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EXPERT OPINION PAPER

The importance of physical activity interventions in Aboriginal children.

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ABSTRACT

Background Recent evidence indicates that children of Aboriginal descent are at an increased risk for the development of chronic disease. Routine physical activity has been shown to be an effective primary and secondary preventative strategy against premature mortality and chronic disease. Unfortunately, little information exists regarding the physical activity levels of Aboriginal children.

Purpose The primary purpose of this paper was to briefly review the literature to examine the importance of the routine physical activity and community-based physical activity interventions in Aboriginal children.

Methods A narrative review of the literature was conducted.

Results There is clear evidence of the need for effective community-based physical activity initiatives that address the unique needs of Aboriginal children, their families and their community.

Conclusions Effective physical activity interventions have an enormous potential for reducing the risk for chronic disease in Aboriginal children. **Health & Fitness Journal of Canada 2008;1(1):9-13.**

Keywords: Aboriginal health, children, qualified exercise professional, physical activity, diabetes

INTRODUCTION

The risk for chronic disease is established in childhood. A growing body of evidence indicates that many Canadian children are at an increased risk for multiple chronic conditions. Physical inactivity has been linked directly to the increasing risk for and incidence of chronic disease in Canadian children. According to Health Canada, less than 50% of Canadian children are physically active enough to maintain good health.

Recent evidence indicates that Aboriginal children (inclusive of First Nations, Métis, and Inuit peoples) may be at even greater risk (than the general population) for the development of chronic diseases such as diabetes and cardiovascular disease. Physical inactivity is an important modifiable risk factor for the multiple chronic diseases exhibited in Aboriginal peoples. As such, it holds that effective prevention models that target Aboriginal children and serve to enhance physical activity levels are warranted to improve the health status of this at-risk population.

The primary purpose of this paper was to review briefly the literature to examine the importance of the routine physical activity and community-based physical activity interventions in Aboriginal children.

Qualified exercise professionals (QEPs) play a central role in the development and implementation of effective exercise interventions in British Columbia and throughout Canada. As such, a secondary purpose of this article to briefly inform QEPs of the key factors that should be considered

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when developing culturally appropriate and competent physical activity interventions for children of Aboriginal descent. It is also the intent of this article to inform the general public of the role the QEP plays in the development of effective physical activity interventions that address the unique needs of varied clientele.

Risk for Chronic Disease in Aboriginal Children

It is clear that the risk for chronic disease is established in childhood (Kavey et al. 2003). Many Canadian children exhibit multiple risk factors for chronic disease (e.g. low physical activity levels, obesity, high cholesterol, high blood pressure) (McKay et al. 2004; Reed et al. 2008). Importantly, the incidence of risk factors for chronic disease in children may also be underestimated since several studies have revealed that recently identified (“emerging”) risk factors for chronic disease (in particular CVD) may be present years before traditional risk factors are observed (Warburton et al. 2006a).

Aboriginal children appear to be at an even greater risk (than the general population) for the development of chronic disease. Canadian Aboriginal children have an increased incidence of type 2 diabetes and obesity (Young et al. 2002). For example, Young et al. (2000) reported that 64% and 60%, respectively, of female and male Aboriginal children (aged 4 to 19 yr) exceeded the 85th percentile of the US National Center for Health Statistics reference data for BMI. Moreover, over 40% of female and 34% of male Aboriginal children exceeded the 95th percentile. A recent study by Katzmarzyk (2008) revealed that the prevalence of obesity in Canadian youth was higher among Aboriginals (15.8%) versus non-Aboriginals (8.0%).

The prevalence of type 2 diabetes is thought to be at least 3-5 times higher among Aboriginal children than the general population (Fagot-Campagna et al. 2000; Dean, 1998). Aboriginal children also appear to experience an earlier onset of diabetes than the general population. Furthermore, the

number of undiagnosed, asymptomatic cases of diabetes is thought to be at least twice the number of known cases (Dean, 1998). As such, Aboriginal children are considered a population that is at an increased risk for the development of chronic disease.

Role of Physical Activity in the Prevention of Chronic Disease in Aboriginal Children

Physical inactivity is associated with the development of a host of chronic diseases (including type 2 diabetes and cardiovascular disease (CVD)) and premature mortality (Blair and Brodney 1999; Booth et al. 2000; Katzmarzyk et al. 2000; Warburton et al. 2006a, 2006b; Warburton et al. 2007c, 2007d). The health benefits of routine physical activity have been publicized widely (e.g., Canada's Physical Activity Guide to Healthy Active Living). However, the majority of Canadians across the lifespan (Canadian Fitness and Lifestyle Research Institute 2001) do not meet the minimal requirements for physical activity wherein health benefits are thought to occur (Canadian Fitness and Lifestyle Research Institute 1998; Craig et al. 1999; Katzmarzyk et al. 2000; Warburton et al. 2007c, 2007d). Clearly, the burden of physical inactivity on Canadian society is enormous (Booth et al. 2002; Katzmarzyk et al. 2000).

Physical inactivity has been linked directly to the increasing prevalence of overweight, obesity, and diabetes in children. Most international experts agree that the physical activity levels of North American children are below that recommended for healthy living and the protection against future disease (U.S. Department of Health and Human Services, 1991; Janssen, 2007). Few Canadian youths meet the Canadian and international guidelines for physical activity (Janssen, 2007). This problem worsens with increasing age, and is exacerbated in girls who consistently exercise less than boys (Canadian Fitness and Lifestyle Research Institute, 2004).

