Paris, France. Retrieved December 9th, 2009, from http://unesdoc.unesco.org/images/0011/001140/114032Eb.pdf

United States Department of Health and Human Services (1996). *Physical activity and health: A report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services. Retrieved December 9th, 2009, from http://www.cdc.gov/nccdphp/sgr/pdf/sgrfull.pdf

World Health Organization (2002). *The world health report 2002 – Reducing risks, promoting healthy life*. Geneva, Switzerland: World Health Organization Library.

World Health Organization (2000). *Promoting active living in and through schools: Policy statement and guidelines for action* (Report No. WHO/NMH/HPS/00.4). Geneva, Switzerland: Department of NCD Prevention and Health Promotion. World Health Organization (2002). *The world health report 2002.* Geneva, Switzerland: World Health Organization Library.

Endnotes

[1] Direct costs were defined as: "… the values of goods and services for which payment was made and resources were used in treatment, care, and rehabilitation related to illness or injury" (Katzmarzyk & Janssen, 2004, p. 100).

[2] Indirect costs were defined as: "… the value of economic output lost because of illness, injury-related work disability, or premature death" (Katzmarzyk & Janssen, 2004, p. 100).

[3] Links are current as of December 9, 2009.

[4] Yukon Education utilizes the British Columbia curriculum as the basis and this is modified and enhanced to meet Yukon needs.

[5] Alberta Learning's Program of Studies for Physical Education is the approved curriculum document.

[6] At the time of publication, Alberta Learning's Program of Studies for Physical Education is the approved curriculum document. See www.gov.nu.ca/education/eng/css/progstudies7_12.htm for current information

[7] For the purposes of this position paper, *qualified to teach in physical education* is defined as individuals who have obtained a university degree in physical education or closely related fields (e.g., kinesiology) and have obtained a Bachelor of Education degree. For more information on specific recommendations for teacher preparation, please see CCUPEKA's accreditation requirements for physical education programs at: http://www.ccupeka.ca/accredpe2002.html

[8] NOTE – the amount of time varies by province to province, by board to board, and by school to school. The references provided simply suggest an average amount of time and are not intended to be representative of every PE class across Canada.