Unfortunately, little information exists regarding the physical activity levels of Aboriginal children. Preliminary evidence

does however indicate that the physical activity levels of Aboriginal children are also low (Katzmarzyk, 2008). In fact addressing this deficit is a priority of the Canadian Society for Exercise Physiology (CSEP) and the Public Health Agency of Canada (see www.csep.ca for a summary of seminal research that is currently being conducted in this area).

Role of the Qualified Exercise Professional

It is clear that physical inactivity is an important modifiable risk factor for the multiple chronic diseases exhibited in Aboriginal peoples. As such, we are strong advocates for the widespread adoption of effective community-based physical activity initiatives that are particularly tailored to Aboriginal children. Qualified exercise professionals (such as CSEP-Certified Personal Trainers and CSEP-Certified Exercise Physiologists) are at the forefront of many physical-activity based health promotion strategies within the province of British Columbia and across Canada.

With advancements in university training in the exercise sciences (particularly clinical exercise physiology) and national certifying bodies (such as CSEP in Canada and the American College of Sports Medicine in the United States) the role of the QEP has been well established (Warburton et al. 2007a; Warburton et al. 2007b). University-trained and nationally certified QEPs have extensive training in both exercise testing and prescription (Warburton et al. 2006a, 2006b). The QEP has also passed rigorous, independent, national written and practical examinations to establish their competency for work with at risk populations.

The university-trained QEP plays an essential role in the health and fitness industry. Their advanced training makes them ideally suited to design safe and effective physical activity interventions that address the needs of Aboriginal children.

Barriers to Physical Activity in Aboriginal Populations

It has been suggested that a change in the traditional lifestyle of Aboriginal peoples has a significant effect upon their health status (Coble and Rhodes 2006; Joe 2001). For instance, Native-American women recognize that they have different eating habits and do not engage in daily physical activities that were once characteristic of past generations (Thompson et al. 2002). Aboriginal research (including that of our own research group) indicates that Aboriginal peoples experience several barriers to living a physically active lifestyle. For instance, Coble and Rhodes (2006) revealed that safety concerns, lack of facilities and programs, bad weather, and poor infrastructure (e.g. sidewalks) are considered to be key barriers to physical activity in Native Americans.

It is also apparent that Aboriginal children experience various barriers that limit their participation in organized sport including racism, decreased access to sporting facilities and program and the cost of sport participation (B.C. Ministry of Tourism Sport & the Arts 2006). Barriers to physical activity within the school environment have also been observed for both Native-American and non-native children. Within school barriers include a lack of facilities, equipment, and appropriately trained staff for physical education (Thompson et al. 2001). Thus, effective community-based physical activity initiatives are desirable and warranted.

Several approaches to improving physical activity levels in Aboriginal peoples have been recommended including providing affordable and accessible physical activity programs and facilities, a greater community emphasis on physical activity and programs that included interventions that addressed the needs of families and community leaders (Thompson et al. 2002). For the QEP it is imperative that they address these issues and provide affordable, modifiable, community-based physical activity initiatives that are inclusive of children, parents, families and community leaders.

Preferred Physical Activities of British Columbia Aboriginal Peoples

Coble (2006) in a recent study revealed that Aboriginal people (from the Interior of British Columbia) engage in traditional activities (e.g. pow wow dancing) as well non-traditional activities (e.g. softball and basketball). It was apparent that Aboriginal activity preferences had increasingly moved away from traditional activities to more sport and lifestyle activities. The finding that Aboriginal communities participate in a broad spectrum of physical activities, traditional or otherwise, is consistent with other investigations (Henderson and Ainsworth 2000). It is also important to note, that physical activity is seen not only as a health promoting behaviour, but also as a behaviour that reinforces the social network within the Aboriginal community (Coble 2006). This knowledge is instrumental in the development of culturally specific physical activities that meet the unique needs of Aboriginal children. In BC, we are currently working on various resources that are culturally specific and appropriate for use with Aboriginal children.

Effective Physical Activity Interventions with Aboriginal Children

Based on our experience and current literature in the field it appears that the most effective physical activity interventions are those that involve the key stakeholders, parent and community leaders in the planning, design, and implementation of the community-based physical activity initiative. A community-based physical activity program must maintain the cultural relevance and the integrity of Aboriginal communities throughout the intervention. Qualified exercise professionals must openly recognize that there is considerable diversity within various Aboriginal populations. It is essential to realize that the traditions and cultural activities likely vary from one community to another. With effective collaboration with Aboriginal community leaders, the individual physical activity program can be tailored to the specific needs, traditions and cultural

norms of the respective Aboriginal communities.

CONCLUSIONS

We have highlighted the need for effective community-based physical activity initiatives that address the unique needs of Aboriginal children, their families and their community. Creating effective physical activity interventions have an enormous potential for reducing the risk for chronic disease across the lifespan. As the leaders in the health and fitness industry, it is essential that QEPs create physical activity programs that are based on best practices and that meet the distinctive requirements of Aboriginal children. Together we can work together to ensure that Aboriginal children reap the health benefits of physical activity across their lifespan.

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